

Plot 10/20 Spring  
Road, Bugolobi,  
P. O. Box 70863  
Kampala, Uganda  
[www.nfa.go.ug](http://www.nfa.go.ug)



Tel: 0312-264 035/6  
0414 360400  
Fax: 0414 230369  
[info@nfa.go.ug](mailto:info@nfa.go.ug)

**NFA/C/2/23**

12<sup>th</sup> December, 2023

The Executive Director  
National Environment Management Authority  
P. O. Box 22555  
**KAMPALA.**

**RE: SUBMISSION OF THE ENVIRONMENTAL AND SOCIAL IMPACT STATEMENT FOR THE PROPOSED CONSTRUCTION OF A VISITOR INFORMATION CENTER FACILITY IN BUDONGO CENTRAL FOREST RESERVE AT AKIMI B VILLAGE, GARASOYA PARISH, KIHUNGYA SUBCOUNTY, BULIISA DISTRICT**

National Forestry Authority is implementing the World Bank funded project - Investing in Forests and Protected Areas for Climate-Smart Development (IFPA-CD project - P170466). The overall goal of the project is to improve sustainable management of forests and protected areas and increase benefits to communities in target landscapes. The project will support NFA through a number of activities which include investments in ecotourism among others.

One of the project's investments is the construction of the Visitor Information Center in Budongo Central Forest Reserve. NFA has undertaken preparation of the Environmental and Social Impact Assessment as per schedule 5, category 10 (i) "Construction of administration, educational and research infrastructure in protected areas of a capacity of more than 50 persons", of the National Environment Act, 2019. The location of the proposed project site within Budongo Central Forest Reserve is within the GPS coordinates shown in the table below.

| UTM coordinates (36N WGS 1984) |               |                |
|--------------------------------|---------------|----------------|
| Point                          | Easting (m E) | Northing (m N) |
| ABud                           | 329718        | 189646         |
| BBud                           | 329810        | 189551         |
| CBud                           | 329613        | 189407         |
| DBud                           | 329522        | 189523         |

The total project cost is estimated at US \$ 930,025.04 (Nine hundred thirty thousand twenty-five and four hundredths US Dollars only).

This is to submit the final Environmental and Social Impact Statement for your review and approval.

A handwritten signature in blue ink, appearing to read 'Stuart Maniraguha'.

Stuart Maniraguha  
**For: EXECUTIVE DIRECTOR**



Uganda Revenue Authority  
DEVELOPING UGANDA TOGETHER

## Payment Receipt

For General Tax

call our Toll Free

(256) 800117000

Or log on to URA web portal

<https://www.ura.go.ug>

Notice DT-2079

Notice Date : 21/12/2023

### NATIONAL FORESTRY AUTHORITY

1020,NATIONAL FORESTRY AUTHORITY,SPRING  
ROAD BUGOLOBI,  
KISWA,  
ZONE 2,  
NAKAWA DIVISION,NAKAWA DIVISION,

### Notice Number

OCTW240047075

### TIN :

1000027589

### Section A - Payment Information

| Sr No | Payment Registration | Tax Head                                                                                                                                                                       | Reference Number | Date of Payment | Amount       |
|-------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|--------------|
| 1     | 1240009099520        | NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY -> ENVIRONMENT IMPACT ASSESSMENT -> FEES PAYABLE ON PROJECTS -> Total vale is more than 2.5bn but does not exceed 5bn-EIA Submission | 991OEPD23332000F | 28/11/2023      | 763,784.00   |
| 2     | 1240009145133        | NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY -> ENVIRONMENT IMPACT ASSESSMENT -> FEES PAYABLE ON PROJECTS -> Total vale is more than 2.5bn but does not exceed 5bn-EIA Submission | 991OEPD233330005 | 29/11/2023      | 718,677.00   |
| 3     | 1240009145315        | NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY -> ENVIRONMENT IMPACT ASSESSMENT -> FEES PAYABLE ON PROJECTS -> Total vale is more than 2.5bn but does not exceed 5bn-EIA Submission | 991OEPD23332000G | 28/11/2023      | 735,981.00   |
| Total |                      |                                                                                                                                                                                |                  |                 | 2,218,442.00 |

### Section B - Official MDA Representative

|                                                                                         |                                        |
|-----------------------------------------------------------------------------------------|----------------------------------------|
| <b>Authorized Signature</b>                                                             | <b>Designation of Signatory</b><br>MDA |
| <b>Name of Signatory</b><br>Gerald Nkurunziza                                           | <b>Contact Number</b>                  |
| This receipt has been issued for and on behalf of the Commissioner/Commissioner General |                                        |

## Uganda Revenue Authority

For General Tax Questions

call our Toll Free

0800117000

Or log onto URA web portal

<https://ura.go.ug>

Notice DT-2074

Notice Date: 12/12/2023

### NATIONAL FORESTRY AUTHORITY

1020, NATIONAL FORESTRY AUTHORITY, SPRING ROAD  
BUGOLOBI,  
ZONE 2, KISWA, NAKAWA DIVISION,  
NAKAWA DIVISION, BUGOLOBI, KAMPALA

Taxpayer BRN :

Taxpayer TIN 1000027589

Payment Registration Number

1240009145133



### Payment Registration Details

|                     |                                                                                                                                                                                      |                       |            |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|
| <b>Tax Head</b>     | NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY -> ENVIRONMENT IMPACT ASSESSMENT -> FEES PAYABLE ON PROJECTS -> Total value is more than 2.5bn but does not exceed 5bn-EIA Submission fees |                       |            |
| Base Value (in Ugx) | NA                                                                                                                                                                                   | Amount (in Ugx)       | 718,677.00 |
| BPAF Serial Number  | NA                                                                                                                                                                                   | Units                 | NA         |
| Reference Number    | 9910EPD233330005                                                                                                                                                                     | Identity Proof Type   | NA         |
| Reference Date      | NA                                                                                                                                                                                   | Identity Proof Number | NA         |

To be filled by taxpayer during payment at bank

|                                   |                  |                     |  |
|-----------------------------------|------------------|---------------------|--|
| <b>Bank Name:</b>                 | Bank Of Uganda   |                     |  |
| <b>CHEQUES ONLY</b>               |                  |                     |  |
| <b>Bank</b>                       | <b>Cheque No</b> | <b>Amount (Ugx)</b> |  |
|                                   |                  |                     |  |
| <b>Amount in words:</b>           |                  |                     |  |
|                                   |                  |                     |  |
|                                   |                  |                     |  |
| <b>BANK STAMP AND ENDORSEMENT</b> |                  |                     |  |
|                                   |                  |                     |  |
| <b>CASH ONLY</b>                  |                  |                     |  |
| <b>Currency</b>                   | <b>Amount</b>    |                     |  |
| 50,000/=                          |                  |                     |  |
| 20,000/=                          |                  |                     |  |
| 10,000/=                          |                  |                     |  |
| 5,000/=                           |                  |                     |  |
| 2,000/=                           |                  |                     |  |
| 1,000/=                           |                  |                     |  |
| 500/=                             |                  |                     |  |
| 200/=                             |                  |                     |  |
| 100/=                             |                  |                     |  |
| 50/=                              |                  |                     |  |
| 20/=                              |                  |                     |  |
| 10/=                              |                  |                     |  |
| 5/=                               |                  |                     |  |
| <b>Total</b>                      |                  |                     |  |

|                            |                  |                      |              |
|----------------------------|------------------|----------------------|--------------|
| <b>Signature :</b>         |                  | <b>Contact No. :</b> | 0800117000   |
| <b>Name of Signatory :</b> | Marion Namunyolo | <b>Search Code :</b> | FTNHFFVXYCA3 |

This Payment Registration Slip can be obtained from the URA web portal for your future tax payments. This payment registration shall remain valid upto 02/01/2024. After expiry of payment registration you will not be able to use the same for effecting your payment at bank. You will be required to register your payment again. If this payment registration slip is lost or defaced, you may reprint a copy from your email box or register another payment on the web portal.

After payment to the bank, you can check status either at nearest tax office or URA web portal on [ura.go.ug](https://ura.go.ug). You are advised to use search code provided on this Payment Registration Slip to track the status.



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**CONSTRUCTION MEASUREMENT AND COST CONSULTANTS**

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**OUR REF:** CCEL/VIC/BUD/REP1/Rev1

27<sup>th</sup> September 2023

**TO:** The Executive Director  
National Forestry Authority  
Plot 10/20 Spring Road  
P.O Box 70863, Kampala

**THROUGH:** FBW Uganda Ltd.

P.O Box 24843, Kampala  
&  
World Bank Group  
Rep: Ms. Lesya Verheijen ([lverheijen@worldbank.org](mailto:lverheijen@worldbank.org))

**QUANTITY SURVEYOR REPORT ON ESTIMATED CONSTRUCTION PROJECT INVESTMENT COST**

**Executive Summary**

|                               |                                                                                                                                                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Client/Financiers             | National Forestry Authority/World Bank Group                                                                                                                  |
| Project                       | Proposed Construction of a Visitor Information Centre Facility at Budongo Forest                                                                              |
| Projected Investment Estimate | US \$ 930,025.04 (Inc. VAT)                                                                                                                                   |
| Project Design Consultants    | FBW Uganda Limited                                                                                                                                            |
| Contact                       | <a href="mailto:fvanmarrewijk@fbwarchitecten.nl">fvanmarrewijk@fbwarchitecten.nl</a> / <a href="mailto:f.vanmarrewijk@gmail.com">f.vanmarrewijk@gmail.com</a> |

## Introduction

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We, CCELAM NK & ASSOCIATES, as sub-consultants under FBW UGANDA LTD (the Project Design Consultants) have undertaken measurements and costings against Architectural, structural and other design information provided by FBW Uganda Ltd. for the Proposed Construction of a Visitor Information Centre Facility at Budongo Forest.

All details of the Financiers and Client (End-user entities) are as advised by FBW Uganda Ltd.

It is our understanding that the Client has requested for this report for purposes of submission to statutory regulatory bodies in the process of obtaining pre-construction certifications, licences, permissions etc. This report is not intended for general circulation, publication or reproduction for any other person or purpose without prior express written permission in each specific instance.

It is our considered opinion, for the purpose of this assignment, that the Investment Cost Estimate for the project is as follows:

**TOTAL DEVELOPMENT COST ESTIMATE: US \$ 930,025.04 (United States Dollars Nine Hundred Thirty Thousand and Twenty-Five and cents Four) inclusive of VAT.**

## Project Investment Cost Estimates

Below is the Pre-Tender Cost Estimate for the above project, as breakdown for the total Development Cost of **US \$ 930,025.04**

| No.                                                     | Bill Section Description                       | Estimated Cost (Excl VAT) – (US \$) | VAT Amount (US \$) | Estimated Total (Inc. VAT) | REMARKS    |
|---------------------------------------------------------|------------------------------------------------|-------------------------------------|--------------------|----------------------------|------------|
| Estimated cost of Structures, Services & External Works |                                                |                                     |                    |                            |            |
| 1                                                       | Preliminaries                                  | 41,868.00                           |                    |                            |            |
| 2                                                       | Civil/Main Builder's Work                      | 430,288.49                          |                    |                            |            |
| 3                                                       | Mechanical and Electrical costs                | 129,137.60                          |                    |                            |            |
| 4                                                       | External Works                                 | 38,688.00                           |                    |                            |            |
| 5                                                       | Provisional Sums                               | 20,500.00                           |                    |                            |            |
| 6                                                       | Contingency                                    | 33,024.10                           |                    |                            |            |
| 7                                                       | Environmental & Social Management Costs        | 23,000.00                           |                    |                            |            |
| <b>SUB-TOTAL</b>                                        |                                                | <b>716,506.19</b>                   |                    |                            |            |
| b.                                                      | Land acquisition costs                         |                                     |                    |                            | See Note 1 |
| c.                                                      | Local Authority Charges                        |                                     |                    |                            | See Note 2 |
| d.                                                      | NEMA Licencing Fees                            |                                     |                    |                            | See Note 3 |
| e.                                                      | Professional Fees                              | 71,650.62                           |                    |                            | See Note 4 |
|                                                         | <b>TOTAL ESTIMATED INVESTMENT COST (US \$)</b> | <b>788,156.81</b>                   | 141,868.23         | <b>930,025.04</b>          |            |
|                                                         | <b>GROSS FLOOR AREA:</b>                       | <b>525 Sq. Mtrs</b>                 |                    |                            |            |

Note 1: All land is Client-owned – no land acquisition costs

Note 2: Client (through FBW) advised that no local authority charges apply in protected areas

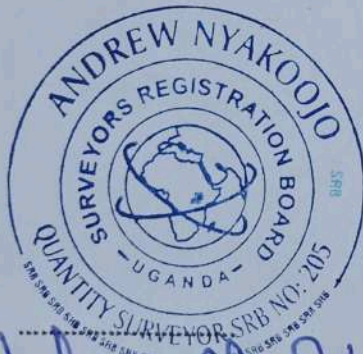
Note 3: NEMA licensing fees – to be determined by the End-User Entity.

Note 4: A percentage of 10% has been used for estimate purposes, as advised by the Client (through FBW)

## Notes on the Estimate

- (i) The estimate is an opinion of probable cost only and reflects current local market rates for a small-medium contractor, based on normal competitive conditions.
- (ii) The Quantity Surveyor does not guarantee that actual construction costs will not vary from this estimate. Adverse market conditions, reduced competition among contractors (or other unforeseeable economic, political, social, legislative/legal issues etc.) may cause bids to vary from reasonable estimates based on normal competitive conditions.
- (iii) The Construction Cost Estimate includes all direct construction costs, professional fees, fees to statutory regulatory and local authority bodies and other costs applicable to a construction investment.

This Investment Cost Estimate has been undertaken on a totally independent and unbiased basis.



**ANDREW NYAKOOJO.**

27-09-2023

PARTNER; CCELAM NK & ASSOCIATES

BSc. Quantity Surveying (MAK); Ordinary Diploma in Building & Civil Engineering (UPK);

Fellow, Institution of Surveyors of Uganda; Registered Quantity Surveyor No.205.



## Appendix

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### **BRIEF DESCRIPTION OF THE STRUCTURES AND SERVICES:**

**Foundations:** Mass concrete bases and ground beams

**Floor Construction:** Raised timber deck floor on steel support frame accessed by metal stairs

**Steel structure:** 150x150mm hollow steel sections, supported off the concrete bases continue up to support light pre-fabricated steel trusses.

**Walling and room space functions:** Composite dry walling (Cement boards externally, plasterboard internally) supported on metal studs. The walling has been arranged to achieve fully enclosed stand-alone spaces, with an open concept for the external circulation spaces and display areas. Enclosed space functions are: Reception, Workshop/Utilities, shops, Kitchen, First Aid Clinic, staff room/ Library and auditorium. Outer open areas are for circulation and display/exhibition.

**Finishes:** Varnished timber floors; minor floor and wall tiling (kitchen area); proprietary textured render finishes to walls internally and externally; composite suspended ceiling: fiberglass reinforced plastic and plasterboard and natural wicker mat to the undersides of trusses.

**Internal built-up fittings:** Fit-out to kitchen only includes granite top counters, storage cupboards etc. Exhibition and display panels in open areas are in composite construction of steel, wood and glass.

**Windows:** Glass louvre windows with metal frames

**Doors:** Solid core flush doors to main rooms and galvanized roller shutters to storage areas.

**External Works:** Site Clearance and site stripping; roads, parkings and walkways mostly in loose gravel or compacted murrum; landscaping features including botanical gardens; display and directional features, bamboo trash bins; timber exhibition display; tree planting etc.

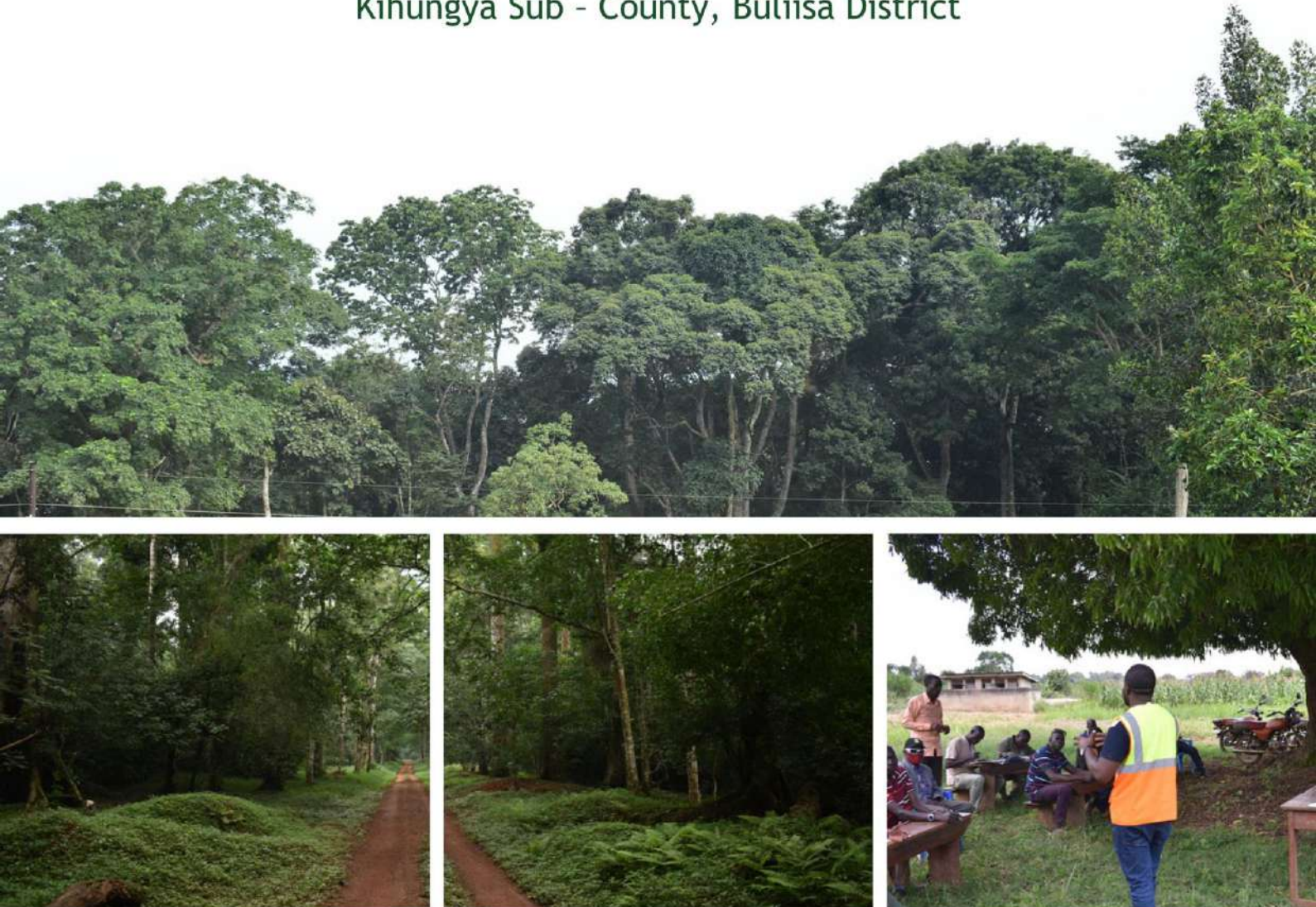
**Electrical Installations:** The main concept is the use of an off-grid photovoltaic solar power system. All other installations are standard simple use equipment and accessories for: power distribution and control (distribution boards and consumer units); small power and lighting; fire alarm systems; lighting and lightning protection.

**Mechanical Installations:** The main defining aspect is that there is the main structure and a separate toilet block. Therefore, the only water supply and discharge from the main building is at the kitchen and the first aid clinic sinks. Water installations are for both cold and hot water supply. The installations in the toilet block are standard equipment and accessories (water closets, wash hand basins, urinals, towel rails etc.). Other installations in the main house include firefighting (portable fire extinguishers) and ventilation installations (ceiling fans, extract fans and fresh air louvres).

External drainage of waste water from appliances and foul water from the toilets will be to a special decentralised anaerobic baffled reactor (ABR).

# ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A VISITOR INFORMATION CENTER

In Budongo Central Forest Reserve in Akiimi B Village, Garasoya Parish, Kihungya Sub - County, Buliisa District



Submitted By:



National Forestry Authority  
Plot 10/20, Spring Road,  
P.O. Box 70863, Kampala - Uganda

Development partners:



Prepared By:



Gissat Environment Associates  
House 26 Tank Hill Road, Muyenga  
P. O. Box 21598, Kampala, Uganda  
Tel: (+256) 700411414  
(+256) 760539469  
Email: talk2gissat@gmail.com;  
info@gissat.org  
Web: www.gissat.org

In association with:



FBW Uganda Limited  
P.O. Box 24843, Kampala  
+256(0)393 260 138, +256(0) 200  
960 138  
kampala@fbwgroup.com

|                             |                                                                                                                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Title               | The Development of a Visitor Information Centre in Budongo Central Forest Reserve at Busingiro Camp Site in Akimi B Village, Garasoya Parish, Kihungya Sub – County Buliisa District |
| Document Title              | Environmental and Social Impact Assessment                                                                                                                                           |
| Project Code                | GEA 220109                                                                                                                                                                           |
| Date                        | August 2023                                                                                                                                                                          |
| Project Proponent           | National Forestry Authority                                                                                                                                                          |
| Project Team Representative | Stuart Maniraguha                                                                                                                                                                    |
| Project Coordinator         | Sylvia Tumusiime                                                                                                                                                                     |

#### Administration /contact information

Correspondence Address: Gissat Environment Associates  
House 26 Tank Hill Road, Muyenga  
P. O. Box 21598, Kampala, Uganda  
Tel: (+256) 700411414 | (+256) 760539469  
Email: [talk2gissat@gmail.com](mailto:talk2gissat@gmail.com); [info@gissat.org](mailto:info@gissat.org)  
Web: [www.gissat.org](http://www.gissat.org)

Name of Representative: Harriet Mujuni  
Mobile Tel: +256 772 705796 / 752 705796  
Email: [harriet.mujuni@gmail.com](mailto:harriet.mujuni@gmail.com); [hmujuni@gissat.org](mailto:hmujuni@gissat.org)

#### Document Control

|             |           |                 |                      |                                                                                                |          |
|-------------|-----------|-----------------|----------------------|------------------------------------------------------------------------------------------------|----------|
| Document ID |           | GEA  220109 EIA | Contract No.         | GEA 220109                                                                                     |          |
| Client      |           |                 | Client address       | National Forestry Authority<br>Plot 10/20, Spring Road,<br>P.O. Box 70863, Kampala –<br>Uganda |          |
| Rev         | Date      | Review details  | Author               | Quality Assurance                                                                              | Approver |
| 1           | 1/03/2023 | Draft           | JN, KR, PKK, IT, RDL | HM                                                                                             | HM       |

#### Submission:

| Recipient (s)                                                                     | Organization /Contact                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stuart Maniraguha<br><br>Sylvia Tumusiime                                         | National Forestry Authority<br>Plot 10/20, Spring Road,<br>P.O. Box 70863, Kampala - Uganda<br>Telephone Contacts: +256-312-264035/6<br>Email: <a href="mailto:info@nfa.go.ug">info@nfa.go.ug</a>                                                                 |
| The World Bank Group<br><br>Eng. James Labongo<br>Lesya Verheijen<br>Stephen Ling | Team Leader<br>Consultant / WBG<br><a href="mailto:labongojames.soltech@gmail.com">labongojames.soltech@gmail.com</a><br><a href="mailto:lesya.verheijen@gmail.com">lesya.verheijen@gmail.com</a><br><a href="mailto:sling@worldbank.org">sling@worldbank.org</a> |



## EXECUTIVE SUMMARY

### E.1 Overview

Uganda is endowed with various tourism attractions including wonderful birding opportunities, game viewing, mountain gorilla and chimpanzee tracking, beautiful scenery, cultural and faith-based institutions. Uganda's forests on their own provide several tourism products including gorilla tracking, birding and chimpanzee watching, nature guided walks, community walks, butterfly viewing, viewing golden patas monkeys and canopy-based ecotourism. It is estimated that Uganda has more than 50 percent of the world's mountain gorillas, 7 percent of the world's mammal species, 11 percent of the world's bird species (1,061 bird species) and a wide variety of moths and butterflies (Plumptre et al., 2003).

Whereas Uganda's tourism potential is high with travel and tourism revenues forecast to contribute over 8 percent of GDP by 2027, most tourist facilities provide the traditional ecotourism experience based on wildlife viewing in the savannah parks. The potential of more novel and relatively new tourism approaches like canopy tours, zip lines, bungee jumping and white-water rafting has not been tapped.

GoU with funding from the World Bank (WB) is implementing a project on Investing in Forests and PAs for Climate Smart Development (IFPA-CD)" with the objectives of improving the sustainable management of forests and PAs and increasing benefits from those endowments in the Albertine graben. This project facility could be tapped to provide initial funding to open up Uganda's natural forests to both traditional and new tourism opportunities by designing and constructing a customised and themed visitor information centre in Budongo Central Forest Reserve within the Albertine landscape. It is anticipated the visitor information centre will improve the infrastructure and visitor facility scope in the Central Forest Reserve (CFR) and boost visitor experiences.

In order to complete the application for environmental authorization of the project, the appointed Project Design Team (FBW Uganda) contracted independent Environmental Assessment Practitioners - Gissat Environment Associates to undertake the Environmental Impact Assessment Studies required in terms of the National Environment (Environmental and Social Assessment) Regulations (NEESA), 2020. This document is the final Environmental and Social Impact Statement (ESIS) for the project.

This report has been compiled in accordance with the NEA 2019, the NEESA Regulations, 2020, the National Forestry and Tree Planting Act, 2003, as well as the World Bank Environmental and Social Framework, particularly the Environmental and Social Standard on Assessment and Management of Environmental and Social Risks and Impacts (ESS1). Others include the World Bank Group Environmental Health and Safety Guidelines (EHSs)

### E.2 The project

The planned VIC will comprise of various functions – ranging from reception / front office, auditorium, briefing, exhibition / cafe, secured storage, back office, workshop areas and sanitary facilities and ample parking space. The planned VIC will be used to improve the visitor experience in the CFR and encourage visitors to stay longer. The location of the preferred site within the forest reserve are shown in the table below; the site plan and artistic impression are given in figure E1 and E2 respectively.

| Proposed VIC                   | Location details                                                                                  | Coordinates<br>UTM coordinates (36N WGS 1984) |
|--------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Budongo Central Forest Reserve | Busingiro Camping Site in Akiimi B Village Garasoya Parish Kihungya Sub – County Buliisa District | Point                                         |
|                                |                                                                                                   | A <sub>Bud</sub>                              |
|                                |                                                                                                   | B <sub>Bud</sub>                              |
|                                |                                                                                                   | C <sub>Bud</sub>                              |
|                                |                                                                                                   | D <sub>Bud</sub>                              |
|                                |                                                                                                   | Easting (m E)                                 |
|                                |                                                                                                   | Northing (m N)                                |
|                                |                                                                                                   | 329718                                        |
|                                |                                                                                                   | 189646                                        |
|                                |                                                                                                   | 329810                                        |
|                                |                                                                                                   | 189551                                        |
|                                |                                                                                                   | 329613                                        |
|                                |                                                                                                   | 189407                                        |
|                                |                                                                                                   | 329522                                        |
|                                |                                                                                                   | 189523                                        |

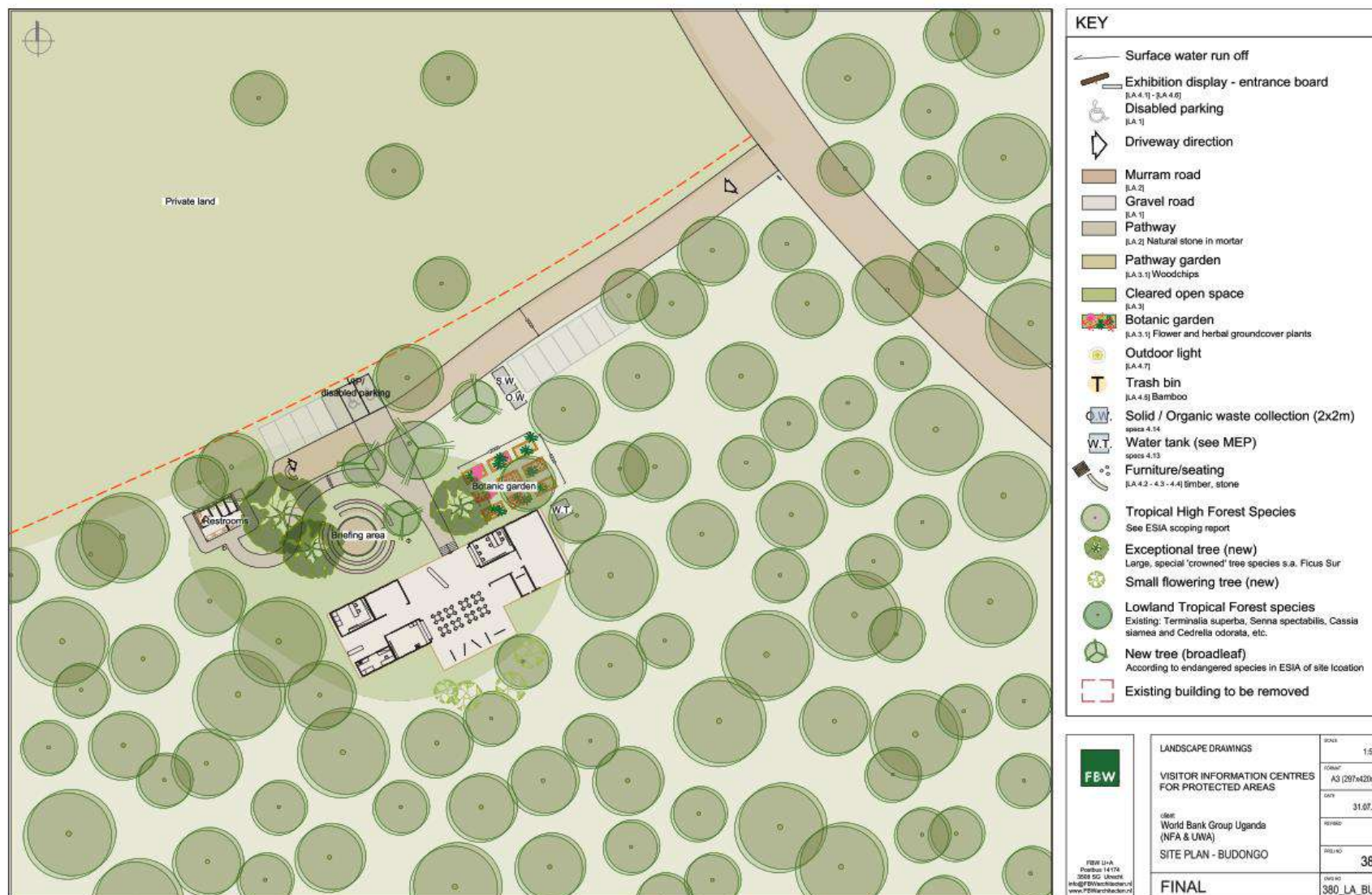


Figure E.1: Site plan for the proposed Budongo VIC





Figure E.2: Artistic impression of the proposed VIC at Busingiro in BCFR

### **E.3 Objectives of the study**

The major objective of the environmental assessment study was to evaluate the effects/impacts of proposed VIC in relation to the general environmental aspects i.e. physical, biological, and social-economic environment. It aims at influencing the protection and co-existence of the VIC with the surroundings as well as the compatibility of the proposed development to the area; to ensure and enhance sustainable environmental management during the operation phase. The project assessment focusses on the 3 major phases i.e.:

- Construction phase;
- Operational phase; and
- Decommissioning phase

Specific assessment objectives pinned to these activities were to:

- a) Identify and analyse the impacts of the proposed project on the natural environment;
- b) Evaluate impacts of the project on the socio-cultural environment;
- c) Assess impacts on infrastructure and social amenities (traffic, drainage, water supply);
- d) Identify and predict impacts on and changes in development policy with respect to the area; and
- e) Formulate an Environmental and Social Management Plan (ESMP).

### **E.4 Study Materials and Methodology**

To achieve these objectives, the assessment methodology used consisted of desktop studies to review literature on environmental impacts emanating from the construction, operation and decommissioning of the proposed project. Field investigations were undertaken to establish baseline physical, biological, environmental and socio-economic aspects. Baseline data for the study area was collected using a combination of: site reconnaissance, desktop research, analysis of maps and plans, review of reports of related projects, public consultations and specialist studies *inter alia*.

### **E.5 Pertinent Legal Framework**

This project report has been developed to ensure that the proposed development of the Visitor Information Centre is in conformity with national policy aspirations towards securing sustainable development. Specifically, this report has been developed to ensure compliance with requirements of the National Environment Act (NEA, 2019) which is the framework law on environment management in Uganda. Part X - Section 110 of NEA requires that all proposed developments listed under Schedules 4 & 5 of the Act are subjected to environmental and social impact assessment and to be conducted in line with the National Environment (Environmental and Social Assessment) Regulations, 2020.

The regulatory framework for the ESIA is provided in chapter two of the report, including but not limited to the Ugandan legislation; and World Bank Environmental and Social Framework. The salient legislative instrument and institutions applicable to the proposed project are tabulated hereunder:

#### **Box E.1 Summary of the legislative and institutional framework**

##### **Policy framework**

The National Environment Management Policy, 1994  
Uganda Forestry Policy, 2001  
Uganda Tourism Policy, 2015  
Uganda Wildlife Policy, 2014  
Uganda National  
Cultural Policy 2006  
Uganda Museums and Monuments Policy 2015  
National Climate Change Policy, 2015  
National Policy for the Conservation and Management of Wetland Resources



The Uganda National Land Policy (2013)  
The National Employment Policy for Uganda, 2011  
The National Youth Policy, 2001  
The Uganda Gender Policy, 2007  
Uganda National HIV and AIDS Policy, 2011  
The National Policy on Persons with Disability, 2006  
The Renewable Energy Policy for Uganda, 2007  
Solar Power Subsidy (2007)  
Uganda National Medicines Policy 2015

#### **Legal framework**

The National Environment Act, 2019  
The National Forestry and Tree Planting Act, 2003  
Tourism Act 2008  
The Uganda Wildlife Act,  
The Physical Planning Act, 2010  
The Museums and Monuments Act, 2023  
The Water Act, Cap 152  
The Land Act, 2010  
The Occupational Safety and Health Act, 2006  
The Workers' Compensation Act, Cap 225  
The Employment Act, 2006  
The Children Act (as amended), 2016  
The Local Governments Act, Cap 243 (as amended)  
The Traffic and Road Safety Act, Cap 361  
The Uganda Human Rights Commission Act 1997  
Traditional Rulers (Restitution of Assets and Properties) Act 1993  
Institution of Traditional Leaders or Cultural Leaders Act 2011  
Copyright Act and Neighbouring Rights Act 2006  
The Prohibition of the Burning of Grass Act, Cap 33  
The National Climate Change Act, 2021  
The Plant Protection Act (cap 31)

#### **Regulations**

The National Environment (Environmental and Social Assessment) Regulations, 2020  
The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000  
The National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020  
The National Environment (Waste Management) Regulations, 2020  
The National Environment (Noise Standards and Control) Regulations, 2003  
The National Environment (Mountainous and Hilly Areas Management) Regulations, 2000  
The National Environment (Management of Ozone Depleting Substances & Products) Regulations 2020  
The National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001  
The National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003  
The National Forestry and Tree Planting Regulations, 2016

#### **Institutional framework**

National Environment Management Authority (NEMA)  
Uganda Wildlife Authority (UWA)  
National Forestry Authority (NFA)  
Ministry of Tourism, Wildlife and Antiquities (MTWA)  
Ministry of Water and Environment (MWE)  
Ministry of Gender Labour and Social Development (MGLSD)  
Uganda Tourism Board (UTB)  
Uganda Police Force (UPF)

District Local Governments  
Cultural institutions  
Civil Society Organizations (CSO)  
Community-Based Organizations (CBO)

## **E.6 Environment and Socio-Economic Baseline**

### Climate

Buliisa district receives a bimodal rainfall pattern with totals ranging from about 800 mm the Lake Albert flat rising rapidly further away to the east above the escarpment to between 1250 - 1500 mm per annum before tapering off to 1000 mm in the eastern border areas of the District

### Topography

Buliisa district is mainly in the rift valley floor with the highest point at 1800 metres above sea level. The Budongo Forest Reserve is situated to the North-East of Lake Albert at the edge of the Albertine Rift valley. Generally, the topography is rolling with a general slope to the escarpment of the valley to the west

### Geology and soils

Buliisa district lies in the Albertine Graben which is a Cenozoic sedimentary rift basin developed on the Precambrian orogenic belts of the African craton. Available geological and geophysical data suggest that the Albertine Graben has undergone substantial tectonic movements and sedimentary layers of approximately 6 km thickness have been deposited in fluvial deltaic and lacustrine environments. The rocks are mainly classified as Pre-Cambrian basement and sedimentary rock formations

### Flora

The vegetation of the district can be broadly classified into forest, savannah, grassland and swamps. Human activities have had a great influence on the natural vegetation in the district, such as deforestation, wetland degradation, river pollution and many others.

The site is a bushed forest dominated by trees such as; *Celtis africana*, *Maesopsis eminii*, *Cola gingatea*, *Markhamea lutea*, *Ficus sp*, *Voacanga thouarsii* and *Toona sinensis*. Shrubs recorded during the site survey were; *Alchornea sp*, *Vepris nobilis*, *Secamone africana*, *Vitex sp*, *Acalypha bipartia* and *Broussonetia papyrifera* while Herbs recorded were; *Piper sp*, *Achyranthes sp*, *Asystesia gangetica*, *Afromomum sp* and *Periploca sp*.

### Fauna

The forest reserve is home to a host of different bird species ranging from Forest Dependent species (FF), through Forest visitors (F) and generalists (ff). Among the species studied in the forest is the Nahan's Francolin *Ptilopachus nahani*, a globally threatened Galliform. During the ESIA visit, some of the species recorded included; Speckled Mousebird *Colius striatus*, Yellow-whiskered Greenbul *Eurillas latirostris*, Ross's Turaco *Musophaga rossae*, White-browed Robin chat *Cossypha heuglini*, Common Bulbul *Pycnonotus barbatus*, Black and White Casqued Hornbill *Bycanistes subcylindricus*, Yellow-fronted Canary *Crithagra mozambica* and Banded Prinia *Prinia bairdii*.

Busingiro is known to visitors for its Chimpanzee *Pan troglodytes* previously habituated and with trails starting from the defunct campsite. The groups were habituated to form part of the visitor attractions and these were within the proposed site. Other species of primates recorded included; Olive baboon *Papio Anubis*, Black and White Colobus *guereza* and the Vervet monkey *Chlorocebus pygerythrus*.



### Population

According to 2014 Population and Housing results, the population of Buliisa district was 113,161 persons having 57,801 males and 55,360 females. Butiaba sub-county had the highest figure of 28,911 people while Buliisa Town council had the least population of 7,238. The population of Buliisa district is currently projected at, 153,960 people (78,490 males, 75,470 females).

### Health facilities

Buliisa district health system comprises of one Health Sub district with one District General Hospital, 5 Health Centre IIs, 4 Health Centre IIIs and 2 Health Centre IVs.

### Water supply

The access rates in Buliisa vary from 20 % in Butiaba Sub-County to 95 % in Ngwedo Sub-County. Buliisa has 448 domestic water points which serve a total of 106,039 people – 97,049 in rural areas.

### Human and economic development

Buliisa district is endowed with key economic developments that translate to growth opportunities, these include agriculture, urban housing due to road infrastructure, fishing, minerals that include Oil and gas, the newly constructed markets by the Albertine regional sustainable development project

### Transport infrastructure

Buliisa District is linked to other districts by roads and these fall under four categories i.e. district (feeder) roads, urban roads, community access roads and national roads (trunk roads). The district has a total of 373 kms of gazetted road network of which 162 kms are trunk roads, 85 kms are feeder roads and the remaining 126 kms are community access roads.

## **E.7 Stakeholder consultation**

As part of the ESIA process for the project, key stakeholders were engaged to inform both the study and the project. The stakeholders were consulted based on their institutional mandates which govern the project and its activities, and members of the general public within the project affected area. The stakeholders were engaged and an overview of the project was provided to relevant agencies and the community. Their inputs into the project were also sought in order to ensure that their issues/views were considered for incorporation in the study. The various stakeholders and their roles in developing the tourism sector that were consulted during this study are outlined in figure E.3 below.

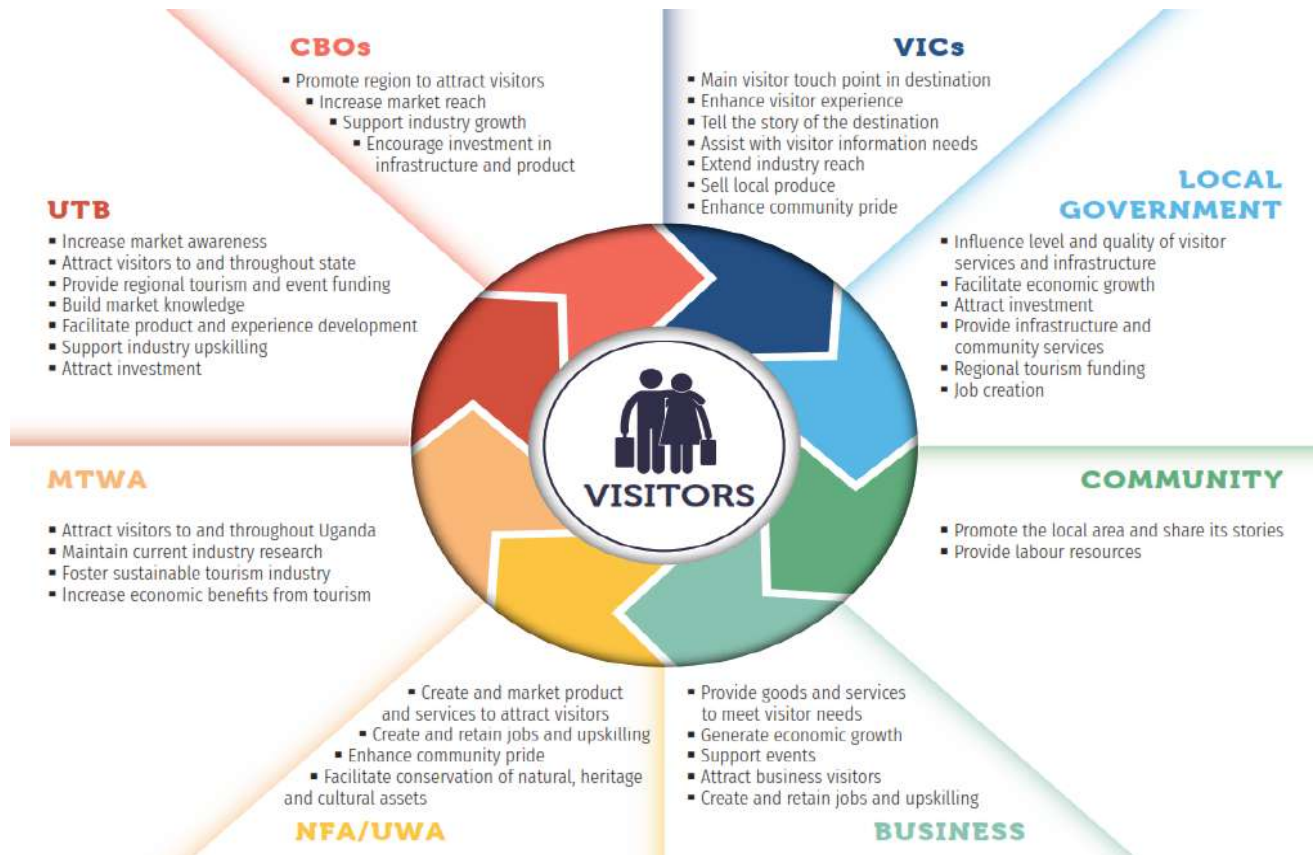


Figure E.3: Stakeholders pertinent to the project

## E.8 Project alternatives

During the project's design phase, a number of alternatives were identified and analysed, including project development at a different site (including major towns outside the CFR), design and layout alternatives, establishment of a digital VIC, the proposed project and the no project alternative. The alternatives were discussed basing on their anticipated project environmental and socio-economic benefits over the associated costs on the environment.

## E.9 Summary of impacts

The project is expected to have environmental impacts on certain aspects of the biophysical and socio-economic environment of the project area during all the 3 key project phases. The impacts of the project were assessed and are generally grouped into those affecting water resources, air quality, flora and fauna, community and their economic activities, soil, vegetation, aesthetics and landscape, noise and human health. Appropriate mitigation measures are also discussed. A summary of key identified impacts for the project is given in tables E.2, E.3 and E.4 respectively.

Table E.2: Summary of potential impacts and proposed mitigation or enhancement measures (construction phase)

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Impact                                                          | Receptors                                          | Magnitude and duration   | Significance                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------|--------------------------|-----------------------------------------|
| 8.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Economic spill over                                             | Communities                                        | High and immediate       | Moderate, positive, irreversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>Engaging reliable local businesses on a contractual basis such as restaurants to provide catering services and health centres to provide medical services among others will enhance the gains these businesses can make and also guarantee quality in services provided to staff.</li> <li>Educating and reiterating to staff members and construction crews on discipline and acceptable social etiquette when interfacing with local businesses to avoid instances of theft, defaulting on credit advanced among other social vices</li> </ol> |                                                                 |                                                    |                          |                                         |
| 8.2.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Technological transfer                                          | Workers, Communities                               | Moderate and medium term | Moderate, positive, irreversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>Establishing training and capacity-building programs for professional and semi-skilled workers to learn and broaden their skill sets with techniques, machinery and protocols at the site</li> <li>Documenting the establishment of the VIC right from the inception stage by way of reports, documentaries and any other such form that can be made publicly available to scholars, and enthusiasts in architecture, design or construction.</li> </ol>                                                                                         |                                                                 |                                                    |                          |                                         |
| 8.2.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Introduction of invasive species                                | Biota<br>Surface and/or groundwater<br>Communities | Low and immediate        | Low, negative, irreversible impact      |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All vehicles should be thoroughly cleaned before accessing the site.</li> <li>Manual control of invasive species shall be implemented at the site.</li> <li>Establish a monitoring and information system for invasive species to support planning and management.</li> <li>Landscaping and establishment of the arboretum shall use indigenous species</li> <li>The proponent shall enhance ongoing programs to combat invasive species within the CFR</li> </ol>                                                                                |                                                                 |                                                    |                          |                                         |
| 8.2.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Impact of particulate, fugitive and vehicular exhaust emissions | Atmosphere<br>Workers<br>Communities               | Low and immediate        | Low, negative, reversible impact        |



| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Impact                               | Receptors              | Magnitude and duration | Significance                            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                      | Biota                  |                        |                                         |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Scheduling construction activities for periods when wind speeds are low</li> <li>2. Employing dust suppression techniques like water sprinkling at the site</li> <li>3. Fencing the site to reduce wind-induced re-entrainment of dust particles</li> <li>4. Covering trucks hauling debris and excavation spoil to curtail dust emissions during transportation</li> <li>5. Selecting an appropriate disposal site such as to limit the distance travelled and disruption to the receptor communities</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                        |                        |                                         |
| 8.2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Occupational Health and Safety risks | Workers<br>Communities | Moderate and immediate | Moderate, negative, irreversible impact |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All excavation work and lifting shall be supervised by a competent person and operatives doing the work shall be given clear instructions;</li> <li>2. Sides of excavations shall be thoroughly inspected: <ol style="list-style-type: none"> <li>- daily, before each shift and after an interruption in work of more than one day;</li> <li>- after an unexpected fall to the ground;</li> <li>- after substantial damage to supports;</li> <li>- after heavy rain;</li> <li>- when boulder formations are encountered.</li> </ol> </li> <li>3. Sides of excavations where workers are exposed to danger from moving ground shall be made safe by sloping, shoring, portable shields or other effective means;</li> <li>4. A suitable housekeeping programme shall be established and continuously implemented at the site and it shall include provisions for: <ol style="list-style-type: none"> <li>- the proper storage of materials and equipment;</li> <li>- the removal of scrap, waste and debris at appropriate intervals</li> </ol> </li> <li>5. Loose materials which are not required for use shall not be placed or allowed to accumulate on the site to obstruct means of access to and egress from workspaces and passageways.</li> <li>6. Where necessary to prevent danger, guys, stays or supports shall be used or other effective precautions shall be taken to prevent the collapse of structures or parts of structures that are under construction</li> <li>7. As far as practicable, guardrails and toe boards in accordance with national laws and regulations shall be provided to protect workers from falling from elevated workspaces. Wherever the guard rails and toe-boards cannot be provided: <ol style="list-style-type: none"> <li>- adequate safety nets or safety sheets shall be erected and maintained, or</li> <li>- adequate safety harnesses shall be provided and used.</li> </ol> </li> <li>8. The site shall be hoarded off to prevent the entry of unauthorised persons. Visitors shall not be allowed access to the construction site unless accompanied by or authorised by a competent person and provided with the appropriate protective equipment.</li> <li>9. All appropriate measures shall be taken by the contractor and the proponent to: <ol style="list-style-type: none"> <li>- avoid the risk of fire;</li> </ol> </li> </ol> |                                      |                        |                        |                                         |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Receptors                                                                                                      | Magnitude and duration   | Significance                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>- quickly and efficiently control any outbreak of fire;</li> <li>- bring about a quick and safe evacuation of persons</li> </ul> <p>10. Smoking shall be prohibited and "NO SMOKING" notices shall be prominently displayed in all appropriate locations within the subject site. Additionally, smoking zones shall be gazetted for those who intend to smoke.</p> <p>11. Fire-extinguishing equipment shall be properly maintained and inspected at suitable intervals by a competent person. Access to fire-extinguishing equipment such as portable extinguishers and connections for hoses shall be kept clear at all times.</p> <p>12. Provision of appropriate PPE to all workers.</p> <p>13. All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</p> |                                                                                                                |                          |                                           |
| 8.2.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Solid waste generation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Surface and/or groundwater</b><br><b>Workers</b><br><b>Communities</b><br><b>Biota</b>                      | <b>Low and immediate</b> | <b>Low, negative, reversible impact</b>   |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements</li> <li>2. Recycle construction materials from the existing structures where possible</li> <li>3. Establish adequate gender-segregated sanitary facilities for all workers and visitors to the site</li> <li>4. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site</li> <li>5. Hire a licensed hazardous waste handler to remove and dispose of hazardous waste materials</li> <li>6. Train construction workers on proper waste management practices</li> <li>7. Cover trucks ferrying debris from the site to mitigate spillages during transportation</li> <li>8. Site stockpiles of debris away from stormwater paths</li> </ol> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |                          |                                           |
| 8.2.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Climate change impacts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Atmosphere</b><br><b>Surface and/or groundwater</b><br><b>Workers</b><br><b>Communities</b><br><b>Biota</b> | <b>Low and immediate</b> | <b>Low, negative, irreversible impact</b> |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>2. Open incineration of waste at the site shall be strictly prohibited</li> <li>3. All plastic waste generated at the site shall be collected in such a manner as to allow it to be recycled</li> <li>4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site</li> </ol>                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |                          |                                           |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Impact                            | Receptors                                          | Magnitude and duration | Significance                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------|------------------------|-----------------------------------------|
| 8.2.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Visual impacts                    | Communities                                        | Low and immediate      | Low, negative, reversible impact        |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Completely fence off the site during the site preparation phase</li> <li>2. Start landscaping and replanting ornamental trees as soon as it is reasonable to restore the visual appeal of the site</li> <li>3. Schedule excavation works for January to March when the visitor numbers are low</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                   |                                                    |                        |                                         |
| 8.2.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Impacts on water resources        | Surface and/or groundwater<br>Communities<br>Biota | Minor and immediate    | Low, negative, reversible impact        |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The contractor shall put in place waste collection bins around the site; these shall easily identifiable by shape, colour and size to allow for the segregation of waste into recyclables, hazardous and non-recyclable.</li> <li>2. All stock piles of materials or waste shall be situated away from paths of stormwater</li> <li>3. The drainage channels around the construction site shall be desilted regularly</li> <li>4. The contractor shall maintain emergency spill kits at the site in the event of a significant oil spill</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                   |                                                    |                        |                                         |
| 8.2.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Fire hazards                      | Atmosphere<br>Workers<br>Communities<br>Biota      | Low and immediate      | Low, negative, irreversible impact      |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A fire action plan shall be established at the site. It shall include means of reporting fires; evacuation procedures; procedures for workers who remain to shut down critical operations; and a means of accounting for all workers after evacuation.</li> <li>2. All workers on site shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid.</li> <li>3. Emergency contacts shall be conspicuously displayed within all sections of the site</li> <li>4. A legible site map indicating evacuation routes and assembly points shall be displayed within all sections of the site.</li> <li>5. A high-pressure water line shall be established at the site for use by emergency services in the event of major fires</li> <li>6. All workers shall at all times wear high-visibility clothing</li> <li>7. All combustible materials including waste shall be kept away from fuel, acetylene gas storage</li> <li>8. A smoking area away from fuel and other combustible material shall be established. "No smoking" shall be displayed in areas where smoking is prohibited</li> </ol> |                                   |                                                    |                        |                                         |
| 8.2.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Impacts of an increase in traffic | Atmosphere<br>Workers<br>Communities<br>Biota      | Low and immediate      | Moderate, negative, irreversible impact |
| <b>Mitigation:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                   |                                                    |                        |                                         |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Receptors                                   | Magnitude and duration        | Significance                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ol style="list-style-type: none"> <li>1. Inform and sensitize the community in advance of the anticipated impacts on traffic and roadways during the construction phase.</li> <li>2. Transport of construction materials shall be scheduled for off-peak traffic hours. This will reduce the risk of traffic flow disruptions on Biso – Masindi Road.</li> <li>3. Appropriate traffic warning signs shall be placed along Biso – Masindi Road to inform road users of trucks turning ahead and instruct them to reduce speed.</li> <li>4. Loading of transportation trucks shall be within the permissible limits (guidelines) for Uganda National Roads Authority (UNRA) axel loads for the targeted roads.</li> <li>5. Debris and excavation shall be properly covered during transportation from the site to prevent spillage during transportation</li> <li>6. The trucks shall be parked on the proposed site until they are offloaded.</li> <li>7. Heavy equipment shall be transported early morning (12 am – 5 am) with proper pilotage.</li> <li>8. The use of flagmen shall be employed to regulate traffic flow.</li> <li>9. Training and sensitization of personnel (drivers) in road safety and traffic regulations shall also be done by road contractors.</li> </ol> |                                             |                               |                                           |
| 8.2.12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Impact on the ambient Noise</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Workers<br/>Communities<br/>Fauna</b>    | <b>Moderate and immediate</b> | <b>Low, negative, reversible impact</b>   |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All construction and excavation shall be restricted to the day-time only</li> <li>2. The proponent shall ensure that the noise emitted is within the permissible noise levels per the National Environment (Noise Standards and Control) Regulations, 2003</li> <li>3. Equipment with the lowest noise rating shall be used where feasible</li> <li>4. NRMM such as generators shall be fitted with mufflers, enclosures and any other damping material to reduce their noise emission</li> <li>5. All machinery used on site shall be promptly serviced and maintained. Maintenance of old equipment can reduce noise levels by 50%</li> <li>6. Sound-absorbing barriers like plywood shall be erected around the site and noise equipment</li> <li>7. All Non-Road Mobile Machines (NRMM) and vehicles shall be shut down when not in use</li> <li>8. All workers shall be provided with the appropriate PPE such as earmuffs or plugs to protect them from noise levels above 85 dBA</li> </ol> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                             |                               |                                           |
| 8.2.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Impacts related to population influx</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Communities<br/>Biota</b>                | <b>Minor and immediate</b>    | <b>Low, negative, irreversible impact</b> |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Workers shall undergo training on social ethics and safe sex practices to curtail the spread of HIV/AIDS and other STDs</li> <li>2. A grievance redress mechanism shall be established to amicably resolve any grievances between the community and workers on site</li> <li>3. To the greatest extent possible, able and willing workers from the local area shall be hired to maximize the benefits accrued by the host community from project implementation</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                             |                               |                                           |
| 8.2.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Loss of vegetation and terrestrial habitat alteration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Surface and/or groundwater<br/>Biota</b> | <b>Low and immediate</b>      | <b>Low, negative, irreversible impact</b> |
| <b>Mitigation:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                             |                               |                                           |



| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Receptors            | Magnitude and duration | Significance                       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ol style="list-style-type: none"> <li>The proponent shall implement biodiversity offsets or other compensation mechanisms per section 115 of the National Environment Act, 2019; this shall fully compensate for the loss in biodiversity as a result of project implementation.</li> <li>Where applicable, mechanized vegetation removal shall be replaced with hand techniques, where the plant is removed with the root system intact, for replanting after construction;</li> <li>Vegetation translocation and relocation techniques shall be used as necessary. Vegetation cover, such as indigenous plant species topsoil or overburden suitable for sustaining growth after construction will be removed in separate operations and segregated for later use during landscaping;</li> <li>Mature tree species within the proposed project site shall be spared as far as is practical to minimize vegetation loss to crops that are easy to re-vegetate in other areas;</li> <li>Native trees will be replanted along the project boundaries giving priority to preferred species for bird nesting, feeding, community use and provision of canopy or shade.</li> </ol> |                      |                        |                                    |
| 8.2.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Poaching                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Communities<br>Fauna | Minor and immediate    | Low, negative, irreversible impact |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>Implement strict control over firearms and other weapons to prevent them from falling into the hands of poachers.</li> <li>Employ additional security personnel and rangers during the construction phase to monitor the area. The presence of trained rangers and law enforcement officers in these areas help to deter poachers and respond to threats promptly.</li> <li>Clearly mark the construction site boundaries with visible signage indicating that the area is protected and any unauthorized entry is prohibited. In addition to this, install temporary fencing around the site to restrict access and prevent wildlife disturbance.</li> <li>Collaborate with local community members to conduct regular patrols around the construction site, reporting any suspicious activities. Establish a system for construction workers and supervisors to report any unusual or suspicious activities to relevant authorities.</li> <li>Train and educate construction workers about the importance of wildlife conservation, the risks of poaching, and how to identify and report suspicious behaviour. Conduct regular security briefings for construction workers, emphasizing the zero-tolerance policy for engaging in illegal activities, including poaching</li> <li>Clearly define and restrict access to sensitive areas within the construction site, such as potential wildlife corridors, to prevent any potential interference with animal movements.</li> <li>Collaborate with local law enforcement agencies to ensure regular patrols and responses to any reported incidents. Work closely with Budongo CFR management to share information and coordinate anti-poaching efforts during the construction phase.</li> </ol> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                        |                                    |
| 8.2.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Animal abuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Fauna                | Minor and immediate    | Low, negative, irreversible impact |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>Appropriate signage shall be put up at the VICs instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the CFR (for example speed limits and no hooting)</li> <li>The construction workers shall undergo an induction to educate them on the importance of wildlife species and response actions when attacked by a problem animal</li> <li>A game ranger shall be retained at the site at all times to handle problem animals</li> <li>All incidences of attacks on animals or workers shall be reported to the proponent</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                        |                                    |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Impact                                                                                                   | Receptors                                          | Magnitude and duration | Significance                       |
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| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Fully stocked first aid kits equipped with anti-venom and anti-rabies vaccines shall be kept at the site |                                                    |                        |                                    |
| 8.2.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Illegal logging                                                                                          | Surface and/or groundwater<br>Communities<br>Biota | Minor and immediate    | Low, negative, irreversible impact |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The timber used in the construction of the VIC shall be sourced from licensed timber dealers indicating the source of the trees</li> <li>The proponent shall use the VIC as an avenue to create environmental awareness and education to communities about environmental protection and the dangers arising from illegal activities to improve the existing situation within the CFR.</li> <li>The proponent shall fast-track tree planting and conservation education in the project districts in close collaboration with other partners including sensitizing communities about accruing benefits.</li> <li>The proponent in collaboration with District leaders, NEMA, and Sub-county leaders needs to regulate charcoal burning and logging. Scouts/rangers need to be increased to monitor and stop illegal activities.</li> <li>The proponent shall establish habitat monitoring systems to support programmes aimed at rehabilitating the CFRs</li> <li>The government may consider the provision of solar products at subsidized rates to minimize the cutting of trees for charcoal and firewood</li> </ol> |                                                                                                          |                                                    |                        |                                    |

Table E.3: Summary of potential impacts and proposed mitigation or enhancement measures (operation phase)

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Impact                      | Receptors                                 | Magnitude and duration  | Significance                            |
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| 8.3.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Tourism boost               | Communities<br>Tourism sector             | High and long term      | Moderate, positive, irreversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The operation of the VIC shall be consolidated by other tourism promotion initiatives including aggressive marketing and diversification of the tourism products offered within the CFR</li> <li>The proponent shall consistently engage the relevant stakeholders to obtain feedback and suggestions on possible areas for improvement regarding the operation of the VIC. Stakeholders may include communities, tourists, private operators and other government agencies</li> </ol>                                                                                               |                             |                                           |                         |                                         |
| 8.3.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Enhanced visitor experience | Communities<br>Visitors<br>Tourism sector | Very high and long term | High, positive, irreversible impact     |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The staff at the VIC shall be extensively trained in hospitality, information dissemination, interpretation and quality assurance</li> <li>The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant</li> <li>The proponent shall consistently engage the relevant stakeholders to obtain feedback and suggestions on possible areas for improvement regarding the operation of the VIC. Stakeholders may include communities, tourists, private operators and other government agencies</li> </ol> |                             |                                           |                         |                                         |
| 8.3.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Socio-economic benefits     | Communities                               | High and long term      | High, positive, irreversible impact     |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Impact                                      | Receptors                                     | Magnitude and duration   | Significance                                   |
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| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The proponent shall provide technical and/or financial support to the local communities through the CFMs; this will enhance the quality of the services provided by the community to the tourism industry</li> <li>The proponent shall engage with the local communities (leaders, vulnerable groups and community-based organizations) to evaluate the impact of the tourism boost on the local communities; this engagement shall inform the formulation of practical and acceptable enhancement or mitigation measures</li> <li>Local business that are found to be reliable and willing shall engaged on a contractual basis to provide goods or services to the VIC; this will significantly enhance the returns made by the local businesses</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |                                               |                          |                                                |
| 8.3.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Security risks</b>                       | <b>Employees<br/>Visitors<br/>Communities</b> | <b>Low and long term</b> | <b>Low, negative, irreversible impact</b>      |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>A security checkpoint shall be established at the entrance to the VIC where vehicles will be searched and persons may be asked to identify themselves before accessing the VIC</li> <li>Signage instructing all personnel to safeguard their personal belongings at all times shall be displayed within all sections of the VIC</li> <li>The VIC will be kept under CCTV surveillance, 24/7; the CCTV system shall have remote access capabilities</li> <li>The proponent shall provide ample security at the VIC to tackle any threats to life and property</li> <li>The security personnel at the VIC shall be instructed to use desist from unlawful acts such as torture, excessive force, extortion, etc.</li> <li>The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals</li> <li>The proponent shall adhere to any guidance issued by security organs i.e. Uganda Police Force, Interpol, UPDF etc.</li> </ol>                                                                                                                                                                                                                                                                                                                                                        |                                             |                                               |                          |                                                |
| 8.3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Occupational Safety and Health risks</b> | <b>Employees<br/>Visitors<br/>Communities</b> | <b>Low and long term</b> | <b>Moderate, negative, irreversible impact</b> |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>Restriction of exposure by, for example, re-organizing tasks to build in rest periods or other breaks from work. This will allow workers to rest in an area where the environment is comfortable and, if necessary, to replace bodily fluids to combat dehydration or cold. If work rates cause excessive sweating, workers may need more frequent rest breaks and a facility for changing into dry clothing;</li> <li>Medical pre-selection of employees to ensure that they are fit to work in these environments;</li> <li>Lighting shall be sufficient to enable people to work and move about safely. If necessary, local lighting shall be provided at individual workstations and places of particular risk such as crossing points on traffic routes. Lighting and light fittings shall not create any hazards;</li> <li>Workrooms shall have enough free space to allow people to move about with ease;</li> <li>The workplace, and certain equipment, devices and systems shall be maintained in efficient working order (efficient for health, safety and welfare)</li> <li>There shall be sufficient traffic routes, of sufficient width and headroom, allowing people and vehicles to circulate safely and with ease</li> <li>Set appropriate speed limits, and make sure they, and any other traffic rules, are obeyed;</li> </ol> |                                             |                                               |                          |                                                |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Impact                      | Receptors                                                   | Magnitude and duration | Significance                       |
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| 8. Windows, transparent or translucent surfaces in walls, partitions, doors and gates shall, where necessary for reasons of health and safety, be made of safety material or be protected against breakage;<br>9. Cleaning and the removal of waste shall be carried out as necessary by an effective method. Waste shall be stored in suitable receptacles.<br>10. Doors and gates shall be suitably constructed and fitted with safety devices if necessary;<br>11. Suitable and sufficient sanitary conveniences and washing facilities shall be provided at readily accessible places; and<br>12. An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, shall be provided<br>13. The employees at the VIC shall be provided with the appropriate PPE considering the hazards they are occupationally exposed to<br>14. All sections of the VIC shall be fitted with legible hazard and safety signage indicating the nature of hazards present, safety protocols in place and the location of emergency exits and assembly points<br>15. A fully stocked first aid box shall be maintained at the site at all times<br>16. All employees shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site |                             |                                                             |                        |                                    |
| 8.3.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Fire risks                  | Atmosphere<br>Biota<br>Employees<br>Visitors<br>Communities | Low and long term      | Low, negative, irreversible impact |
| <b>Mitigation:</b><br>1. A fire action plan shall be established at the VIC per the general management plan. It shall include means of reporting fires; evacuation procedures; procedures for staff who remain to shut down critical operations or utilities; and a means of accounting for all occupants after evacuation.<br>2. All staff shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid.<br>3. Emergency contacts shall be conspicuously displayed within all sections of the VIC<br>4. Legible maps indicating evacuation routes and assembly points shall be displayed within all sections of the VIC.<br>5. Firefighting systems proportionate to the risk of a fire outbreak shall be installed at the VIC, these may include smoke detectors, alarms, extinguishers, hoses and fire hydrants<br>6. All combustible materials including waste shall be kept away from fuel, sources of heat and ignition<br>7. A smoking area away from fuel and other combustible material shall be established. "NO SMOKING" signs shall be displayed in areas where smoking is prohibited                                                                                                                        |                             |                                                             |                        |                                    |
| 8.3.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Community Health and Safety | Employees<br>Communities                                    | Low and long term      | Low, negative, reversible impact   |
| <b>Mitigation:</b><br>1. The proponent shall put in place measures to prevent the spread of highly-infectious diseases (such as Ebola and COVID-19) as recommended by the Health Authorities<br>2. The proponent shall create awareness of HIV/AIDS and other STDs among the employees; this can be achieved through having Reproductive Health Talks and signage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |                                                             |                        |                                    |



| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Impact                                                                                                                                                    | Receptors                                                                                   | Magnitude and duration   | Significance                              |
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| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The proponent shall institute good sanitation practices and encourage employees to strictly observe good personal hygiene                                 |                                                                                             |                          |                                           |
| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The proponent shall encourage employees to get rabies pre-exposure vaccination                                                                            |                                                                                             |                          |                                           |
| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Visitors and workers shall avoid physical contact with the animal species as much as possible; unless the physical contact is sanctioned by the proponent |                                                                                             |                          |                                           |
| <b>8.3.8</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Solid waste generation</b>                                                                                                                             | <b>Surface and/or groundwater</b><br><b>Employees</b><br><b>Communities</b><br><b>Biota</b> | <b>Low and long term</b> | <b>Low, negative, irreversible impact</b> |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements</li> <li>Well-labelled bins shall be placed at all sections of the building, these will aid in the segregation of waste</li> <li>Legible signage showing where each type of waste shall be disposed of shall be put up in all sections of the VIC</li> <li>The waste receptacles shall have well-secured lids to prevent animals from accessing the discarded materials</li> <li>Medical waste from the clinic and the administration of first aid shall be segregated from the clinic and disposed of by a licensed medical waste handler</li> </ol> |                                                                                                                                                           |                                                                                             |                          |                                           |
| <b>8.3.9</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Climate change impacts</b>                                                                                                                             | <b>Atmosphere</b><br><b>Communities</b><br><b>Biota</b>                                     | <b>Low and long term</b> | <b>Low, negative, reversible impact</b>   |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>Open incineration of waste at the VIC shall be strictly prohibited</li> <li>All plastic waste generated at the VIC shall be collected in such a manner as to allow it to be recycled</li> <li>The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site</li> <li>The proponent shall maintain an inventory of their estimated GHG emissions</li> </ol>                                                                                                                           |                                                                                                                                                           |                                                                                             |                          |                                           |
| <b>8.3.10</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Impacts on air quality</b>                                                                                                                             | <b>Atmosphere</b><br><b>Employees</b><br><b>Communities</b><br><b>Biota</b>                 | <b>Low and long term</b> | <b>Low, negative, reversible impact</b>   |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>Open incineration of waste at the VIC shall be strictly prohibited</li> <li>The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated</li> </ol>                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                           |                                                                                             |                          |                                           |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Impact                                                                                                                                                    | Receptors                                                               | Magnitude and duration       | Significance                              |
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| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | All vehicles and machines shall be shut down when not in use                                                                                              |                                                                         |                              |                                           |
| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Solar, LPG gas or eco-friendly briquettes shall be used in the kitchen                                                                                    |                                                                         |                              |                                           |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Cleaning operations that minimize the emission or resuspension of particulate matter shall be prioritized for example, the use of vacuuming over sweeping |                                                                         |                              |                                           |
| <b>8.3.11</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Loss of cultural identity</b>                                                                                                                          | <b>Communities</b>                                                      | <b>Low and long term</b>     | <b>Low, negative, irreversible impact</b> |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall engage the relevant stakeholders to identify how local cultural heritage may be incorporated into or affected by the VIC</li> <li>The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant</li> <li>The proponent shall implement a grievance redress mechanism to amicably resolve any adverse cultural impacts or any forms of misrepresentation</li> </ol>                                                                                                                                                                                                                                                                     |                                                                                                                                                           |                                                                         |                              |                                           |
| <b>8.3.12</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Risk of oil and fuel spills</b>                                                                                                                        | <b>Surface and/or groundwater<br/>Workers<br/>Communities<br/>Biota</b> | <b>Low and long term</b>     | <b>Low, negative, reversible impact</b>   |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All wastewater and surface runoff shall be channelled through an oil interceptor before it is discharged into the receiving environment; this will be emptied by a licensed waste handler</li> <li>The proponent shall maintain spill kits at the VIC in the event of significant oil spills</li> <li>Contaminated soil from a significant oil spill shall be stored in a secure drum and disposed of by a licensed waste handler</li> </ol>                                                                                                                                                                                                                                                                                            |                                                                                                                                                           |                                                                         |                              |                                           |
| <b>8.3.13</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Traffic disruption</b>                                                                                                                                 | <b>Atmosphere<br/>Employees<br/>Communities<br/>Biota</b>               | <b>Low and long term</b>     | <b>Low, negative, reversible impact</b>   |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall establish appropriate signage indicating the routes that the vehicles shall use, reserved parking spots (like for emergency vehicles and the disabled) and the speed limit in force at the VIC's premises</li> <li>Appropriate signage shall be put up at the VICs instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the CFR (for example speed limits and no hooting)</li> <li>The proponent shall develop a traffic management plan to address the increase in traffic during the peak season</li> <li>The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals</li> </ol> |                                                                                                                                                           |                                                                         |                              |                                           |
| <b>8.3.14</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Dependence on tourism-related activities</b>                                                                                                           | <b>Local community<br/>Cultural institutions</b>                        | <b>Minor and Medium-term</b> | <b>Low, Negative, Irreversible impact</b> |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for project-affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                           |                                                                         |                              |                                           |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Impact                                              | Receptors                                | Magnitude and duration | Significance                       |
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| <p>2. To avoid over-reliance on tourism-related activities, it is important to develop a diversified economy and promote alternative livelihoods that are compatible with the local communities' cultural and environmental values. This could include initiatives such as sustainable agriculture, small business development, and cultural tourism that promotes the local's traditional skills and knowledge.</p> <p>3. Partnership and Collaboration: Partnering with local organizations that work with homeless individuals can create a collaborative approach to supporting those in need. This can be done by establishing relationships with these organizations and working together to create effective solutions.</p> <p>4. Referral Networks: Visitor information centres can establish referral networks with local organizations to ensure that individuals who are in need of assistance are connected with the appropriate resources</p> |                                                     |                                          |                        |                                    |
| 8.3.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Decay of marriage and sexual norms                  | Local community                          | Minor and Medium-term  | Low, Negative, Irreversible impact |
| <p><b>Mitigation:</b></p> <p>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for project-affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</p> <p>2. Efforts could be made to provide educational and awareness-raising programs for visitors and staff about the cultural practices and beliefs of the local community, including those related to marriage and sexuality</p>                                                                                                                                                                                                                                                                                                                                                                                  |                                                     |                                          |                        |                                    |
| 8.3.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Impact on child rearing norms and family structures | Local community                          | Low and Medium-term    | Low, Negative, Irreversible impact |
| <p><b>Mitigation:</b></p> <p>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</p> <p>2. Efforts could be made to ensure that economic opportunities generated by tourism are distributed in a way that is compatible with the Host community's traditional values and practices.</p>                                                                                                                                                                                                                                                                                                                                                                                              |                                                     |                                          |                        |                                    |
| 8.3.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Shift in balance of power                           | Local community<br>Cultural institutions | Low and Short-term     | Low, Negative, Irreversible impact |
| <p><b>Mitigation:</b></p> <p>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</p> <p>2. Efforts could be made to promote the importance of traditional leadership and governance systems. This could involve working with the Host community to integrate traditional systems of governance into formal decision-making processes, or supporting the development of programs that promote the importance of traditional knowledge</p>                                                                                                                                                                                                                                             |                                                     |                                          |                        |                                    |
| 8.3.18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Impact on traditional systems of healing            | Local community                          | Minor and Long-term    | Low, Negative, Irreversible impact |
| <p><b>Mitigation:</b></p> <p>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</p> <p>2. Involve the Host community in establishing herbal demonstration sites outside the Forest Reserve</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                     |                                          |                        |                                    |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Impact                                                                                                                                                                                                                                                | Receptors                                | Magnitude and duration  | Significance                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------|-------------------------------------|
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Efforts could also be made to promote sustainable use of medicinal plants and to support the conservation of traditional healing practices through protecting natural resources and encouraging collaboration between traditional and modern healers. |                                          |                         |                                     |
| 8.3.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Class divide and social conflict                                                                                                                                                                                                                      | Local community                          | Low and Long-term       | Low, Negative, Irreversible impact  |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. The Host community shall be fairly compensated for their participation in tourism initiatives, including revenue-sharing schemes and fair wages for employees.</li> <li>3. Efforts could also be made to ensure that economic opportunities are distributed fairly and that all members of the host communities have access to these opportunities.</li> <li>4. Efforts could be made to promote cultural awareness and understanding between different social groups within the community and the other affected communities</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                       |                                          |                         |                                     |
| 8.3.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Impact of commercialization of culture                                                                                                                                                                                                                | Local community<br>Cultural institutions | Low and Medium-term     | Low, Negative, Irreversible impact  |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Design and implement activities that take into account the need for integrating conservation friendly cultural values of the Host community people into PA management</li> <li>3. Planning and the management of the protected areas where possible</li> <li>4. Companies shall respect the intellectual property rights of the creators and custodians of cultural products.</li> <li>5. Efforts could also be made to ensure that the commercialization of Host community culture is done in a responsible and sustainable manner like Cultural sensitivity training</li> <li>6. It is important to ensure that their cultural heritage is respected and protected. This could involve working with the Host community to identify and protect important cultural practices and traditions</li> <li>7. Efforts could be made to empower the Host community to control the representation and sharing of their cultural heritage.</li> </ol> |                                                                                                                                                                                                                                                       |                                          |                         |                                     |
| 8.3.21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cultural preservation                                                                                                                                                                                                                                 | Local community<br>Cultural institutions | Very High and Long-term | High, Positive, Irreversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Mobilize and support the Host community to engage in tourism activities</li> <li>3. Documentation: Documenting cultural heritage through photography, videography, and written records can help ensure that it is preserved for future generations. This can also include the creation of archives or digital databases.</li> <li>4. Sustainable tourism practices that respect cultural heritage can help support its preservation. This can include visitor education programs, responsible tourism practices, and the development of tourism products that promote cultural heritage.</li> </ol>                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                       |                                          |                         |                                     |



| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Impact                            | Receptors       | Magnitude and duration  | Significance                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|-------------------------|-------------------------------------|
| 8.3.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Community development             | Local community | Very High and Long-term | High, Positive, Irreversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons.. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Create and provide gender balanced employment opportunities such as tour guides, porters, boundary management</li> <li>3. Prioritize local community members for employment opportunities in activities within the protected areas, such as restoration planting, removal of invasive species, and infrastructure construction;</li> <li>4. For ecotourism activities, prioritize local community member's employment as tour</li> <li>5. guides considering their unique local and cultural knowledge</li> </ol>                                                                                                                                                                                                            |                                   |                 |                         |                                     |
| 8.3.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Enhancing education and awareness | Local community | Very High and Long-term | High, Positive, Irreversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Technology can be a powerful tool for enhancing education and awareness. VICs can use technology to provide interactive displays, virtual tours, and other multimedia experiences that help visitors learn about local culture and history in an engaging way.</li> <li>3. VICs can enhance their educational offerings by collaborating with local experts and organizations, such as historians, archaeologists, and cultural organizations. This can help ensure that VICs are providing accurate and comprehensive information to visitors</li> <li>4. VICs shall provide accurate and up-to-date information, as well as high-quality educational materials such as brochures, maps, and multimedia displays.</li> </ol> |                                   |                 |                         |                                     |

Table E.4: Summary of potential impacts and proposed mitigation or enhancement measures (decommissioning phase)

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Impact                               | Receptors              | Magnitude and duration | Significance                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------|------------------------|-----------------------------------------|
| 8.4.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Occupational Health and Safety risks | Workers<br>Communities | Moderate and immediate | Moderate, negative, irreversible impact |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</li> <li>2. The decommissioning crews shall be inducted and trained on the safety measures and guidelines and observed while at the site</li> <li>3. All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> <li>- avoid the risk of fire;</li> <li>- control quickly and efficiently any outbreak of fire;</li> <li>- bring about a quick and safe evacuation of persons</li> </ul> </li> <li>4. Smoking shall be prohibited and "No Smoking" notices be prominently displayed in all appropriate locations within the subject site</li> </ol> |                                      |                        |                        |                                         |

| Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Impact                                                                                                                                                                                                                                                 | Receptors                                          | Magnitude and duration | Significance                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------|---------------------------------------|
| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fire-extinguishing equipment shall be properly maintained and inspected at suitable intervals by a competent person. Access to fire-extinguishing equipment such as portable extinguishers and connections for hoses shall be kept clear at all times. |                                                    |                        |                                       |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Provision of appropriate PPE to all workers.                                                                                                                                                                                                           |                                                    |                        |                                       |
| 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | As far as practicable, guard rails and toe boards in accordance with national laws and regulations shall be provided to protect workers from falling from elevated workplaces. Wherever the guard rails and toe-boards cannot be provided:             |                                                    |                        |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>- adequate safety nets or safety sheets shall be erected and maintained; or</li> <li>- adequate safety harnesses shall be provided and used</li> </ul>                                                          |                                                    |                        |                                       |
| 8.4.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Waste generation                                                                                                                                                                                                                                       | Surface and/or groundwater<br>Communities<br>Biota | Low and immediate      | Low, negative, reversible impact      |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements at the time of decommissioning</li> <li>2. Establish adequate gender-segregated sanitary facilities for all workers at the decommissioning site</li> <li>3. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site</li> <li>4. Hire a licensed hazardous waste handler to remove and dispose of any hazardous substances</li> <li>5. Train the decommissioning workers on proper waste management practices</li> <li>6. Cover trucks ferrying debris from the site to curtail fugitive emissions during transportation</li> <li>7. Site stockpiles of debris away from stormwater paths</li> </ol> |                                                                                                                                                                                                                                                        |                                                    |                        |                                       |
| 8.4.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Visual impacts                                                                                                                                                                                                                                         | Visitors<br>Workers<br>Communities<br>Biota        | Low and immediate      | Low, negative, reversible impact      |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Completely fence off the site during the decommissioning phase</li> <li>2. Start restoration activities as soon as it is reasonable to restore the visual appeal of the site</li> <li>3. Schedule decommissioning for periods when the visitor numbers are low</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                        |                                                    |                        |                                       |
| 8.4.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Restoration of the disturbed environment                                                                                                                                                                                                               | Biota                                              | High and immediate     | Moderate, positive, reversible impact |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. The restoration shall fully compensate for the loss in biodiversity as a result of project implementation as per the National Environment Act, 2019 or other relevant legislation at the time of decommissioning</li> <li>2. The restoration shall reinstate the site to its pristine state, to the greatest extent possible</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                        |                                                    |                        |                                       |

#### **E.10 Environment and Social Management Plan**

To ensure effective management of all impacts likely to be generated during the construction, operation and decommissioning phases of the project, an Environment and Social Management Plan (ESMP) is provided in Chapter 9 of this report. It includes potential impacts identified, mitigation/enhancement measures proposed, timing, desired outcomes, indicators, persons responsible and any capacity building requirement. Continued monitoring should be implemented as recommended in the Plan to quickly identify budding impacts and stem them from progressing into severe adverse socio-economic or environmental effects.

#### **E.11 Conclusion**

With the implementation of the proposed mitigation actions and the environmental and social management plan, the adverse environmental impacts of the project can be minimized to acceptable levels. On the strength of the aforesaid, it is hereby recommended that the project be granted the required approval and an EIA certificate as appropriate.

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## LIST OF ACRONYMS

|         |                                                                                |
|---------|--------------------------------------------------------------------------------|
| ACGIH:  | American Conference of Governmental Industrial Hygienists                      |
| BTO:    | British Trust for Ornithology                                                  |
| CBO:    | Community Based Organisations                                                  |
| CFM:    | Collaborative Forest Management                                                |
| CFR(s): | Central Forest Reserve(s)                                                      |
| DLGs:   | District Local Governments                                                     |
| EHSs:   | General Environmental, Health and Safety Guidelines                            |
| ESF:    | World Bank Environmental and Social Framework                                  |
| ESIA:   | Environmental and Social Impact Assessment                                     |
| ESMP:   | Environmental and Social Management Plan                                       |
| ESSs:   | World Bank Environmental and Social Standards                                  |
| F&OR:   | Facility and Operational Requirements                                          |
| FB:     | Forest Department                                                              |
| FMP:    | Forest Management Plan                                                         |
| FR(s)   | Forest Reserve (s)                                                             |
| GD:     | Game Department                                                                |
| GER:    | Gross Enrolment Ratio                                                          |
| GHG:    | Greenhouse Gas                                                                 |
| GIIP:   | Good International Industry Practice                                           |
| IFPA:   | Investing in Forests and Protected Areas for Climate Smart Development Project |
| IUCN:   | International Union for Conservation of Nature                                 |
| L&FS:   | Life and fire safety                                                           |
| LPG:    | Liquefied petroleum gas                                                        |
| MDAs:   | Government Ministries, Departments and Agencies                                |
| MPA:    | Management Plan Area                                                           |
| MSDs:   | Musculoskeletal Disorders                                                      |
| MTWA:   | Ministry of Tourism, Wildlife and Antiquities                                  |
| MWE:    | Ministry of Water and Environment                                              |
| NDP:    | National Development Plan                                                      |
| NEA:    | National Environment Act                                                       |
| NEMA:   | National Environment Management Authority                                      |
| NFA:    | National Forestry Authority                                                    |
| NGOs:   | Non-governmental organizations                                                 |
| OSH:    | Occupational Safety and Health                                                 |
| PAs:    | Protected Areas                                                                |
| PPE:    | Personal Protective Equipment                                                  |
| SDGs:   | Sustainable Development Goals                                                  |
| STDs:   | Sexually Transmitted Diseases                                                  |
| ToRs:   | Terms of Reference                                                             |
| UNP:    | Uganda National Parks                                                          |
| UTB:    | Uganda Tourism Board                                                           |
| UWA:    | Uganda Wildlife Authority                                                      |
| VIC:    | Visitor Information Centres                                                    |
| VOCs:   | Volatile Organic Compounds                                                     |
| WHO:    | World Health Organization                                                      |
| WRs:    | Wildlife Reserves                                                              |

## DEFINITIONS OF KEY TERMS

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Best practices:</b>                  | Field-proven strategies, techniques, and methods that are the most effective ways to manage tourism in protected areas. Best practices may change over time as new knowledge results in improvements. Best practices are manifestations of technical know-how, as well as the attitudes, efforts and commitments of managers, tourism-sector entities, communities and tourists themselves that are successfully using tourism as a means to achieve protected area conservation goals.                          |
| <b>Branding:</b>                        | The use of an image, theme, design, or other identifying element (or a combination thereof) to symbolise a protected area for the purpose of promoting tourism.                                                                                                                                                                                                                                                                                                                                                  |
| <b>Concession;<br/>concessionaires:</b> | A contractual arrangement granted by the protected area management authority that gives an entity (usually a for-profit company) the exclusive right to offer specified services in a protected area. The entity is referred to as a concessionaire (also spelled concessioner).                                                                                                                                                                                                                                 |
| <b>Cultural heritage:</b>               | An expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. It is often expressed as either 'intangible' (e.g., customs, language) or 'tangible' (e.g., physical artefacts) (International Council on Monuments and Sites). Heritage refers specifically to the condition of being inherited from past generations, maintained in the present, and bestowed to future generations. |
| <b>Ecotourism:</b>                      | Responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.                                                                                                                                                                                                                                                                                                                                                      |
| <b>Local (or host)<br/>community:</b>   | A social group of any size whose members reside in or near a protected area. The group shares a government and may have a common cultural and historic heritage.                                                                                                                                                                                                                                                                                                                                                 |
| <b>Sustainable<br/>tourism:</b>         | Tourism to a protected area that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and local (host) communities.                                                                                                                                                                                                                                                                                          |
| <b>Tourism:</b>                         | The activities of persons travelling to and staying in places outside their usual environment (here, the protected area) for not more than one consecutive year.                                                                                                                                                                                                                                                                                                                                                 |
| <b>Tourist:</b>                         | Any visitor whose trip to a protected area includes an overnight stay.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>User fees:</b>                       | Charges to visitors for taking part in an activity (such as going on a guided walk) or engaging in a particular use of the protected area's facilities or resources (such as staying in a campground).                                                                                                                                                                                                                                                                                                           |
| <b>Visitor:</b>                         | For protected areas (PAs), a visitor is a person who visits the lands and waters of the PA for purposes mandated for the area. A visitor is not paid to be in the PA and does not live permanently in the PA. The purposes mandated for the area typically are recreational, educational or cultural.                                                                                                                                                                                                            |



|                                   |                                                                                                                                                                                                                                           |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Visitor use:</b>               | Any use made of the protected area by a visitor during his/her stay.                                                                                                                                                                      |
| <b>Visitor hours:</b>             | The total length of time, in hours, that visitors stay in the protected area.                                                                                                                                                             |
| <b>Visitor management:</b>        | The process of tracking visitor usage in a protected area                                                                                                                                                                                 |
| <b>Visitor carrying capacity:</b> | The maximum number of people that may visit a destination at the same time without causing destruction of the physical, economic, and sociocultural environment and/or an unacceptable decrease in the quality of visitors' satisfaction. |

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We would also like to thank all the local council officials of Akiimi B, Udukuru, Kalengeja and Busingiro for their unreserved cooperation.

The contribution of the key consulting team towards the success of this project is also acknowledged.

The ESIA Team however, assumes full responsibility for any omissions and errors contained in this Environmental and Social Impact Statement (ESIS). The findings and recommendations found herein are based on our own understanding, observations, analyses and interpretation of data obtained. We declare that no national or international law or right was violated during preparation of this report.

**DECLARATION**

We, the undersigned, hereby declare that this ESIA Study Report represents the facts pertaining to the proposed development of a Visitor Information Centre in Budongo Central Forest Reserve

ON BEHALF OF THE NATIONAL FORESTRY AUTHORITY

Signed:

Dated: 1<sup>st</sup> September 2023

## KEY CONSULTING TEAM

Team members have been selected based on their experience in similar types of assignment. Key to their selection are the following attributes:

- The project team leader is a local consultant registered with the National Environment Management Authority (NEMA), with extensive project experience in Uganda, Kenya, Rwanda and Tanzania.
- The project team has extensive experience in conducting ESIA's and ESMPs for similar projects that meet in-country requirements as well as international policies, standards and guidelines;
- The social experts have extensive experience in social research, baseline surveys and Social Impact Assessments (SIAs);
- The Environmental and Energy Engineers on the project team are highly experienced in infrastructural and construction-related projects. Together they provide input into the engineering design aspects of the project to identify risks and opportunities and offer technical guidance on impact assessment criteria and mitigation.

| Name                                                                                                                     | Specialization/position                                                                                       | Assigned task                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Harriet MUJUNI</b><br>Certified Environmental Practitioner                                                            | Environmental and Social Safeguards Specialist<br>Legal Expert<br>(ESIA Team Lead)                            | <ul style="list-style-type: none"> <li>- Collation, analysis and review of policies, legal and administrative frame works</li> <li>- Baseline desktop studies</li> <li>- Review of specialist reports</li> <li>- Impact analysis and evaluation</li> <li>- Development of monitoring and management plans</li> <li>- Heritage and Chance Finds</li> <li>- Social Assessment</li> <li>- Drafting of Scoping and EIA reports</li> </ul>                            |
| <b>Irene TUHAISE</b><br>Certified Environmental Practitioner                                                             | Health/Safety Expert                                                                                          | <ul style="list-style-type: none"> <li>- Hazard assessment</li> <li>- Risk assessment</li> <li>- Health and safety risk assessment</li> <li>- Health and safety impact identification, assessment and provision of mitigation measures</li> <li>- Infrastructure architecture and engineering</li> </ul>                                                                                                                                                         |
| <b>Julius NSEREKO</b><br>Certified Environmental Practitioner                                                            | Environmental engineer<br>Noise Modelling; Water, Wastewater and Sanitation Expert                            | <ul style="list-style-type: none"> <li>- Infrastructure architecture and engineering</li> <li>- Baseline ambient noise study</li> <li>- Noise impact evaluation</li> <li>- Noise dispersion modelling and develop a Noise Monitoring Programme</li> <li>- Water, Wastewater, Sanitation</li> <li>- Analysis of Project alternatives</li> <li>- Transportation Impacts and Traffic Management</li> <li>- Impact Analysis</li> <li>- EIA report writing</li> </ul> |
| <b>Samuel MUTEBI</b><br>Certified Environmental Practitioner<br><br><b>Richard SSEMANDA</b><br><b>Michael Opige ODUL</b> | Ecologists / Land use / Flora / Wildlife                                                                      | <ul style="list-style-type: none"> <li>- Classification of existing vegetation</li> <li>- Flora inventory</li> <li>- Taxonomy and classification of existing fauna life</li> <li>- Fauna Inventory</li> <li>- Report on ecological findings</li> </ul>                                                                                                                                                                                                           |
| <b>Ronald KYOMUHENDO</b>                                                                                                 | Emissions & Air Dispersion Modelling Expert<br>GIS Mapping / Remote Sensing<br>Services Engineering (General) | <ul style="list-style-type: none"> <li>- Baseline Ambient Air Monitoring</li> <li>- Air quality evaluation</li> <li>- Emission &amp; Air Dispersion Modelling</li> <li>- Soil / Land use / Land Cover</li> <li>- Design Assessment</li> <li>- Map Production</li> </ul>                                                                                                                                                                                          |

| Name                       | Specialization/position                                                                  | Assigned task                                                                                                                              |
|----------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                            |                                                                                          | - EIA report writing                                                                                                                       |
| <b>Peacekinz K. KWEEZI</b> | Energy Engineer<br>Water, Waste & Sanitation<br>Health & Safety<br>Geological Assessment | - Climate change impacts<br>- Energy design considerations<br>- Waste water<br>- Health & Safety<br>- Soil/ Land use / Landcover           |
| <b>Virginia KABATANA</b>   | Civil Engineer                                                                           | - Structural analysis<br>- Review of architectural drawings<br>- Traffic Impact Assessment                                                 |
| <b>Isaiah CULA</b>         | Social Lead<br>Study Coordination                                                        | - Specialist Reports Lead<br>- Social Impact Assessment<br>- Stakeholder Consultations Lead                                                |
| <b>Hilda NAMITALA</b>      | Social Lead                                                                              | - Baseline data collection<br>- Social Impact Assessment<br>- Stakeholder Consultations<br>- Co-ordination of Public Participatory Process |
| <b>David KALANZI</b>       | Archeologist (Physical and Cultural)                                                     | - Archaeological and Cultural Heritage                                                                                                     |



## **1.0 INTRODUCTION**

### **1.1 Project Background**

Protected Areas (PAs) within the Northern Albertine Rift landscape are of outstanding national importance as natural ecosystems and sanctuaries for rare and endangered wildlife species, repositories of renewable natural resources, recreational areas and cultural heritage. They are also known for their scenic beauty, outstanding biodiversity richness and abundance of natural resources.

Budongo Central Forest Reserve (BCFR), in North Western Uganda, was gazetted as a Central Forest Reserve in 1932. It is a mixture of tropical high forest with a large population of mahoganies, savanna grasslands and woodland. BCFR covers circa 82,530 hectares (Ha) making it Uganda's biggest forest reserve. It is of exceptional biodiversity importance, ranking 3rd in overall importance in the country (Nature Conservation Master Plan, 1997). To date, more than 465 tree species, 289 butterfly species and 130 species of large moth have been recorded. It is home to over 360 species of birds, including turacos, hornbills, and kingfishers. The reserve is also a haven for primates, with 9 different species found within the forest, including the largest population of the endangered wild chimpanzee (*Pan troglodytes schweinfurthii*), black-and-white colobus monkey, red-tailed monkey, and blue monkey.

BCFR provides a vital function as a water catchment for rivers Bubwa, Sonso and Waisoke which flow gently over the escarpment to Lake Albert. Kaniyo Pabidi block to the North and Siba to the South are constituted by small riparian forest strips and tributaries of the three rivers which drain the forest and surrounding land.

In addition to its impressive biodiversity, BCFR is also an important ecosystem service provider for the adjacent communities. The reserve is a source of timber, fuelwood, non-timber forest products (NTFP) and also plays a crucial role in regulating local water cycles, helping to prevent soil erosion and supporting carbon sequestration. People neighbouring the forest reserve can obtain free of charge any dry wood in reasonable quantities for domestic use in accordance with section 33 (1) of the NTFP. Domestic animals are also allowed to visit water and salt licks in the reserve on specific arrangement with NFA but grazing requires a license (Forest Management Plan, BCFR (2011 – 2021)).

Visitors to the forest partake in a range of activities, including guided nature walks, bird watching, and chimpanzee trekking. The reserve also offers visitors the chance to experience the unique culture of the local communities, who have lived in and around the forest for generations. It offers visitors a unique opportunity to explore the biodiversity and ecological importance of the Congo Basin Forest ecosystem. By promoting responsible tourism and investing in its conservation, Budongo can continue to provide ecosystem services, support local livelihoods, and contribute to the economic development of Uganda.

Conserving these attributes is a high priority for the people and Government of Uganda. The National Forestry Authority (NFA) is mandated to manage this forest reserve in accordance with section 54 (1) of the National Forestry and Tree Planting Act (NFTP, 2003).

The ecosystem however, is threatened by growing pressure associated with the surrounding human settlements (forest-adjacent households), land encroachment and unsustainable utilisation of forest resources. The reserve traverses 3 districts of Masindi, Buliisa and Hoima and hence management is experiencing several problems. Illegal harvesting of timber and NTFPs particularly the former is widespread especially in compartments neighbouring communities. People look for all timber species including the most highly valuable mahogany (*Entandrophragma* and *Khaya spp.*) which has a ready market and high prices. Cases of encroachment are rampant in the CFR and this requires routine monitoring for eviction.

Communities cut down the forest in search of land for agricultural production especially sugarcane growing. Grazing has also become a problem as herdsman move around for pasture and water. In addition to fostering a negative attitude to forest conservation among local communities, these conflicts also result in significant economic losses which, together with poor community infrastructure, impede local development.

To ensure the future conservation of the PA and to address the challenge of protecting the ecosystem functions as a national benefit whilst enabling and promoting economic development especially for the people living on its periphery, Government of Uganda (GoU), with support from the World Bank (WB) is implementing the “**Investing in Forests and Protected Areas for Climate Smart Development Project** (IFPA-CD). Project implementation is led by the Ministry of Water and Environment (MWE), jointly with the Ministry of Tourism, Wildlife and Antiquities (MTWA), Uganda Wildlife Authority (UWA), and National Forestry Authority (NFA). Overall, the project is expected to improve sustainable management of forests and PAs, reduce deforestation and degradation and increase benefits from forests in target landscapes. It will also promote and improve the following:

- i) forest management and restoration;
- ii) management and conservation of protected forest areas and adjacent landscapes;
- iii) sustainable management of community forests and other wooded landscapes; and
- iv) enhance livelihoods and economic opportunities for communities and businesses.

The Project is also closely aligned with the Uganda Country Partnership Framework (FY16-21 of the WB – CPF 11) and Uganda Vision 2040. The broader project is being implemented in selected sites in the Albertine Rift and the refugees’ hosting areas of West Nile region and Lamwo district with focus on targeted Protected Areas (PAs) including: 7 National Parks (NP), 4 Wildlife Reserves (WR), 28 Central Forest Reserves (CFR) and 18 refugee host districts. It comprises of four major components as follows:

- a) Component 1: focusses on improving management of government-managed forests and wildlife protected areas to ensure they can continue to generate revenue and provide important environmental services.
- b) Component 2: deals with increasing revenue and jobs from these forests and wildlife PAs through targeted investments in tourism and productive forests. Specifically, it is for increasing the economic contribution of forests through boosting revenue generation and job creation and strengthen incentives for improved forest management. This component targets investment in tourism infrastructure (e.g the visitor information centers) to achieve continued development of nature-based tourism, and in addition to increase forest industry-based jobs and incomes.
- c) Component 3: is for the establishment of greater tree cover in refugee-hosting landscapes outside protected areas, supporting sustainable forest management and landscape resilience on private and customary land.
- d) Component 4: is overall project management, forest monitoring and support activities to ensure cost-efficient, timely and quality delivery of project activities and results.

NFA is implementing components 1, 2, 3 with sub component 2.1 specifically for development of tourist reception, information and interpretive facilities in 3 identified CFRs. Under the project it is recognized that more value could be generated from PAs through tourism and that there is a need for improved tourism infrastructure and facilities. This will further increase tourism revenue and enable private sector investments that can be used to protect the forests valuable ecosystems. It will also create employment opportunities for surrounding communities and overall, an improved relationship between on-ground forest management

and forest adjacent population. The VICs so designed under the project will be used to improve the visitor experience in the PAs and to encourage visitors to stay longer at each site. BCFR has been selected as one of the PAs for development of a VIC.

### 1.2.1 The Project Team

The focal personnel responsible for VIC design, site selection, planning and implementation for NFA-selected sites are given in table 1.1 below.

Table 1.1: Project Focal Persons

| Role                                | Name                                   | Contact Details                                                                                                                      |
|-------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Proponent Team: NFA</b>          |                                        |                                                                                                                                      |
| Director Plantations Development    | Stuart Maniraguha                      | Mobile: 0782786048<br>Email: <a href="mailto:stuartmani@gmail.com">stuartmani@gmail.com</a>                                          |
| Director Natural Forests            | Tom Rukundo                            | Email: <a href="mailto:tom.rukundo@nfa.go.ug">tom.rukundo@nfa.go.ug</a>                                                              |
| Environment Management Officer      | Shallon Challenge                      | Email: <a href="mailto:shallon.challenge@nfa.go.ug">shallon.challenge@nfa.go.ug</a><br>Mobile: +256 774265636                        |
| Social Safeguards Officer           | Christine Mugenyi                      | Email: <a href="mailto:christine.mugenyi@nfa.go.ug">christine.mugenyi@nfa.go.ug</a>                                                  |
| Eco-tourism officer                 | Sylvia Tumusiime                       | Tel: +256 312 264430/6<br>Mobile: 256 776325959<br>Email: <a href="mailto:sylvia.tumusiime@nfa.go.ug">sylvia.tumusiime@nfa.go.ug</a> |
| Budongo CFR                         | Mr Mubokisa Robert<br>(Sector manager) | Tel: 0779 522 969                                                                                                                    |
| <b>World Bank Team:</b>             |                                        |                                                                                                                                      |
|                                     | Eng. James Labongo                     | <a href="mailto:labongojames.soltech@gmail.com">labongojames.soltech@gmail.com</a>                                                   |
|                                     | Lesya Verheijen                        | <a href="mailto:lesya.verheijen@gmail.com">lesya.verheijen@gmail.com</a>                                                             |
|                                     | Stephen Ling                           | <a href="mailto:sling@worldbank.org">sling@worldbank.org</a>                                                                         |
| <b>Design Team: FBW</b>             |                                        |                                                                                                                                      |
| Project Coordinator                 | Stuart Harley                          | Tel: +256 (0)703 788278<br>E-mail: <a href="mailto:s.harley@fbwgroup.com">s.harley@fbwgroup.com</a>                                  |
| Lead Architect / Design Team Leader | Nigel Tilling                          | Tel: +256 (0)752 796777<br>E-mail: <a href="mailto:n.tilling@fbwgroup.com">n.tilling@fbwgroup.com</a>                                |
| Project Architect                   | Franka Van Marrewijk                   | Tel: +31 613031213<br>E-mail: <a href="mailto:f.vanmarrewijk@gmail.com">f.vanmarrewijk@gmail.com</a>                                 |
| Project Architect                   | Alexandra Papadaki                     | Tel: +31 613031213<br>Email: <a href="mailto:apapadaki@fbwarchitecten.nl">apapadaki@fbwarchitecten.nl</a>                            |
| Project Architect                   | Donald Luwaga                          | Tel: +256 785 544324<br>Email: <a href="mailto:d.luwaga@fbwgroup.com">d.luwaga@fbwgroup.com</a>                                      |
| Structural Engineer                 | Joseph Debuni                          | Tel: +256 (0)772 508462<br>E-mail: <a href="mailto:j.debuni@fbwgroup.com">j.debuni@fbwgroup.com</a>                                  |
| MEP Project Manager                 | Dean Gibbs                             | Tel: +256 (0)769 024260<br>E-mail: <a href="mailto:d.gibbs@fbwgroup.com">d.gibbs@fbwgroup.com</a>                                    |

### 1.3 Justification for the establishment of Visitor Information Centres

The justification for the establishment of the VIC is threefold, i.e.; the opportunities that the establishment of the VIC creates; the economic impact of the VIC on the national and local economies; and the role of the VIC in the NDP III.

#### 1.3.1 Opportunities for the VIC

NFA recognizes that more value could be generated from CFRs through tourism. It has identified the need for improved tourism infrastructure and facilities which include, among others, visitor centres, tracks, trails, bridges, and boardwalks. There is, therefore a need for the government to further invest in tourism infrastructure in forest and wildlife PAs to increase

tourism revenues and encourage growth necessary for the socio-economic transformation of Uganda in line with the National Vision 2040.

The proposed VIC presents the proponent with an important opportunity to fill gaps in the current tourism promotion arrangement and the avenues through which the reception centres relate with the host communities associated with tourism and conservation.

The VIC can be used to promote the tourist destinations within the protected areas, provide information and interpretation for identified attractions, control and filter visitor flows and, in some cases, be a substitution for on-site visits. VICs may in some instances serve other non-touristic purposes for example as community centres, displaying the pride and regional achievements of the area and serving as administrative and research hubs for local tourism management among other uses.

The gist of the VIC is to inform visitors about the features of the destinations, encourage them to spend more time, and promote responsible behaviour. The VICs can provide rich content that reflects the values of the attraction, activities and experiences in a destination and seek to stimulate tourism demand. Commercial activities can also be associated with this function including information on restaurants, accommodation and cultural events and festivals.

The VIC can be used as a hub within a destination to manage the visitor flow and prevent congestion during briefing sessions at popular destinations. Acting as gateways and central information and interpretation points, the VICs can determine the times of the day to visit certain attractions and/or suggest alternative locations for less crowded experiences thus creating wider circuits in the tourism routes. The use of the VICs in conjunction with other activities, such as guided tours or films can concentrate visitors' numbers outside fragile sites or viewing areas (UNESCO, 2019).

Visitor Centre staff are key resources in providing information and concierge services as well as impacting visitor behaviour to ensure a quality experience both for the visitor and for interactions with residents. Furthermore, the VIC can provide space to generate revenue through the sale of tickets, merchandise, local handicrafts, paid comfort facilities and parking. These can be important resources to finance conservation.

### **1.3.2 The impact of VICs on National Development**

The operation of the VICs is anticipated to significantly boost tourism activities not only within the PAs but also within the wider project area. This will increase overall tourism income including entrance fees, permits, activities and returns from concessionaires. The spillover effect of the tourism boost in project host communities will enhance the household incomes of individuals and businesses that participate in tourism through the provision of services such as accommodation, meals, entertainment, community walks and the sale of goods such as crafts and artefacts. This is especially the case for the towns and communities where tourism forms a major part of the local economy and contributes significantly to livelihoods and community welfare.

NFA operates a benefit-sharing scheme for CFR-adjacent communities. A percentage of revenue earned by NFA is paid to host local governments to support selected community projects including schools, health care, water supply, and roads to mention but a few. Increased tourism activities due to the implementation of the project should generate more resources for the benefit-sharing scheme.

### **1.3.3 Tourism in the Third National Development Plan (NDPIII) 2020/21 – 2024/25**

The importance of the tourism sector in promoting economic growth and alleviating poverty is recognized under NDP III. Tourism contributes towards inclusive growth and development by

bringing numerous economic value and benefits; helping in building the country's brand value, image and identity. It is also important in poverty reduction by providing employment and diversified livelihood opportunities. The sector is also crucial in the pursuit of SDG15 which is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss (NPA, 2020).

The major challenges that have led to inadequate exploitation of the country's tourism potential as per the NDP III are (i) limited branding, marketing and promotion; (ii) inadequate tourism infrastructure due to low investment; (iii) undeveloped and narrow product range.

The establishment of the VICs will seek to address each of these challenges while creating avenues for new ways to tap into Uganda's tourism potential. Key targets in the NDP III strategy for tourism that are relevant to the VICs include:

- a) Increase annual tourism revenues from USD1.6 billion to USD3.0 billion.
- b) Increase the contribution of tourism to total employment from 6.3% to 10% or from 667,600 to 1,100,000 people.
- c) Increase inbound tourism revenues per visitor from USD1,036 to USD1,500.

The establishment of the VICs will allow the country to make great strides in meeting the set targets and create a platform against which future development in the sector will be laid.

#### **1.3.4 Budongo Forest Management Plan**

The management plan was formulated through a consultative process initiated by NFA, NEMA, adjacent communities and all Sub County leaders from the three districts of Hoima, Buliisa and Masindi. The purpose of the plan is to provide an administrative framework/guideline on sustainable management and conservation of the CFR. This plan is implemented through NFA as the principle implementing organization with support from the other stakeholders. Six forest management activities / programmes have been designed to improve the management of Budongo forest so as to achieve the desired overall objective of the plan. Recreation and ecotourism development is one of the programmes. This activity aims at enhancing the ecotourism potential of Budongo CFR, to make it a world class recreational retreat for local, national and international tourists while at the same time ensuring that the natural habitat is conserved and protected. The potential for tourism for BCFR has systematically been growing. The two sites of Kaniyo Pabidi and Busingiro have frequently been visited by both Ugandans and the international community and are to be properly managed to enhance and promote ecotourism activities. The communities have been engaged in tracking animals mainly primates (chimpanzees and monkeys among others) and bird watching. The development of the VIC is based on these programme recommendations and is envisaged to provide a world class visitor center, promote conservation, boost tourism and support livelihood of local communities.

#### **1.4 Requirement for an Environmental and Social Impact Assessment**

According to the World Bank Environmental and Social Standard 1, the proposed development of the VIC is categorized as a moderate-risk project and is subject to an Environmental Assessment in accordance with national law and any requirements of the Environmental and Social Standards (ESSs) that the Bank deems relevant to such subprojects.

Subject to section 113 (1) of The National Environment Act, 2019... "A developer of a project set out in Schedule 5 shall— (a) conduct an environmental and social impact assessment by way of scoping; (b) preparation of terms of reference for an environmental and social impact study; and (c) undertake an environmental and social impact study as prescribed by the regulations."



Similarly, regulation 12(1) of the NEESA, 2020 provides that ... “A developer of a project under section 113 of the Act and set out in Schedule 5 of the Act shall undertake scoping and an environmental and social impact study in accordance with these Regulations.” The proposed project is categorized under Schedule 5, category 10 (i) “Construction of administration, educational and research infrastructure in Protected Areas of a capacity of more than 50 persons”.

### **1.5 Objectives of the Environmental and Social Impact Statement**

The key purpose of the ESIS is to ensure that the key environmental and social issues associated with the project are identified early enough so that the necessary mitigation measures are noted and integrated into the final project design. The ESIS is part of the EIA implementation framework in Uganda and is expected to assist NEMA in the issuance of an operational EIA certificate for the project.

The systematic investigative and reporting methodology specified for the conduct of Environment Impact and Social Impact Assessments was adopted in this study. Baseline data on project design was generated through discussion with the proponent and review of project documentation. Opinions formed were revalidated through fieldwork entailing site investigations and interviews with potentially affected people and secondary stakeholders.

The specific objectives of the study were to:

- (i) describe the nature of construction to be undertaken;
- (ii) verify compliance with environmental laws, policies and regulations as well as industry best practices and standards;
- (iii) identify and analyse alternatives to the proposed project;
- (iv) Identify, analyse and propose mitigation measures for positive and negative impacts and enhancement measures for positive impacts to be undertaken during and after the implementation of the project including; recommending cost-effective measures to be used to mitigate against the anticipated negative impacts;
- (v) seek the views of affected persons in consultation with NEMA and concerned lead agencies;
- (vi) Prepare an Environmental and Social Management Plan (ESMP) report compliant with the NEA (2019).

The assessment was undertaken in full compliance with the National Environment Act (2019) and Environment Impact Assessment Regulations, 2020.

### **1.6 Scope of the study**

A comprehensive evaluation of the study area was carried out and the environmental character of the area was determined. This was related to the development plans, design scheme and the potential impacts identified. Recommendations are made, which are aimed at ensuring compliance with relevant environmental statutes and ensuring the preservation of the ecological balance through the mitigation of anticipated impacts. Based on the identified impacts, measures to mitigate impacts are recommended for project design, implementation planning and operation and maintenance of the project. In light of these issues, the ESIA scope included:

1. Baseline environmental and social-economic conditions: The study established the existing baseline environmental conditions and gives an overview of the existing socio-economic situation in the project District, and site-specific physical and biological environmental conditions, including flora and fauna.
2. Environmental law and policy framework are relevant to the project.
3. Inventory of land use, existing settlements and ownership in the affected project and surrounding areas;

4. Impact of the project on vegetation, water resources, landscape, soil erosion and site stability;
5. Occupational health and safety (OHS): The study considers the OHS of the workers during the construction and operation phase of the project;
6. Water and sanitation: The study considers and analyses water supply and sanitation issues and requirements and how they are/ to be impacted by the proposed development;
7. Waste generation and management: This includes construction waste and waste management during the operation phase. The ESIA identifies sources and types of waste, its generation and management;
8. Noise: Baseline noise levels determined through field measurements have been used to analyse how noise will be altered by construction activities and operation of the project;
9. Traffic generation and flow: The study establishes and assesses project related traffic associated issues such as safety, air quality and noise;
10. Air quality: This report provides an assessment of how the existing quality of the ambient environment is likely to be impacted by the proposed development.
11. Infrastructure and utilities: This ESIA establishes the existing infrastructure and utilities in the impact area and how this will be impacted by the proposed project development;
12. Socio-economic assessment: This ESIA also provides an assessment of the socio-economic conditions of the people as well as their cultural practices and how this may be affected by the project; and
13. Public disclosure and stakeholder consultations: The ESIA provides the views, comments, and suggestions of a broad array of stakeholders that were consulted during the EIA stakeholder consultation process.

### 1.7 Compliance with the Approved Terms of Reference

The consultant has studied the key aspects highlighted during the review of the TORs for this study as approved by NEMA. Table 1.2 below outlines the Terms of Reference as set out by the Authority.

Table 1.2: Compliance with the approved Terms of Reference

| No  | Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance                                                                                                                                                                                                                                                                                                                                                                                                                   | Section       |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| (a) | Submit separate ESIA for each of the three proposed Visitors Information Centres (VIC) with clear location maps, GPS Coordinates clearly indicating the location for the proposed area for development of the VICs;                                                                                                                                                                                                                                                            | This ESIA report is for the proposed VIC within Budongo CFR. GPS coordinates and maps indicating the proposed area of development are given in chapter three of this report.                                                                                                                                                                                                                                                 | Chapter three |
| (b) | Comprehensive consultations are carried out with the key stakeholders including the Ministry of Gender, Labour and Social Development, the Department of Occupational Safety and Health and the respective District Local Government Authorities where the Central Forest Reserves are situated and the local communities in the project area; and that the views/concerns of the stakeholders consulted are well documented and appended to the ESIA reports to be submitted; | Extensive consultations were conducted with key stakeholders including Government MDAs, Collaborative Forest Management groups (CFMs), local communities, private operators, Civil society organizations (CSOs) and Community-Based Organizations (CBOs).<br><br>Issues raised during these consultative meetings have been documented in chapter seven of this report. The records of consultation have also been appended. | Chapter seven |

| No  | Condition                                                                                                                                                                                                                                                                                           | Compliance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Section                                                  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| (c) | Maps showing the existing fragile ecosystems in the project area, among others in relation to the project site and a detailed description of the baseline information of the project site and its environs is provided, including a proposed site layout plan;                                      | The prevalent environmental baseline conditions including the ecological characteristics of the proposed site are described in detail in chapter five of this report. The site layout plan indicating the proposed configuration of project components is given and described in chapter three of this report.                                                                                                                                                                                                                                                         | Chapter three<br><br>Chapter five                        |
| (d) | Details of the various components of the project and activities covering both the construction and operational phases of the project, including sources and types of raw materials and the different types of waste streams, are provided;                                                          | A detailed description of the proposed project components is given in chapter three of this report; including all activities under the construction and operation phase.                                                                                                                                                                                                                                                                                                                                                                                               | Chapter three                                            |
| (e) | Soil and water analyses are carried out for the project site respectively, and that soil and water analyses results are included in ESIA report;                                                                                                                                                    | Results from the analysis of the soil and water sources at the site are given in chapter five of this report.                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter five                                             |
| (f) | Comprehensive evaluation of the potential environmental impacts associated with the proposed project components and activities, is provided;                                                                                                                                                        | An analysis of the potential positive and negative impacts for all project phases (i.e., construction, operation and decommissioning) is given under chapter eight of this report                                                                                                                                                                                                                                                                                                                                                                                      | Chapter eight                                            |
| (g) | Include in the ESIA report comprehensive mitigation and environmental management and monitoring plans, respectively (preferably in table matrix format), that related to the identified potential environmental impacts and risks;                                                                  | Mitigation measures including requirements for monitoring, allocation of roles and the cost are given to address the potential impacts associated with the proposed project. Additional management plans have also been prepared to consolidate the ESMP during all phases of project implementation i.e.:<br><ul style="list-style-type: none"> <li>- Waste management plan (Appendix H)</li> <li>- Health and Safety plan (Appendix I)</li> <li>- Biodiversity management and monitoring plan (Appendix J)</li> <li>- Chance finds procedure (Appendix K)</li> </ul> | Chapter nine<br><br>Chapter ten<br><br>Appendices H to K |
| (h) | Any other critical environmental aspects/ concerns which may have not been initially foreseen during the preparation of the scoping report and ToR are addressed, and include an evaluation of such concerns in the ESIA report;                                                                    | The ESIA evaluates the potential impact of the VIC over several thematic areas including ecological, OHS, cultural, social etc. The ESMP provides for continuous monitoring to address the emergence of any unforeseen impacts at the time of reporting.                                                                                                                                                                                                                                                                                                               | Chapter nine<br><br>Chapter ten                          |
| (i) | Provide details of the various components of the project and include costs of works, machinery/equipment and land for the project, the estimated cost of the project evidenced by a certificate of valuation of the capital investment of the project, issued by a qualified and registered valuer; | A description of the estimated cost of project development is given in chapter three of this report. The certificate of valuation is attached to this report                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter three                                            |

## 1.8 ESIA Report Structure

The structure of the report is based on the NEMA EIA guidelines and is presented in eleven chapters as indicated in Table 1.3.

Table 1.3: Structure of the Report

| Chapter      | Title                                              | Contents                                                                                                                                                                                                                                                                                                                                                         |
|--------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1            | Introduction                                       | Presents the project background, EIA and its objectives, Scope of the Study, Project Categorization, Legal and Policy requirements, Justification and developer's details.                                                                                                                                                                                       |
| 2            | Legislative and Institutional Framework            | Provides an overview of the environmental regulatory and policy framework applicable to the project.                                                                                                                                                                                                                                                             |
| 3            | The proposal                                       | Provides a detailed description of the project in relation to its location, the key project components and an overview of the proposed activities that are to take place during the various project phases                                                                                                                                                       |
| 4            | Study methodology                                  | Presents the assessment methodology and approach to the ESIA study                                                                                                                                                                                                                                                                                               |
| 5            | Environmental and social baseline                  | Presents the environmental and social baseline conditions within the project site and its surroundings                                                                                                                                                                                                                                                           |
| 6            | Analysis of alternatives                           | Investigates several alternatives to the project development in relation to the project site, chosen technology, and project design, and finally investigates the 'no action alternative' which assumes that the project development does not take place                                                                                                         |
| 7            | Public participation process and disclosure        | Discusses the stakeholder consultation and engagement plans which were undertaken as part of the ESIA process for the project and provide an overview of the findings                                                                                                                                                                                            |
| 8            | Analysis of potential impacts                      | Identifies and assesses the potential impacts of the project on the various environmental and social receptors. In addition, for each impact, a set of mitigation measures have been identified to eliminate or reduce the impacts to acceptable levels. Cumulative and residual impacts are also discussed in this chapter                                      |
| 9            | Environmental and Social Management Plan           | Presents the Environmental Management Plan (ESMP) for the project; which mainly summarises the impacts identified as well as the mitigation measures and monitoring requirements to be implemented throughout the various project phases. In addition, this chapter describes the institutional framework and procedural arrangement for the ESMP implementation |
| 10           | Environmental monitoring                           | Presents the environmental monitoring and reporting protocols to be adhered to during all phases of project development (i.e. construction, operation and decommissioning).                                                                                                                                                                                      |
| 11           | Conclusion                                         | Gives the study recommendation and conclusion                                                                                                                                                                                                                                                                                                                    |
| Bibliography |                                                    |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendices   |                                                    |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix A   | Approved Terms of Reference                        |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix B   | Proof of land ownership/Gazettement instrument     |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix C   | Architectural drawings                             |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix D   | Records of stakeholder engagement                  |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix E   | Biodiversity report                                |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix G   | Soil analysis report                               |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix H   | Health and Safety plan                             |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix I   | Biodiversity Management and Monitoring Plan        |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix J   | Chance Finds Procedure                             |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix K   | Cultural Heritage Management Plan (CHMP)           |                                                                                                                                                                                                                                                                                                                                                                  |
| Appendix L   | Climate Change Vulnerability and adaptive measures |                                                                                                                                                                                                                                                                                                                                                                  |

| Chapter     | Title | Contents                      |
|-------------|-------|-------------------------------|
| Appendix M: |       | Grievance Log and Action form |



## 2.0 LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

### 2.1 Overview

This chapter sets out the standards for which the legal, policy and administrative framework within which the proposed project will be developed. It identifies the applicable National regulatory provisions and the World Bank requirements. For convenience and to demonstrate a systematic approach to identifying legal constraints, it has been structured around the broad topic areas set out in the World Bank Environmental and Social Standards (ESSs) as these comprehensively address the environmental and social risks that may be faced by the project. The ESIA conforms to the National legislative and regulatory framework and is in line with the World Bank's Environmental and Social Framework and General Environmental, Health and Safety Guidelines (EHSGs). For the majority of disciplines, where there is a disparity between the National Regulatory Framework and World Bank ESSs, the more stringent will prevail.

Key legislations governing the ESIA procedures are the National Environment Act No.5 of 2019 and the National Environment (Environmental and Social Assessment) Regulations, 2020. The National Environment Management Authority (NEMA) is the established regulator charged with the responsibility to ensure compliance with environmental and social impact assessment procedures in the planning and execution of development projects.

In consideration of the National policies, laws, regulations and the World Bank Environmental and Social Framework, the following project-related issues were considered:

- *The conduct of Environmental and Social Impact Assessments;*
- *Occupational Health and Safety;*
- *Labour relations;*
- *Pollution prevention and management;*
- *Public Health and Safety;*
- *Biodiversity conservation;*
- *Cultural heritage;*
- *Waste management;*
- *Resource efficiency management; and*
- *General environmental management*

The most relevant and significant national policies, laws and regulations for Uganda that apply to the proposed project are summarised in box 2.1 below.

Box 2.1: Relevant legislative framework

#### **Policy framework**

The National Environment Management Policy, 1994  
 Uganda Forestry Policy, 2001  
 Uganda Tourism Policy, 2015  
 Uganda Wildlife Policy, 2014  
 Uganda National  
 Cultural Policy 2006  
 Uganda Museums and Monuments Policy 2015  
 National Climate Change Policy, 2015  
 National Policy for the Conservation and Management of Wetland Resources  
 The Uganda National Land Policy (2013)  
 The National Employment Policy for Uganda, 2011  
 The National Youth Policy, 2001  
 The Uganda Gender Policy, 2007  
 Uganda National HIV and AIDS Policy, 2011  
 The Renewable Energy Policy for Uganda, 2007  
 Solar Power Subsidy (2007)

## Uganda National Medicines Policy 2015

### **Legal framework**

The National Environment Act, 2019  
The National Forestry and Tree Planting Act, 2003  
Tourism Act 2008  
The Uganda Wildlife Act,  
The Physical Planning Act, 2010  
The Museums and Monuments Act, 2023  
The Water Act, Cap 152  
The Land Act, 2010  
The Occupational Safety and Health Act, 2006  
The Workers' Compensation Act, Cap 225  
The Employment Act, 2006  
The Children Act (as amended), 2016  
The Local Governments Act, Cap 243 (as amended)  
The Traffic and Road Safety Act, Cap 361  
The Uganda Human Rights Commission Act 1997  
Traditional Rulers (Restitution of Assets and Properties) Act 1993  
Institution of Traditional Leaders or Cultural Leaders Act 2011  
Copyright Act and Neighbouring Rights Act 2006  
The Prohibition of the Burning of Grass Act, Cap 33  
The National Climate Change Act, 2021  
The Plant Protection Act (cap 31)

### **Regulations**

The National Environment (Environmental and Social Assessment) Regulations, 2020  
The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000  
The National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020  
The National Environment (Waste Management) Regulations, 2020  
The National Environment (Noise Standards and Control) Regulations, 2003  
The National Environment (Management of Ozone Depleting Substances & Products) Regulations 2020  
The National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001  
The National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003  
The National Forestry and Tree Planting Regulations, 2016

### **Institutional framework**

National Environment Management Authority (NEMA)  
Uganda Wildlife Authority (UWA)  
National Forestry Authority (NFA)  
Ministry of Tourism, Wildlife and Antiquities (MTWA)  
Ministry of Water and Environment (MWE)  
Ministry of Gender Labour and Social Development (MGLSD)  
Uganda Tourism Board (UTB)  
Uganda Police Force (UPF)  
District Local Governments  
Cultural institutions  
Civil Society Organizations (CSO)  
Community-Based Organizations (CBO)

## **2.2 The Constitution of the Republic of Uganda, 1995**

The Constitution, as the supreme law, provides the legal and regulatory framework in the country. It provides for all aspects of land, the environment and other related aspects.

It provides for state protection of important natural resources such as land, water, wetlands, minerals, fauna and flora for ecological and tourism purposes on behalf of the people of Uganda under Objective XIII. It also provides for the creation and development of Parks, Reserves, recreation areas and conservation of natural resources by central and or Local Governments under Objective XXVII.

**Relevance:** The Proponent shall take all measures to ensure the establishment and operation of the proposed visitor information centres do not infringe on the right to a clean and healthy environment. The development and operation of the proposed project shall conform to the Laws of Uganda at all times.

## **2.3 Policies**

### **2.3.1. The National Environment Management Policy, 1994**

The National Environment Management Policy (1994) provides an enabling framework for the management of environmental resources in all aspects of national planning including providing a system of environmental impact assessment so that the adverse impacts of development activities can be foreseen, avoided or mitigated.

**Relevance:** According to the NEMP, it is mandatory to undertake ESIA before any development project likely to have significant environmental impacts is given a go-ahead. This is to ensure that development projects are implemented in an economically viable, socially acceptable and environmentally acceptable manner.

Since activities of the proposed project may lead to risks to biodiversity in sensitive ecosystems and lead to pollution of water and air, appropriate mitigation measures shall be in place to prevent and/or reduce the impact in compliance with this policy.

This policy requires developers to conduct their business in a socially responsible and environmentally acceptable manner to protect and ensure the safety and health of the environment.

The proponent is carrying out an ESIA in consideration of the nature of the project in relation to its receiving environment

### **2.3.2. Uganda Tourism Policy, 2015**

The overall goal of the Tourism Policy is to set the strategic objectives and broad framework for management and development of the sector by creating an environment that will encourage investment and growth necessary for the socio-economic transformation of Uganda in line with the National Vision 2040.

The objectives of the policy address the most significant constraints to growth by prescribing the essential measures needed to create an environment for sustainable development, and the targeted outcomes for visitor numbers and tourism receipts.

1. To develop and diversify the tourism products and services
2. To develop tourism infrastructure and facilities
3. To promote and market the destination in national, regional and international markets
4. To develop human resource and institutional capacity for the tourism sector
5. To enhance regulation, coordination and management of the tourism sector
6. To promote community involvement and enterprise development in the tourism economy
7. Promote the safety and security of tourists and tourism assets
8. Promote local, regional and global partnerships for tourism development
9. Promote the conservation of natural and cultural heritage resources

The policy vision for the tourism sector is “Uganda established as Africa's top sustainable tourism destination.”

The Mission of the Uganda Tourism Policy is "To develop and promote sustainable tourism in Uganda significantly contributing to national development"

The following principles will guide the development of responsible tourism in Uganda:

- (i) Tourism will be private sector driven
- (ii) The government will provide the enabling framework for the industry to flourish
- (iii) A strong destination brand and image and increased national awareness of tourism
- (iv) Effective market inclusiveness and community involvement will form the basis of tourism growth
- (v) Tourism development will be underpinned by sustainable environmental practices
- (vi) Tourism development is dependent on the establishment of cooperation and close partnerships among key stakeholders
- (vii) Tourism development will take place in the context of regional cooperation with other states of East Africa
- (viii) Tourism development will support the economic, social and environmental goals and policies of the government

For Uganda to achieve its vision for tourism, several key conditions shall be met, as identified below:

- (i) Sustainable environmental management practices
- (ii) Involvement of local communities
- (iii) A safe and stable tourism environment
- (iv) Globally competitive practices, by offering quality services and value for money
- (v) Innovative and responsive to customer needs
- (vi) Focus on product enhancement and emphasize diversity
- (vii) Effective tourism training, education and awareness
- (viii) Creative and aggressive marketing and promotion
- (ix) Strong economic linkages with other sectors of the economy
- (x) Appropriate institutional structures
- (xi) Appropriate supportive infrastructure
- (xii) Data-driven decision making

**Relevance:** VICs play an important role in the management of PAs by promoting sustainability, supporting visitor management, influencing behaviours during visits, and collecting data on visitors' numbers and activities along with information on their needs and motivations. Sustainably managing tourism requires both a long-term perspective and careful consideration of the many ways in which tourism activities and interactions with communities and the environment interrelate.

VICs have multiple functions depending on their development and management. They can be used to promote the destination, provide information and interpretation of the area's attractions, control and filter visitor flows and, in some cases, be a substitution for on-site visits. Additionally, VICs may serve other purposes including acting as community centres, displaying the pride and political achievements of the area and serving as the administrative and research hub for local tourism management.

### 2.3.3. Uganda Forestry Policy, 2001

The goal of the forestry policy is, “An integrated forest sector that achieves sustainable increases in the economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable”

The following general principles guide the Forestry Policy. These principles build on the government's national development priorities of poverty eradication and good governance.

National objectives: the forestry policy is consistent with the national objectives and directive principles guiding sustainable development found in the constitution and vision 2025.

- Conservation and sustainable development: Uganda's forests should be managed to meet the needs of this generation without compromising the rights of future generations.
- Livelihoods and poverty: the improvement of livelihoods should be a major goal in all the strategies and actions for the development of the forest sector to contribute to poverty eradication.
- Biodiversity and environmental services: forest sector development should safeguard the nation's forest biodiversity and environmental services through effective conservation strategies.
- Partnerships in governance: new institutional relationships should enhance efficiency, transparency, accountability and professionalism, and build confidence in all forest stakeholders:
- Gender and equity: the active participation and affirmative action of all women and men, young people and the elderly, and vulnerable or disadvantaged groups should be integrated into forest sector development.
- Cultural and traditional institutions: forest sector development should take into consideration cultural and traditional attributes and institutions.
- International obligations: legislation should be developed to support the implementation of current and future international commitments that affect the forest sector.
- Forestry valuation: environmental and social values should be used in cost/benefit valuations when assessing strategies to implement the forestry policy.

Policy statements relevant to the establishment of the VIC include:

- Policy Statement 1: on forestry on government land  
The Permanent Forest Estate under government trusteeship will be protected and managed sustainably
- Policy Statement 5: on collaborative forest management  
Collaborative partnerships with rural communities will be developed for the sustainable management of forests
- Policy Statement 7: on the conservation of forest biodiversity  
Uganda's forest biodiversity will be conserved and managed in support of local and national socio-economic development and international obligations

**Relevance:** The forestry policy guides the operations of the National Forestry Authority in consideration of the wider policy and legal changes, national development objectives, diversity of stakeholders and the importance of the forest resources. The policy addresses several critical areas in forestry management including promotion of eco-tourism and the cultural significance of forests.



#### **2.3.4. Uganda Wildlife Policy, 2014**

This policy recognises that tourism in Uganda relies significantly on wildlife. It sets a framework to conserve the wildlife resources of Uganda in a manner that contributes to the sustainable development of the country and the well-being of its people. Among the specific objectives:

- (1) to promote sustainable management of wildlife, protected areas (in and outside), sustainable and equitable utilisation of wildlife resources a viable form of land use
- (2) to effectively mitigate human-wildlife conflicts, and
- (3) to ensure net positive impacts of exploration and development of extractive industries and other forms of development in wildlife conservation areas.

The policy identifies key strategies for tourism development including:

- (1) promote eco-tourism
- (2) diversify tourism products
- (3) develop or improve infrastructure in wildlife conservation areas
- (4) support the private sector to effectively participate in conservation-related enterprise development.

**Relevance:** The proposed locations for the VICs are all within protected areas and their development may impact the wildlife within these locations. An ESIA has been conducted in line with the requirements of this policy and relevant legislation.

#### **2.3.5. Uganda National Cultural Policy 2006**

The Uganda National Culture policy aims to promote aspects of Uganda's cultural heritage that are cherished by its people. The policy recognizes that Uganda has several cultural sites and monuments. Some of them are man-made while others are natural. These sites, monuments and antiquities are important for socio-cultural and educational purposes. The natural sites also enhance the protection of the environment. The cultural beliefs, traditions and values are core to a community's mechanism for survival. These beliefs and values enhance social cohesion and sustain an acceptable moral fabric. Interventions to enhance the appreciation of these values and to mitigate social practices that are oppressive to people shall be promoted.

**Relevance:** This proposed project is located within territories of cultural institutions including the Banyoro, the Bagungu, the Bafumbira and others. Stakeholder engagement and project disclosure have been conducted as part of this ESIA. This conforms with the requirements of this policy.

#### **2.3.6. Uganda Museums and Monuments Policy 2015**

Provides a framework to preserve and protect heritage, promotes sustainable heritage management through tourism sites, museums and cultural centres and promotes respect for Uganda's cultural diversity and history.

**Relevance:** This policy informs the approaches to cultural heritage consultation and proposed mitigation measures incorporated in this ESIA.

#### **2.3.7. National Climate Change Policy, 2015**

The goal of the policy is to ensure a harmonised and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda. The overarching objective of the policy is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures while promoting sustainable development and a green economy. To achieve this overarching objective, the policy builds on several more specific objectives:

1. To identify and promote common policy priorities to address climate change in Uganda.
2. To identify and promote adaptation policy responses for Uganda.

3. To identify and promote mitigation policy responses for Uganda.
4. To identify and promote monitoring, detection, attribution and prediction of policy responses for Uganda.
5. To support the integration of climate change issues into planning, decision making and investments in all sectors and trans-sectoral themes through appropriate institutional arrangements and legal framework.
6. To facilitate the mobilisation of financial resources to address climate change in Uganda.

**Relevance:** The Adaptation Policy Priorities relevant to the project include:

1. Biodiversity and Ecosystem Services

Effectively address the challenges posed by climate change impacts on biodiversity and ecosystems to ensure ecosystem health and provision of ecosystem services that are crucial to sustainable and resilient development.

2. Wildlife and Tourism

Ensure the conservation of wildlife resources and plan for improved resilience of tourism resources and infrastructure to climate change

3. Energy

Promote sustainable energy access and utilisation as a means of sustainable development in the face of uncertainties related to climate change.

4. Human Settlements and Social Infrastructure

Promote urban planning and development of human settlements that are resilient and robust enough to withstand climate change-related risks and hazards.

### **2.3.8. National Policy for the Conservation and Management of Wetland Resources, 1995**

The overall objective is to promote the conservation of Uganda's wetlands to sustain their ecological and social economic functions. The policy makes provision for the Ramsar Convention on Wetlands of International Importance and provides for the requirement of ESIA for all planned developments in protected wetland areas.

**Relevance:** Several aspects of the development of the VICs in the protected areas have the potential to impact wetlands particularly, waste management. This ESIA identified potential impacts on wetland systems and recommended appropriate mitigation measures.

### **2.3.9. The Uganda National Land Policy (2013)**

The Uganda National Land Policy provides a framework for having an efficient and effective land delivery system. Among its other objectives, the policy seeks to harmonise and streamline the complex tenure regimes in Uganda for equitable access to land, and to clarify the complex constitutional and legal framework for sustainable management and stewardship. It also aims to ensure sustainable utilisation, protection and management of environmental, natural and cultural resources on land for socio-economic development. Section 6.7 addresses the sustainable utilization of natural resources and environmental management while Section 6.10 addresses the management of climate change impacts and compliance with international conventions.

**Relevance:** The subject policy shall guide in the development and operation of the VIC in the manner that ensures proper management of ecological systems and available natural resources.

### **2.3.10. The National Employment Policy for Uganda, 2011**

The policy provides a framework for achieving the goal of decent and remunerative employment for all women and men seeking such work, in conditions of freedom, equity, security and human dignity. Paragraph 6.6 emphasises the need for employers to comply with Uganda's legal and regulatory framework to promote the rights of workers.

**Relevance:** The policy will guide the recruitment and employee management procedures of project workers, including contractors.

### **2.3.11. The National Youth Policy, 2001**

The Policy provides an operational framework to facilitate the meaningful involvement of youth in national development efforts and to respond to their various needs. Section 8.8 highlights the significance of youth education and awareness in promoting the conservation of natural resources. The Policy aims to enhance the participation of youth in the development process.

**Relevance:** The proposed VIC has the potential to impact (positively and negatively) the youth within the tourism industry and the project areas. Concerns of youth were addressed during the stakeholder engagement process.

### **2.3.12. The Uganda Gender Policy, 2007**

The policy provides a framework for redressing gender imbalances as well as a guide to all development practitioners.

**Relevance:** This policy shall be utilised in ensuring gender mainstreaming in all aspects of the Project.

### **2.3.13. The Renewable Energy Policy for Uganda, 2007**

The policy aims to provide a framework to increase in significant proportions the contribution of renewable energy in the energy mix (from 4% in 2007 to 61% in 2017). The main features of the policy are the introduction of feed-in tariffs; Standardised power purchase agreements; the obligation of fossil fuel companies to mix products with biofuels up to 20%; and tax incentives on renewable energy technologies.

**Relevance:** The use of renewable energy is an important factor in promoting sustainable tourism within the Budongo CFR. Sustainability is a priority for the NFA in implementing the proposed project, this is evidenced by the integration of photovoltaics into the VIC designs. These initiatives are aimed at reducing the carbon footprint of each VIC.

### **2.3.14. Uganda National Medicines Policy 2015**

The Uganda National Medicines Policy highlights the need to regulate traditional and complementary medicines.

**Relevance:** The Budongo CFR is surrounded by people that attach considerable cultural importance to forest resources, including rivers, hills, plants, and animals. To these people, the forests are a source of physical, emotional, and spiritual well-being. Before the forests were gazetted, the adjacent communities fully depended on forest resources for food, medicine, basketry, firewood, marketable items, house construction, tools, rituals, hunting, and recreation.

The proposed VIC has prioritized spaces for setting up arboretums aimed at the preservation of key medicinal tree species relevant to the host communities. Relevant information shall also be availed at the VIC regarding the different plants with medicinal purposes.

## **2.4 Laws**

### **2.4.1. The National Environment Act, 2019**

The National Environment Act is the principal environmental law of Uganda and it establishes the National Environment Management Authority (NEMA) as the principal agency in Uganda for the management of the environment. Under Section 19, the Act states the criteria under which EIA shall be required.

**Relevance:** Per Part X and Schedule 5 to the Act, the proposed project qualifies for ESIA

### **2.4.2. The National Forestry and Tree Planting Act, 2003**

The Act provides for the conservation, sustainable management and development of forests for the benefit of the people of Uganda; the declaration of forest reserves for purposes of protection and production of forests and forest produce; the sustainable use of forest resources and the enhancement of the productive capacity of forests; to provide for the promotion of tree planting.

**Relevance:** The Act prohibits the destruction, damage or disturbance of natural forests and forest reserves except in the course of carrying out activities for their sustainable management, or per a licence issued under this Act. Section 38 also requires any person tending to undertake a project or activity which may, or is likely to have a significant impact on a forest, to undertake an environmental impact assessment.

### **2.4.3. Tourism Act 2008**

The Tourism Act was enacted to reform, consolidate and streamline the law relating to tourism; to provide for licensing, regulating and controlling of the tourism sector etc.

**Relevance:** The Tourism Act informs approaches to tourism assessment, including heritage tourism.

### **2.4.4. The Uganda Wildlife Act,**

The Act provides for sustainable management of wildlife, consolidation of the laws relating to wildlife management, the establishment of a coordinating, monitoring, and supervisory body for that purpose and all associated matters.

**Relevance:** The proposed locations for establishing the VICs are within crucial wildlife habitats and shall put into consideration the relevant provisions of this Act.

### **2.4.5. The Physical Planning Act, 2010**

The Physical Planning Act, 2010 repeals the Town and Country Planning Act, Cap 246 as the principal law pertaining to physical planning requirements, and makes it mandatory for any person undertaking development within a designated planning area to obtain development permission.

**Relevance:** The Proponent shall obtain permission from the relevant physical planning committees before project implementation

### **2.4.6. The Museums and Monuments Act, 2023**

The Museums and Monuments Act, 2023 consolidates and reforms the law relating to cultural and natural heritage. It strengthens the administrative structures for the effective management of cultural and natural heritage. The Act provides for the development, management and maintenance of museums and monuments and the formalisation, control and protection of tangible and associated intangible cultural heritage and works of art collection. The Museums and Monuments Act, 2023 repealed the Historical Monuments Act, Cap. 46.

Section 21 provides for the protection and preservation of public monuments and memorials. Section 26 (2) penalises the abuse and misuse of heritage sites, monuments and museums. Section 33 (4) allows for a person who discovers palaeontological and archaeological objects or materials in the course of development to report their findings to a police officer or the local government, within forty-eight hours from the time when the objects were discovered.

**Relevance:** The provisions of the Museums and Monuments Act, 2023 shall be put into consideration during the construction phase. The Project Proponents shall implement the chance finds procedure (Appendix J) in compliance with this Act.

#### **2.4.7. The Water Act, Cap 152**

Objectives of the Act include, among others, the promotion of rational management and use of the waters of Uganda; the control of pollution and the promotion of the safe storage, treatment, discharge and disposal of waste.

**Relevance:** The proposed activities will require water from surface water and groundwater sources to meet project water needs and as such shall conform to the provisions of this Act.

#### **2.4.8. The Land Act, 2010**

The Land (Amendment) Act 2010 aims to enhance the security of occupancy of lawful and bona fide occupants on registered land in accordance with article 237 of the Constitution, and for related matters.

**Relevance:** The proposed Project requires permanent land take. The utilization of the land resources under the management of the Proponent shall be in line with the provisions of this Act.

#### **2.4.9. The Occupational Safety and Health Act, 2006**

The Occupational Safety and Health Act consolidates, harmonises, and updates the law relating to occupational safety and health; and repeals the Factories Act, Cap 220. The Act sets out regulations on the duties, obligations and responsibilities of employers, the self-employed, and manufacturers, suppliers and transporters in relation to occupational, health and safety. It also provides for the duties, rights and responsibilities of workers and covers regulations on the registration of workplaces; health and welfare; general safety requirements; fire preparedness; machinery, plant and equipment; hazardous materials; chemical safety and special provisions; and offences, penalties and legal proceedings. The Act details the process for administration and enforcement of the Act including the appointment of inspectors and power of inspectors and provides for the establishment of an Occupational Safety and Health Board.

**Relevance:** The Act lays out the general safety, health and environmental requirements for workplace safety to be applied during the construction and operational phases of the Project including obligations to inspect statutory equipment and register workplaces. All Project phases shall be implemented in line with the provisions of this Act, and requisite permits obtained.

#### **2.4.10. The Workers' Compensation Act, Cap 225**

The Act provides for compensation of workers in the event of personal injury arising out of or in the course of a worker undertaking his or her duties. The Act entitles employees to automatic compensation for any personal injury from an accident arising out and in the course of their employment even if the injury results from the employee's negligence. It also stipulates that for an injury that leads to death, the compensation should be equivalent to an employer's monthly pay multiplied by 60 months.

**Relevance:** In the event of a work-related personal injury on any of the Project sites, compensation of the affected worker(s) shall be provided in line with the provisions of this Act.

#### **2.4.11. The Employment Act, 2006**

The Act outlines the conditions of employment including, contract of service, termination of contracts, termination notices, and protection of wages, hours of work, rest and holidays, employment of women, employment of children and care of employees.

**Relevance:** The Act will guide the Project Proponents' compliance with labour and safety conditions during Project activities.

#### **2.4.12. The Children Act (as amended), 2016**

The Act provides for the protection of children and prohibits the use of child labour or employment in any activity that may be harmful or hazardous to his or her health (s.8). It stipulates that the minimum age of employment of a child shall be 16 years.

**Relevance:** The Act will regulate the Project Proponent's labour and recruitment policies during Project activities. The provisions of this Act shall be contractually extended to all sub-contractors, particularly during the construction phase.

#### **2.4.13. The Local Governments Act, Cap 243 (as amended)**

The Local Governments Act, Cap 243 establishes a decentralised form of government based on the district as the main unit of administration. The districts are given legislative and planning powers under this Act. They also plan for the conservation of the environment within their local area.

**Relevance:** District Environment Committees and Local Environment Committees established under Sections 14 and 16 of the National Environment Act help guide the district authorities in matters relating to the conservation of the environment. District and lower local government authorities shall be engaged during the production of this ESIA.

#### **2.4.14. The Traffic and Road Safety Act, Cap 361**

The Act stipulates laws relating to road traffic (among others: registration of vehicles, drivers' permits, vehicle load limits, vehicle condition and road safety). This Act sets out regulations regarding the use of a motor vehicle trailer or engineering plant on any road; the need for the registration of all motor vehicles; the need for obtaining driving permits; the requirement to comply with road signs and speed limits; the procedure to be followed at the time of an accident; the need for the employer to keep a record of drivers, and so forth.

**Relevance:** The Project will involve haulage of equipment in and out of the respective sites. The provisions of this act will be vital in ensuring safety on the roads.

#### **2.4.15. The Uganda Human Rights Commission Act 1997**

The Act makes provisions concerning the Uganda Human Rights Commission.

**Relevance:** Any human rights issues of concern as a result of the Project will be addressed in line with the provisions of this Act. This ESIA discusses relevant aspects of human rights.

#### **2.4.16. Traditional Rulers (Restitution of Assets and Properties) Act 1993**

To restore traditional rulers' assets and properties previously owned by them or connected with or attached to their offices but which were confiscated by the State.

**Relevance:** Informs procedures related to traditional rulers' assets.



#### **2.4.17. Institution of Traditional Leaders or Cultural Leaders Act 2011**

To provide for the existence of traditional or cultural leaders, their privileges and benefits, and the resolution of issues relating to traditional or cultural leaders.

**Relevance:** Informs procedures related to traditional rulers' assets.

#### **2.4.18. Copyright Act and Neighbouring Rights Act 2006**

To provide for the protection of literary, scientific and artistic intellectual works and their neighbouring rights, including traditional folklore and knowledge, handicrafts.

**Relevance:** Informs procedures related to traditional rulers' assets.

#### **2.4.19. The Prohibition of the Burning of Grass Act, Cap 33**

The Act prohibits the unauthorised burning of grass within a forest reserve, national park, wildlife reserve or wildlife sanctuary.

**Relevance:** Requires the Project Proponent to take appropriate measures to prevent the burning of grass within the Project Areas as a consequence of Project activities.

#### **2.4.20 National Climate Change Act 2021**

The Climate Change Act governs Uganda's national response to climate change. One of the stated purposes of the Act is to give effect to the UN Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement and Section 4 gives these agreements the force of law in Uganda.

The Act mandates the creation of a Framework Strategy on Climate Change, as well as a National Climate Action Plan and District Climate Action Plans. It also contains a series of provisions establishing a transparency framework and MRV system.

Part V of the Act relates to the institutional arrangements for governing climate change, creating a National Climate Change Advisory Committee to provide independent technical advice and clarifying the responsibilities of District and local governments with respect to climate change.

Article 26 concerns climate change litigation, containing broad provisions on standing to bring cases before the High Court against the Government, an individual, or private entity "whose action or omission threatens or is likely to threaten efforts towards adaptation to or mitigation of climate change".

**Relevance:** The Requires the Project Proponent to outline strategies and targets for reducing greenhouse gas emissions in line with international commitments, contributing to global efforts to combat climate change.

#### **3.4.21 The Plant Protection Act (Cap 31)**

The Act provides for the prevention of the introduction and spread of disease destructive to plants. Section 4(i) states "Every occupier or, in the absence of the occupier, every owner of land shall take all measures as he or she may be required to take by virtue of any rules made under section 3 and, in addition, such other measures as are reasonably necessary for the eradication, reduction or prevention of the spread of any pest or disease which an inspector may by notice in writing order him or her to take, including the destruction of plants.

**Relevance:** The Plant Protection Act (Cap 31) is relevant to VIC construction and operation because it emphasizes the prevention of plant diseases and pests. Compliance with the Act may impact landscaping and plant management around the VIC.

## **2.5 Regulations**

### **2.5.1. The National Environment (Environmental and Social Assessment) Regulations, 2020**

The EIA Regulations, 2020 specify the general requirements for good EIA practice in Uganda. The Proponent is required to undertake an ESIA in accordance with the regulations including, preparation and submission of Terms of Reference, and provision of all contents for an environmental impact statement outlined under Regulation 14. Public participation: Sub-regulation (1) of Regulation 16 requires the developer to take all measures necessary to seek the views of the people in the communities that may be affected by the Project.

**Relevance:** This ESIA shall be undertaken per these regulations.

### **2.5.2. The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000**

The regulations provide for the conservation and wise use of wetlands, riverbanks and lakeshores and their resources in Uganda.

**Relevance:** The Project Proponents are required to adhere to the provisions on the protection of wetlands, lakeshores and riverbanks.

### **2.5.3. The National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020**

The Regulations prescribe the requisite standards for effluent or wastewater that may be discharged from establishments into water or on land.

**Relevance:** Wastewater management practices and discharge related to the proposed Project shall conform to the standards specified in these regulations.

### **2.5.4. The National Environment (Waste Management) Regulations, 2020**

These regulations outline the requirements for the management of waste in Uganda including transport, storage, treatment, disposal and licensing of waste contractors. Among other requirements prescribed in these regulations, the Proponent is required to hire licensed waste contractors to undertake transportation and disposal/treatment of hazardous waste,

**Relevance:** The Project will generate significant amounts of waste across all phases. All Project waste shall be managed in accordance with these regulations.

### **2.5.5. The National Environment (Noise Standards and Control) Regulations, 2003**

These regulations prescribe the maximum permissible noise levels from a facility or activity to which a person may be exposed, and set provisions for the control of noise.

**Relevance:** The Project Proponents are required to implement appropriate measures to keep construction and operational noise within the prescribed limits, and where excessive noise is deemed unavoidable, to obtain a licence to permit noise above permissible limits.

### **2.5.6. The National Environment (Management of Ozone Depleting Substances & Products) Regulations 2020**

The regulations operationalise Uganda's commitment to the Montreal Protocol, through restrictions on the trade of controlled substances and licensing of persons intending to import or export controlled substances.

**Relevance:** The Project Proponents will ensure that resourcing of materials is not from a country that is not a signatory of the Montreal Protocol. Additionally, any imports of controlled substances should be licensed by the relevant authority, and free of prohibited materials.

#### **2.5.7. The National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001**

The regulations establish and prescribe minimum soil quality standards to maintain, restore and enhance the inherent productivity of soil, and for the management of soil quality for specified agricultural practices.

**Relevance:** The regulations provide applicable standards and guidelines for soil conservation for areas where soil could be adversely affected by the Project.

#### **2.5.8. The National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003**

The regulations establish the code of conduct for the certification, and registration of Environmental Practitioners and for the practice of environmental impact assessment in Uganda.

**Relevance:** This ESIA has been conducted by a competent team of registered environmental practitioners as required by these regulations.

#### **2.5.9. The National Forestry and Tree Planting Regulations, 2016**

The regulations provide rules for the establishment and management of central and local forest reserves as well as community and private forests. The regulations require any person intending to disturb, uproot or cut any tree to obtain the consent of the owner (reg. 80); and provide for the declaration of reserved tree species (reg. 31).

**Relevance:** The Project Proponents will implement the Project in line with these regulations, including obtaining any permission as required.

### **2.6 The Budongo Forest Management plan**

The Budongo FMP highlights the Planned Management activities under specific operational areas (working circles) which are to be carried out complementarily during the 10-year implementation of the FMP. It describes the composition and condition of the stand/forest by blocks, namely Siba, Biiso, Busaju, East Waibira, West Waibira, Nyakafunio and Kaniyo-Pabidi. Comparison is made between the 1992 and 2006 exploratory inventory data to show the trend and differences between the two inventories (over a 14 year Period). A significant decline in the contribution of the high-value species *Entandrophragma spp*, *Khaya* (mahogany), *Lovoa* and *Milicia excelsa* (Mule) is revealed between the two inventories.

The plan outlines the markets for the forest resources (population in the neighbouring districts, the stakeholders and their rights, responsibilities and benefits, under partnerships in FM. It also lists benefits, problems, threats and conflicts in forest management and proposed actions for FMP implementation. It presents the management history of the BCFR starting with the first activities between 1900 and 1935. It describes briefly the previous five management plans from 1935 to 2007, listing the objectives of management, the silvicultural activities, harvesting yield control, revenue and expenditure. It further sets out the objectives of management and the period of the plan, indicating a review after 5 years (2016) and full revision after 10 years (2021). It lists the compartments in the production zone, the annual allowable cut (AAC) by blocks and gives the silvicultural practices needed to increase the stocking of high-value species. The total WC area is 23,322ha; Conservation Working Circle - with an area of 30,853ha is composed of 17 compartments of Strict Nature Reserve (SNR) and 14 Buffer

Zone (BZ) set apart for conservation, protection and development of biodiversity in MPA. Recreational Working Circles - two areas of Kaniyo-Pabidi and Busingiro were set aside and managed to promote ecotourism activities.

It presents the mitigation of environmental and social impacts - outlines the necessary mitigation measures against environmental, socio-economic and technical impacts that may crop up during the implementation of this FMP. Finally, it presents the monitoring and evaluation plan used to assess the progress of annual work plans and prescribed activities.

**Relevance:** The development of the VIC and the activities that will be carried out therein shall be carried out in accordance with the guidelines in the management plan. This will support the Proponent in exercising their mandate; "To manage Central Forest Reserves on a sustainable basis and to supply high-quality forestry-related products and services to government, local communities and the private sector."

## 2.7 IFPA-CD Environmental and Social Framework

The IFPA-CD Environmental and Social Management Framework (ESMF) highlights the socio-economic, legal, policy and institutional contexts of the project and sets a framework of the borrower's roles and responsibilities in addressing the assessed social and environmental risks and impacts.

The ESMF provides for environmental and social screening of all activities implemented under IFPA-CD. The screening aims at identifying potential negative social or environmental impacts of the project activities to avoid, minimize or offset those impacts wherever possible. The Environmental and Social Risk Assessment categorizes the proposed project as moderate-risk in consideration of its nature, location and the presence of vulnerable groups i.e. the Batwa.

The ESMF outlines the World Bank Environmental and Social Standards (ESS) and the relevant National legislation applicable to the Project policy, legal and administrative framework. It emphasizes the role of meaningful engagement with stakeholders to ensure project implementation and sustainability as guide by ESS 10 (Stakeholder Engagement and Information disclosure). Furthermore, the ESMF provides for the implementation of a functional GRM as an effective avenue for communities to express concerns and achieve remedies to ensure sustainability of the project.

A general assessment of potential project impacts and recommended mitigation measures are outlined in the ESMF. Anticipated impacts relevant to the Visitor Information Centre highlighted in the ESMF include sediment-laden run-off, noise generation, dust, localized erosion and gullyng. The framework outlines the project institutional implementation arrangement for managing Environmental and Social risks; and provides for monitoring and appraising the impact of project-related activities. The framework sets-out institutional measures that will support the management of environmental and social risks, including associated capacity-building and budgetary measures.

The ESMF is consolidated by the Vulnerable and Marginalized Groups Framework (VMGF), the Environmental and Social Commitment Plan (ESCP), Gender Action Plan (GAP), Occupation Health and Safety Measures (OHSM) and Stakeholder Engagement Framework and Plan (SEFP)

### 2.7.1 Environmental and Social Commitment Plan

The IFPA-CD Environmental and Social Commitment Plan (ESCP) sets out measures and actions required for the project to achieve compliance with the ESSs during all phases of the project lifecycle. The ESCP takes into account the findings of the environmental and social

assessment, the Bank's environmental and social due diligence, and the results of engagement with stakeholders. It provides an accurate summary of the material measures and actions required to avoid, minimize, reduce or otherwise mitigate the potential environmental and social risks and impacts of the project.

Implementation of the material measures and actions set out in this ESCP are monitored and reported by the implementing agency. The International Development Association (IDA) monitors and assesses progress and completion of the material measures and actions throughout implementation of the project.

The ESCP provides for its revision from time to time during Project implementation, to reflect adaptive management of project changes and unforeseen circumstances or in response to assessment of project performance conducted under the ESCP itself.

### **2.7.2 Gender Action Plan**

The Gender Action Plan was developed to address gender barriers associated with project implementation. It addresses disparities in institutional, legal, economic, social, and environmental/climate change contexts. The GAP recognizes the potential for tourism development to create gainful employment and support small-scale natural resource-based enterprises. The plan strives to higher inclusion and participation of women, boys, and girls as well as the historically marginalized communities of Batwa through specific activities across the three substantive components (including the proposed VIC). The GAP highlights crucial interventions that will:

- 1) promote and increase women's participation and consultation
- 2) contribute to increasing women's income
- 3) improve sharing of benefits
- 4) promote empowerment of women, and
- 5) improve creation of decent jobs from forest resources.

Specific actions, targets and responsible institutions outlined within the GAP to address gender barriers are given in table 2.1 below.

Table 2.1: Relevance of the IFPA – CD gender action plan to the proposed project

| No                                                         | Component or Subcomponent Intent                                                                                                                                                 | Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Component 1. Improved management of protected areas</b> |                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                            | <b>Subcomponent 1.1. Improvement of infrastructure and equipment for the management of forest PAs</b>                                                                            | <p>Promote gender inclusive participation, involving men, women, girls, and boys and particularly refugee and forest-dependent men, women, boys, and girls in (a) Boundary planning (including community consultations) and demarcation, fencing and walling to reduce human-wildlife conflicts, staff accommodation and ranger posts, and support for the NFMS and</p> <p>(b) Management of wildfires in</p> <ul style="list-style-type: none"> <li>(i) Training in fire management;</li> <li>(ii) Establishment and maintenance of fire breaks;</li> <li>(iii) Gender-inclusive community sensitization, response, and monitoring; and</li> <li>(iv) Introduction of appropriate modern approaches to help in efficient fire management practices at the landscape level</li> </ul> | <p>The proposed Visitor Information Centre shall promote women's economic empowerment and livelihood diversification through providing access to market for souvenirs and crafts, information, etc. for engaging in sustainable forest-based enterprises, such as beekeeping, ecotourism, handicrafts, etc. This shall help to increase women's income generation potential and economic security, as well as reduce their dependence on forest resources for subsistence.</p> <p>The VIC shall be a one-stop point where visitors arrive to get "appetite" to experience the central forest reserve. It will be an information point that shall showcase historical, cultural information among others.</p> <p>Host communities shall be involved in the VIC operation through local performances; sale of culture; support conservation; outsource the curio shop at the facility to the local communities inter alia.</p> |
|                                                            | <b>Subcomponent 1.2. Increasing the involvement of local communities in the management of forest and wildlife areas by increasing their access and benefits from these areas</b> | <ul style="list-style-type: none"> <li>(i) Promote awareness on participation of men and women including the marginalized and forest-dependent groups in planning and decision making in community forest management groups, committees, and associations.</li> <li>(ii) Support gender inclusiveness in the management plans for the share of forest area managed.</li> <li>(iii) Engage community leaders and particularly men as agents for change in promoting gender inclusion and equity in forest management and use.</li> </ul>                                                                                                                                                                                                                                               | <p>The Busingiro VIC shall utilise environmental education and interpretation programmes that will emotionally engage visitors and host communities, and connect them with the values of the central forest reserve.</p> <p>The proposed facility shall promote gender equality and diversity in the VIC staff and management, such as hiring, training, mentoring, promoting, etc. This shall help to create a gender-balanced and inclusive workforce that shall deliver</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| No                                                                                        | Component or Subcomponent Intent                | Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                           |                                                 | (iv) Identify and promote best practices in inclusive benefit sharing in the management and use of forests and wildlife resources.                                                                                                                                                                                                                                                                                                                                                                                                                                            | quality and effective services to the visitors and other project stakeholders including members of the host community.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Component 2. Increased revenues and jobs from forests and wildlife protected areas</b> |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                           | <b>Subcomponent 2.1. Investments in tourism</b> | <ul style="list-style-type: none"> <li>(i) Identify areas in the forest and wildlife habitats restoration value chain where women will benefit and actively participate in the activities—such as ecotourism, crafts, community accommodation and tour guiding, and so on.</li> <li>(ii) Support gender-inclusive capacity building for private timber plantation owners.</li> <li>(iii) Promote targeted communication/media products, and organize tourism-related trainings targeted for men and women entrepreneurs, strongly encouraging women participation.</li> </ul> | <p>The proposed VIC shall provide information and education on the value and importance of the central forest reserve, as well as the rules and regulations for visiting and using it. This shall raise awareness and understanding of the host communities about the conservation and management of the natural and cultural resources in the CFR as well as their role and responsibility in protecting them.</p> <p>The information center shall encourage and facilitate the participation and involvement of the host communities in the planning, implementation, and monitoring of the CFR activities, such as ecotourism, research, education, or community development. This shall ensure that the host communities have a voice and influence in the decision making and benefit sharing of the CFR, as well as access to the opportunities and resources that it offers.</p> <p>The VIC shall among others foster and strengthen the cooperation and collaboration among the host communities and other stakeholders of the CFR, such as government agencies, NGOs, private sector, researchers, etc. This shall build trust and mutual understanding among the different actors, as well as to address any conflicts or challenges that may arise from the protected area management</p> |

### 2.7.3 Occupation Health and Safety Measures

The IFPA-CD Occupational Health and Safety measures aim to provide guidelines to ensure that health and safety of the workers are adequately managed to prevent injuries and loss of lives during all phases of the project lifecycle. These Occupational Health and Safety Measures were developed as per the World Bank's Environmental and Social Standard ESS 2 on Labour and working conditions in addition to relevant National legal and regulatory framework, World Bank Group General Environmental Health and Safety Guidelines (WBG EHS Guidelines), International Labour Organisation (ILO) Conventions and other Good International Industry Practices.

### 2.7.4 Stakeholder Engagement Framework and Plan (SEFP)

The SEFP define processes and approaches to stakeholder consultations and disclosure of the IFPA-CD. Additionally, the guiding document also include information on the Grievance Redress Mechanism (GRM) to guide management of any grievances arising out of the project design and implementation.

The GRM is designed to act as recourse for situations in which, despite proactive stakeholder engagement, some stakeholders may have a concern about the project's potential impacts on them. Ultimately the purpose of the GRM is to find a win-win solution and in case the GRM fails, the parties to a grievance may resort to the formal courts at any stage of the grievance resolution process. It is intended to complement, not replace, formal legal channels for managing grievances (e.g. the court system, organizational audit mechanisms, etc.).

The IFPA-CD Grievance redress mechanism provides a credible and accessible means for Project Affected Persons (PAPs) and other stakeholders to pursue grievances, allowing the Project to address genuine issues in a timely manner and to minimize the chances of distractions to Project implementation and ownership from disgruntled PAPs/stakeholders. The GRM (grievance redress mechanism), contained herein (under section 7.6), is augmented by the World Bank's Grievance Redress Service

Grievances relating to any aspect of the IFPA-CD Project (including the proposed VICs) are dealt with through negotiations aimed at reaching consensus between the Project and the PAPs, following agreed principles and procedures. The IFPA-CD GRM was developed to

- 1) Transparent, fair and inclusive;
- 2) Legitimate and trustworthy;
- 3) Scaled to the risks and potential adverse social and environmental impacts of the project;
- 4) Publicized and accessible;
- 5) Tailored to all potentially affected persons and communities and other interested parties, irrespective of their literacy levels;
- 6) Free of cost for the PAPs and other stakeholders;
- 7) Safe and include the anonymity option, where feasible, and guarantee confidentiality in handling requests, if so, requested by the complaint;
- 8) Guided by engagement dialogue; and
- 9) Predictable in terms of process, timeliness, and access to information

## 2.8 Governance and administrative structure

The key administrative bodies/agencies that are responsible for the enforcement of the laws, policies and regulations. These institutions must be highly considered to maintain a harmonious working environment with compliance and sustainability of the environment. Table 2.2 describes the institutions and their role in the environment with respect to the project.

Table 2.2: Regulators for project implementation

| Institution                                             | Mandate and Role in the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Permits                      |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>National level</b>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |
| <b>National Environment Management Authority (NEMA)</b> | <p>NEMA is the principal agency in Uganda for the management of the environment, mandated to coordinate, monitor and supervise all activities in the field of the environment. In accordance with its functions stipulated under section 9, subsection (1) of the National Environment Act No.5 of 2019 the Authority reviews and make decisions on environmental and social impact assessments, environmental audits and other studies or reports submitted in accordance with the Act or any other applicable law</p> <p>NEMA works with District Environment Officers and local environment committees at local government levels who also undertake inspection, monitoring and compliance enforcement on its behalf.</p> <p>At the intergovernmental level, NEMA works with Environmental Liasion Units to ensure that they effectively incorporate environmental issues in their activities, policies and programs.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ESIA Certificate of Approval |
| <b>National Forestry Authority (NFA)</b>                | <p>The National Forestry Authority was established under section 52 of the National Forestry and Tree Planting Act of 2003. NFA has a mandate to improve the management of the Central Forest Reserves, expanding partnership arrangements, supplying forest and non-forest products and services and ensuring organizational stability.</p> <p>NFA, as the proponent, will also oversee the implementation and operation of the proposed VICs in the select central forest reserves.</p> <p>The functions of the Authority relevant to the proposed project include:</p> <ul style="list-style-type: none"> <li>(a) To develop and manage all central forest reserves</li> <li>(b) to promote innovative approaches for local community participation in the management of central forest reserves;</li> <li>(c) to prepare and implement management plans for central forest reserves and to prepare reports on the state of central forest reserves and such other reports as the Minister may require;</li> <li>(d) to establish procedures for the sustainable utilization of Uganda's forest resources by and for the benefit of the people of Uganda;</li> <li>(e) to co-operate and co-ordinate with the National Environment Management Authority and other lead agencies in the management of Uganda's forest resources;</li> <li>(f) in consultation with other lead agencies, to develop, or control the development of tourist facilities in central forest reserves;</li> <li>(g) to enter into an agreement or other arrangement with any person, for the provision of forestry services, subject to such charges as may be agreed upon; and</li> <li>(h) to carry out or commission research for the conservation, development and utilisation of forests, and the conservation of biological diversity and genetic resources.</li> </ul> <p><b><u>Roles under IFPA</u></b></p> <ol style="list-style-type: none"> <li>1. Implement forestry activities in and around central forest reserves</li> </ol> |                              |

| Institution                                    | Mandate and Role in the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Permits                                                    |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
|                                                | <ol style="list-style-type: none"> <li>Monitors and reports on activities undertakings</li> <li>NFA leads activities within CFRs.</li> <li>Responsible for the implementation of activities in components that fall under the NFA mandate.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                            |
| <b>Uganda Wildlife Authority (UWA)</b>         | <p>The Uganda Wildlife Authority was first established under the Uganda Wildlife Act, Cap. 200 and its mandate was extended under section 5 of the Wildlife Act 2019.</p> <p>UWA's mandate is to conserve, economically develop and sustainably manage the wildlife and protected areas of Uganda in partnership with neighbouring communities and other stakeholders for the benefit of the people of Uganda and the global community.</p> <p>The functions of the Authority relevant to the proposed project include;</p> <ol style="list-style-type: none"> <li>to ensure the sustainable management of wildlife conservation areas;</li> <li>to propose policies on wildlife management to the Minister;</li> <li>to implement Government policies on wildlife management;</li> <li>to establish and implement management plans for wildlife conservation areas and wildlife populations outside wildlife conservation areas;</li> <li>to develop and implement management and administrative policies for better implementation of national policies and laws relating to wildlife management in Uganda;</li> <li>in consultation with other lead agencies, to control, develop or licence the development of tourist facilities in wildlife-protected areas;</li> <li>to promote the conservation of biological diversity <i>ex-situ</i> and to contribute to the establishment of standards and regulations for that purpose;</li> <li>to disseminate information and promote public education and awareness of wildlife conservation and management;</li> <li>to charge fees for services it provides and for the licences, rights and any other permission that it may grant.</li> </ol> <p><b><u>Roles under IFPA</u></b></p> <ol style="list-style-type: none"> <li>Implement tourism and national parks and wildlife reserves activities</li> <li>Monitors and reports on activities undertakings</li> <li>Responsible for the implementation of activities in and around NPs and wildlife reserves in components that fall under the UWA mandate.</li> </ol> |                                                            |
| <b>Ministry of Water and Environment (MWE)</b> | <p>The Directorate of Water Development and Water Resources Management under the Ministry of Water and Environment are in charge of the management of water resources and the provision of water supply and sewerage services nationally. This is achieved through NWSC, UWSS and other small projects done by NGOs to operate and provide water and sewerage services in given areas on a sound, commercial and viable basis.</p> <p>They are also mandated to permit the construction of any water-based structures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Water abstraction (Surface and ground) and drilling permit |

| Institution                                                            | Mandate and Role in the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Permits                                           |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
|                                                                        | <p>The Ministry of Water and Environment also spearheads the IFPA-CD project under which the VICs are being established.</p> <p><b><u>Roles under IFPA</u></b></p> <ol style="list-style-type: none"> <li>1. Establish a Project Coordination Unit that will hire, amongst other positions a dedicated environmental and social specialist/officer who will support implementing agencies' efforts to address social and environmental risks.</li> <li>2. Assign and maintain the executive level and technical level of the Project</li> <li>3. Responsible for monitoring and reporting on the Project</li> <li>4. Provide high-level political support to FSSD to ensure multi-sectoral coordination.</li> <li>5. Lead Project Steering Committee and technical working groups</li> <li>6. Provides items for joint annual work program and budget approval</li> </ol>                                                                                                                                                                                                                        |                                                   |
| <p><b>Ministry of Tourism, Wildlife and Antiquities (MTWA)</b></p>     | <p>The Ministry of Tourism, Wildlife and Antiquities (MTWA) derives its mandate from Article 189 and the Sixth Schedule of the Constitution of the Republic of Uganda (1995), the Uganda Wildlife Act Cap 200 (and the 2019 amendment), Uganda Tourism Act, 2008, Museums and Monuments Act, 2023, Universities and Other Tertiary Institutions Act, 2006.</p> <p>The Ministry's mandate is to formulate and implement policies, strategies, plans and programs that promote tourism, wildlife and cultural heritage conservation for the socio-economic development and transformation of the country. The Ministry also oversees the Uganda Wildlife Authority and Uganda Tourism Board.</p> <p><b><u>Roles under IFPA</u></b></p> <ol style="list-style-type: none"> <li>1. A member of the Project Steering Committee</li> <li>2. Supports Project coordination and implementation</li> <li>3. Assign and maintain the executive level and technical level of the Project</li> <li>4. Provide high-level political support.</li> <li>5. Provides policy guidance and oversees UWA</li> </ol> |                                                   |
| <p><b>Ministry of Gender Labour and Social Development (MGLSD)</b></p> | <p>The Ministry through its Directorate of Labour (which is responsible for administering the Occupational Safety and Health Act, of 2006) carries out regular statutory inspections to ensure health and safety in workplaces.</p> <p>Its functions include: ensuring that employment policies are in line with the country's labour policies and guidelines; monitoring compensation for occupational injuries and diseases; monitoring compliance with labour standards; and ensuring that equipment and technologies brought into the country comply with the desired safety and health standards.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Certificate of Registration of a workplace</p> |
| <p><b>Uganda Tourism Board (UTB)</b></p>                               | <p>The Uganda Tourism Board (UTB) is the official Government destination market organization with the responsibility to promote and market Uganda as the preferred tourism destination in Africa. In this UTB works with other government agencies and private business operators in the tourism sector.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                   |

| Institution                       | Mandate and Role in the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Permits                                                                |
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|                                   | <p>The functions of the Uganda Tourism Board relevant to the project in accordance with the Tourism Act, 2008 include but are not limited to:</p> <ul style="list-style-type: none"> <li>(a) To formulate, in cooperation and consultation with the private sector and relevant entities, a marketing strategy for tourism in Uganda.</li> <li>(b) To implement the marketing strategy and to promote Uganda as an attractive and sustainable tourist destination.</li> <li>(c) To encourage and promote domestic tourism within Uganda.</li> <li>(d) To encourage investment in the tourism sector and wherever possible, to direct such investment to the less developed tourism areas.</li> <li>(e) To enforce, and monitor standards in the tourism sector;</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                        |
| <b>Uganda Police Force (UPF)</b>  | <p>The functions of the Uganda Police Force and their relevance to the project depend on the Department. The Department of Traffic and Road Safety is to enforce traffic and road safety laws to ensure safety for all road users.</p> <p>The Department of Police Fire Prevention and Rescue Services is charged with three major functions namely: prevention of fire through inspection, education, investigation and media campaigns on the rescue of life or any human being threatened by either natural or manmade hazards; fire extinguishment to protect and save property from destruction by fire; and active participation as a key player in national disaster management activities with other stakeholders.</p> <p>The function of the Department of Criminal Investigation and Crime Intelligence (CICI) is to ensure the effective detection, investigation and prevention of crime.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |
| <b>Local level</b>                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                        |
| <b>District Local Governments</b> | <p>District Local Governments are defined as one of the lead agencies under the National Environment mandated to establish a District Environment Committee that coordinates with NEMA on all issues relating to environmental management. The District Environment Officer (DEO) in particular plays an active role in the monitoring of environmental aspects and liaises with the NEMA on all matters relating to the environment.</p> <p>The District Local Governments are also responsible for planning the development of functional infrastructure and administration of land management within their jurisdictions. They enforce planning regulations (e.g., approval of build and structural plans) and they are also the lead agency for the initiation and implementation of the project ESMP.</p> <p>District Local Governments are also mandated to protect and conserve natural resources within their jurisdictions in accordance with National Laws and collaboration with lead agencies such as NFA, UWA and MWE. DLGs also participate in tourism promotion and conservation through the District Tourism Officers, Forestry Officers and Wildlife Officers.</p> <p><b><u>Roles under IFPA</u></b></p> <ol style="list-style-type: none"> <li>1. Oversight implementation of Project activities in the district</li> </ol> | <p>Architectural and structural approval</p> <p>Occupation permits</p> |



| Institution                                                                      | Mandate and Role in the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Permits |
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|                                                                                  | <ol style="list-style-type: none"> <li>2. Supporting in supervision, advisory, coordination and planning of Project relevant activities</li> <li>3. Liaise with the MWE and MTWA and agencies on Project Implementation</li> <li>4. Providing technical personnel for review and assessing compliance, learning lessons, and improving the future of the Project</li> <li>5. Handle issues and supervise issues of integration/mainstreaming of gender, ethnic minority and marginalized group involvement in all Project activities</li> <li>6. Participate in the appraisal of Project activities</li> </ol>                                                                                                                                                                                                                                              |         |
| <b>Non-Government Organisations</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |
| <b>Cultural institutions</b>                                                     | <p>Cultural institutions play vital roles in tourism development particularly through music, dance and other performing arts; preserving and disseminating historical information; and attaching a sense of reverence to their heritage sites.</p> <p>Cultural institutions also give people a sense of identity and galvanize communities to embrace and participate in developmental projects initiated by Government, NGOs and the cultural institutions themselves.</p> <p>Furthermore, cultural institutions have a legacy of conserving natural resources within their territories. This is consolidated with their extensive knowledge of the plant and animal species with regard to their medicinal and environmental values.</p> <p>The relevant cultural institutions within the protected areas are detailed in Chapter five of this report</p> |         |
| <b>Civil society organizations (CSO) and Community-Based Organizations (CBO)</b> | <p>These play crucial roles in supporting conservation programs in and outside the CFR including research, community development, Training communities on conservation programs, Integrating culture into conservation, tree planting and maintenance of the boundaries, and Support patrol operations among others</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |

## 2.9 World Bank Environmental and Social Standards

The World Bank Environmental and Social Framework (ESF) was developed in 2016 and became effective in 2018, replacing the Safeguard Policies. It applies to all new Investment Policy Financing projects initiated after October 1<sup>st</sup> 2018. The ESF addresses critical areas across the entire project life cycle (i.e., design, implementation and operation); these include stakeholder engagement, community health and safety, non-discrimination, climate change mitigation and adaptation, biodiversity among others (World Bank, 2017).

The ESF is made up of ten Environmental and Social Standards (ESSs) aimed at supporting the Borrowers' environmental and social risk management. The ESF employs a risk-based approach with emphasis on responsiveness to changes in project circumstances through adaptive risk management and stakeholder engagement. A brief summary of the ten ESSs is given below:

Table 2.3: Environmental and social standards

| No    | ESS                                                                                                          | Objective                                                                                                                                                                                                                                                                                                                                                 | Was it triggered? |    | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Requirements / EHSG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 2.9.1 | Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts | ESS1 sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).  | ✓                 |    | <p>The development of VICs in select protected areas is categorised as a moderate risk project and is subject to an Environmental Assessment in accordance with ESS1. Furthermore, the development of the VIC is a subproject under the IFPA project and must therefore be implemented in accordance with the relevant national laws and any requirements of the ESSs that the Bank deems relevant to the subproject.</p> <p>The Environmental and Social Assessment conducted in conformity to ESS1 must take a risk-based approach consistent with the Good International Industry Practice (GIIP) and the Environmental, Health and safety Guidelines.</p> | <p>The Borrower has assessed, managed and shall monitor the environmental and social risks and impacts of the project throughout the project life cycle so as to meet the requirements of the ESSs in a manner and within a timeframe acceptable to the Bank</p> <p>The Borrower has:</p> <ul style="list-style-type: none"> <li>(a) Conducted an environmental and social assessment of the proposed project, including stakeholder engagement;</li> <li>(b) Undertaken stakeholder engagement and disclose appropriate information in accordance with ESS10;</li> <li>(c) Developed an ESCP, and implement all measures and actions set out in the legal agreement including the ESCP; and</li> <li>(d) shall conduct monitoring and reporting on the environmental and social performance of the project against the ESSs.</li> </ul> <p>If the project comprises or includes existing facilities or existing activities that do not meet the requirements of the ESSs at the time of Board approval, the Borrower will adopt and implement measures satisfactory to the Bank so that specific aspects of such facilities and activities meet the requirements of the ESSs in accordance with the ESCP.</p> <p>The project will apply the relevant requirements of the Environmental Health and Safety Guidelines (EHSGs). When host country requirements differ from the levels and measures presented in the EHSGs, the Borrower will be required to achieve or implement whichever is more stringent. If less stringent levels or measures than those provided in the EHSGs are appropriate in view of the Borrower's limited technical or financial constraints or other specific project circumstances, the Borrower will provide full and detailed justification for any proposed alternatives through the environmental and social assessment. This justification must demonstrate, to the satisfaction of the Bank, that the choice of any alternative performance level is consistent with the objectives of the ESSs and the applicable EHSGs, and is unlikely to result in any significant environmental or social harm</p> |
| 2.9.1 | Environmental and Social Standard 2: Labour and Working Conditions                                           | ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. | ✓                 |    | <p>Labour relations and worker welfare during the construction and operation of the VIC should follow the guidance given in ESS2 in order to</p> <ul style="list-style-type: none"> <li>• promote safety and health at work;</li> <li>• promote fair treatment, non-discrimination and equal opportunity of project workers</li> <li>• protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in</li> </ul>                                                                                                                                                                                | <p>9. The Borrower will develop and implement written labour management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS. The procedures will address the way in which this ESS will apply to different categories of project workers including direct workers, and the way in which the Borrower will</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| No | ESS | Objective | Was it triggered? |    | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|    |     |           |                   |    | <p>accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.</p> <ul style="list-style-type: none"> <li>prevent the use of all forms of forced labour and child labour.</li> <li>support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.</li> <li>provide project workers with accessible means to raise workplace concerns.</li> </ul> <p>ESS2 outlines organizational measures that must be adopted by the developer to address areas of working condition and worker relationships, protecting the work force, grievance redress and occupational health and safety.</p> <p>The ESS2 covers labour relations and working conditions for direct employees, contracted and community workers employed on full-time, part-time, temporary, seasonal and migrant workers.</p> | <p>require third parties to manage their workers in accordance with paragraphs 31–33</p> <p>10. Project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labour and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of this ESS. This information and documentation will be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur.</p> <p>11. Project workers will be paid on a regular basis as required by national law and labour management procedures. Deductions from payment of wages will only be made as allowed by national law or the labour management procedures, and project workers will be informed of the conditions under which such deductions will be made. Project workers will be provided with adequate periods of rest per week, annual holiday and sick, maternity and family leave, as required by national law and labour management procedures.</p> <p>13. Decisions relating to the employment or treatment of project workers will not be made on the basis of personal characteristics unrelated to inherent job requirements. The employment of project workers will be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices. The labour management procedures will set out measures to prevent and address harassment, intimidation and/or exploitation. Where national law is inconsistent with this paragraph, the project will seek to carry out project activities in a manner that is consistent with the requirements of this paragraph to the extent possible</p> <p>14. Special measures of protection and assistance to remedy discrimination or selection for a particular job based on the inherent requirements of the job or the objectives of the project 12 will not be deemed as discrimination, provided they are consistent with national law</p> <p>15. The Borrower will provide appropriate measures of protection and assistance to address the vulnerabilities of project workers, including specific groups of workers, such as women, people with disabilities, migrant workers and children (of working age in accordance with this ESS). Such measures may be necessary only for specific periods of time, depending on the circumstances of the project worker and the nature of the vulnerability.</p> |

| No | ESS | Objective | Was it triggered? |    | Applicability | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|    |     |           |                   |    |               | <p>17. A child under the minimum age established in accordance with this paragraph will not be employed or engaged in connection with the project. The labour management procedures will specify the minimum age for employment or engagement in connection with the project, which will be the age of 14 unless national law specifies a higher age.</p> <p>20. Forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty, will not be used in connection with the project. This prohibition covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour, or similar labour-contracting arrangements. No trafficked persons will be employed in connection with the project.</p> <p>21. A grievance mechanism will be provided for all direct workers and contracted workers (and, where relevant, their organizations) to raise workplace concerns. Such workers will be informed of the grievance mechanism at the time of recruitment and the measures put in place to protect them against any reprisal for its use. Measures will be put in place to make the grievance mechanism easily accessible to all such project workers.</p> <p>22. The grievance mechanism will be proportionate to the nature and scale and the potential risks and impacts of the project. It will be designed to address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned in a language they understand, without any retribution, and will operate in an independent and objective manner. The grievance mechanism may utilize existing grievance mechanisms, providing that they are properly designed and implemented, address concerns promptly, and are readily accessible to such project workers. Existing grievance mechanisms may be supplemented as needed with project-specific arrangements.</p> <p>23. The grievance mechanism will not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.</p> <p>24. Measures relating to occupational health and safety will be applied to the project. The OHS measures will include the requirements of this Section, and will take into account the General EHSs and, as appropriate, the industry-specific EHSs and other GIIP. The OHS measures applying to the project will be set out in the legal agreement and the ESCP</p> <p>25. The OHS measures will be designed and implemented to address: (a) identification of potential hazards to project workers, particularly those that may be life threatening; (b) provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (c) training of project workers and maintenance of training records; (d) documentation and reporting of occupational accidents, diseases and incidents; (e) emergency</p> |

| No    | ESS                                                                                              | Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Was it triggered? |    | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| 2.9.3 | Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management | ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and | ✓                 |    | <p>The ESS3 sets out Borrower requirements to address resource efficiency and pollution prevention and management throughout the all stages of project development. The standard aims to:</p> <ul style="list-style-type: none"> <li>• promote the sustainable use of resources, including energy, water and raw materials;</li> <li>• avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities;</li> <li>• avoid or minimize project-related emissions of short and long-lived climate pollutants;</li> </ul> | <p>4. The Borrower will consider ambient conditions and apply technically and financially feasible resource efficiency and pollution prevention measures in accordance with the mitigation hierarchy. The measures will be proportionate to the risks and impacts associated with the project and consistent with GIIP, in the first instance the EHSs.</p> <p>5. The Borrower will implement technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources. Such measures will integrate the principles of cleaner production into product design and production processes to conserve raw materials, energy and water, as well as other</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



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|    |     | practices have become more accessible and achievable. |                   |    | <ul style="list-style-type: none"> <li>avoid or minimize generation of hazardous and non-hazardous waste;</li> </ul> <p>The standard compels the developer to adopt technically and financially feasible measures to prevent and manage pollution in accordance with the mitigation hierarchy. Measures adopted must be proportionate to the risks and impacts associated with the project.</p> <p>The standard outlines guidelines for sustainable energy and water use; management of waste, chemicals, hazardous materials and air pollutants.</p> | <p>resources. Where benchmarking data are available, the Borrower will make a comparison to establish the relative level of efficiency.</p> <p>6. The efficient use of energy is an important way in which the Borrower can contribute to sustainable development. When the project is a potentially significant user of energy, in addition to applying the resource efficiency requirements of this ESS, the Borrower will adopt measures specified in the EHSs to optimize energy usage, to the extent technically and financially feasible</p> <p>9. The Borrower will assess, as part of the environmental and social assessment, the potential cumulative impacts of water use upon communities, other users and the environment and will identify and implement appropriate mitigation measures.</p> <p>11. The Borrower will avoid the release of pollutants or, when avoidance is not feasible, minimize and control the concentration and mass flow of their release using the performance levels and measures specified in national law or the EHSs, whichever is most stringent. This applies to the release of pollutants to air, water and land due to routine, non-routine, and accidental circumstances, and with the potential for local, regional, and transboundary impacts.</p> <p>13. To address potential adverse project impacts on human health and the environment, the Borrower will consider relevant factors, including, for example: (a) existing ambient conditions; (b) in areas already impacted by pollution, the remaining assimilative capacity of the environment; (c) existing and future land use; (d) the project's proximity to areas of importance to biodiversity; (e) the potential for cumulative impacts with uncertain and/or irreversible consequences; and (f) impacts of climate change.</p> <p>15. In addition to the resource efficiency measures described above, the Borrower will consider alternatives and implement technically and financially feasible and cost-effective options to avoid or minimize project-related air emissions during the design, construction and operation of the project.</p> <p>16. As part of the environmental and social assessment of the project, the Borrower will characterize and estimate sources of air pollution related to the project. This will include an estimate of gross GHG emissions resulting from the project, providing that such estimation is technically and financially feasible. Where the Borrower does not have the capacity to develop the estimate of GHG emissions, the Bank will provide assistance to the Borrower. For projects that have diverse and small sources of emissions (for example, community-driven development projects) or where emissions are not likely to be significant (for example, projects in education and social protection), GHG estimations will not be required.</p> |



| No    | ESS                                                              | Objective                                                                                                                                                                                                                                                                                                    | Was it triggered? |    | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Requirements / EHSg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|       |                                                                  |                                                                                                                                                                                                                                                                                                              |                   |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>17. The Borrower will avoid the generation of hazardous and non-hazardous waste. Where waste generation cannot be avoided, the Borrower will minimize the generation of waste, and reuse, recycle and recover waste in a manner that is safe for human health and the environment. Where waste cannot be reused, recycled or recovered, the Borrower will treat, destroy, or dispose of it in an environmentally sound and safe manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material.</p> <p>18. If the generated waste is considered hazardous, the Borrower will comply with existing requirements for management (including storage, transportation and disposal) of hazardous wastes including national legislation and applicable international conventions, including those relating to transboundary movement. Where such requirements are absent, the Borrower will adopt GIIP alternatives for its environmentally sound and safe management and disposal. When hazardous waste management is conducted by third parties, the Borrower will use contractors that are reputable and legitimate enterprises licensed by the relevant government regulatory agencies and, with respect to transportation and disposal, obtain chain of custody documentation to the final destination. The Borrower will ascertain whether licensed disposal sites are being operated to acceptable standards and where they are, the Borrower will use these sites. Where licensed sites are not being operated to acceptable standards, the Borrower will minimize waste sent to such sites and consider alternative disposal options, including the possibility of developing its own recovery or disposal facilities at the project site or elsewhere.</p> <p>19. The Borrower will avoid the manufacture, trade and use of chemicals and hazardous materials subject to international bans, restrictions or phase outs unless for an acceptable purpose as defined by the conventions or protocols or if an exemption has been obtained by the Borrower, consistent with Borrower government commitments under the applicable international agreements</p> <p>20. The Borrower will minimize and control the release and use of hazardous materials. The production, transportation, handling, storage, and use of hazardous materials for project activities will be assessed through the environmental and social assessment. The Borrower will consider less hazardous substitutes where hazardous materials are intended to be used in manufacturing processes or other operations.</p> |
| 2.9.4 | Environmental and Social Standard 4: Community Health and Safety | ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. | ✓                 |    | <p>ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of developers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. The standard aims to;</p> <ul style="list-style-type: none"> <li>anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances.</li> </ul> | <p>5. The Borrower will evaluate the risks and impacts of the project on the health and safety of the affected communities during the project life cycle, including those who, because of their particular circumstances, may be vulnerable. The Borrower will identify risks and impacts and propose mitigation measures in accordance with the mitigation hierarchy.</p> <p>6. The Borrower will design, construct, operate, and decommission the structural elements of the project in accordance with national legal requirements, the EHSgS and other GIIP, taking into consideration safety</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|    |     |           |                   |    | <ul style="list-style-type: none"> <li>• promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.</li> <li>• avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.</li> <li>• have in place effective measures to address emergency events.</li> <li>• ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.</li> </ul> <p>ESS4 outlines considerations that the developer must make to address health and safety risks to the community including traffic and road safety, safety of services, ecosystem services, exposure to health issues, emergency preparedness and response, management of hazardous materials, infrastructure and equipment design and safety</p> | <p>risks to third parties and affected communities. Structural elements of a project will be designed and constructed by competent professionals, and certified or approved by competent authorities or professionals. Structural design will take into account climate change considerations, as appropriate.</p> <p>9. Where the project involves provision of services to communities, the Borrower will establish and implement appropriate quality management systems to anticipate and minimize risks and impacts that such services may have on community health and safety. In such circumstances, the Borrower will also apply the concept of universal access, where technically and financially feasible.</p> <p>10. The Borrower will identify, evaluate and monitor the potential traffic and road safety risks to workers, affected communities and road users throughout the project life cycle and, where appropriate, will develop measures and plans to address them. The Borrower will incorporate technically and financially feasible road safety measures into the project design to prevent and mitigate potential road safety risks to road users and affected communities.</p> <p>14. The project's direct impacts on ecosystem services may result in adverse health and safety risks to and impacts on affected communities. With respect to this ESS, ecosystem services are limited to provisioning and regulating services as defined in ESS1. Where appropriate and feasible, the Borrower will identify the project's potential risks and impacts on ecosystem services that may be exacerbated by climate change. Adverse impacts will be avoided, and if they are unavoidable, the Borrower will implement appropriate mitigation measures.</p> <p>15. The Borrower will avoid or minimize the potential for community exposure to water-borne, water based, water-related, and vector-borne diseases, and communicable and non-communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. Where specific diseases are endemic in communities in the project area, the Borrower is encouraged to explore opportunities during the project life cycle to improve environmental conditions that could help minimize their incidence.</p> <p>16. The Borrower will take measures to avoid or minimize transmission of communicable diseases that may be associated with the influx of temporary or permanent project labour.</p> <p>19. The Borrower will identify and implement measures to address emergency events. An emergency event is an unanticipated incident, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may occur for a variety of different reasons, including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning. The measures will be designed to address the emergency event</p> |

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| 2.9.5 | Environmental and Social Standard 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement          | ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), 3 or both. The term “involuntary resettlement” refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement. |                   | ×  | All the proposed VICs are sited within the subject protected areas, under the jurisdiction of the Authority; the developer neither needs to acquire land nor will any persons be resettled as a result of project related activities, involuntarily or otherwise.                                                                                                                                                                                                                                               | ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement was not triggered by the proposed VIC project since the project does not involve land acquisition or resettlement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2.9.6 | Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources | ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem                                                                                                                                                                                                  | ✓                 |    | <p>In consideration of the highly sensitive locations within which the VICS are proposed and the potential impacts of project related activities on wildlife species, the developer must observe the guidelines outlined under ESS6 to</p> <ul style="list-style-type: none"> <li>• protect and conserve biodiversity and habitats.</li> <li>• apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.</li> </ul> | 8. The environmental and social assessment as set out in ESS1 will consider direct, indirect and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional or national level and will also take into account the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|    |     | services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. |                   |    | <ul style="list-style-type: none"> <li>• promote the sustainable management of living natural resources.</li> <li>• support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.</li> </ul> <p>The ESS outlines requirements that the developer must observe in consideration of direct, indirect and cumulative impacts on habitats and the biodiversity they support. The ESS also delineates the different kinds of habitats and the hierarchy of mitigation to be observed in accordance with ESS1. The standard further gives guidance on the management of invasive species and living natural resources.</p> | <p>differing values attached to biodiversity and habitats by project-affected parties and other interested parties.</p> <p>9. The Borrower will avoid adverse impacts on biodiversity and habitats. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 and with the requirements of this ESS. The Borrower will ensure that competent biodiversity expertise is utilized to conduct the environmental and social assessment and the verification of the effectiveness and feasibility of mitigation measures. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will develop and implement a Biodiversity Management Plan.</p> <p>10. Through the environmental and social assessment, the Borrower will identify the potential project - related risks to and impacts on habitats and the biodiversity that they support. In accordance with the mitigation hierarchy, the Borrower will make the initial assessment of project risks and impacts without taking into account the possibility of biodiversity offsets. The assessment undertaken by the Borrower will include identification of the types of habitats potentially affected and consideration of potential risks to and impacts on the ecological function of the habitats. The assessment will encompass any areas of potential biodiversity importance that may be affected by the project, whether or not they are protected under national law. The extent of the assessment will be proportionate to the risks and impacts, based on their likelihood, significance and severity, and will reflect the concerns of project-affected parties and other interested parties.</p> <p>11. The Borrower's assessment will include characterization of baseline conditions to a degree that is proportional and specific to the anticipated risk and significance of impacts. In planning and undertaking environmental and social assessment related to the biodiversity baseline, the Borrower will follow relevant GIIP utilizing desktop review, consultation with experts, and field-based approaches, as appropriate. Where further investigations are needed to evaluate the significance of potential impacts, the Borrower will carry out additional investigation and/or monitoring before undertaking any project-related activities, and before taking irrevocable decisions about project design that could cause significant adverse impacts to potentially affected habitats and the biodiversity that they support.</p> <p>12. Where the environmental and social assessment has identified potential risks and impacts on biodiversity or habitats, the Borrower will manage those risks and impacts in accordance with the mitigation hierarchy and GIIP. The Borrower will adopt a precautionary approach and apply adaptive management practices in which the implementation of mitigation and management measures are responsive to changing conditions and the results of project monitoring.</p> |

| No | ESS | Objective | Was it triggered? |    | Applicability | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|    |     |           |                   |    |               | <p>26. Where the project occurs within or has the potential to adversely affect an area that is legally protected, designated for protection, or regionally or internationally recognized, the Borrower will ensure that any activities undertaken are consistent with the area's legal protection status and management objectives. The Borrower will also identify and assess potential project-related adverse impacts and apply the mitigation hierarchy so as to prevent or mitigate adverse impacts from projects that could compromise the integrity, conservation objectives or biodiversity importance of such an area.</p> <p>27. The Borrower will meet the requirements of paragraphs 13 through 25 of this ESS, as applicable. In addition, the Borrower will:</p> <p>(a) Demonstrate that the proposed development in such areas is legally permitted;</p> <p>(b) Act in a manner consistent with any government recognized management plans for such areas;</p> <p>(c) Consult and involve protected area sponsors and managers, project-affected parties including Indigenous Peoples, and other interested parties on planning, designing, implementing, monitoring, and evaluating the proposed project, as appropriate; and</p> <p>(d) Implement additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area.</p> <p>28. Intentional or accidental introduction of alien, or non-native, species of flora and fauna into areas where they are not normally found can be a significant threat to biodiversity, since some alien species can become invasive, spreading rapidly and destroying or out-competing native species.</p> <p>29. The Borrower will not intentionally introduce any new alien species (not currently established in the country or region of the project) unless this is carried out in accordance with the existing regulatory framework for such introduction. Notwithstanding the above, the Borrower will not deliberately introduce any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework. All introductions of alien species will be subject to a risk assessment (as part of the Borrower's environmental and social assessment) to determine the potential for invasive behaviour. The Borrower will implement measures to avoid the potential for accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.</p> <p>30. Where alien species are already established in the country or region of the proposed project, the Borrower will exercise diligence in not spreading them into areas in which they have not already become established. Where feasible, the Borrower will take measures to eradicate such species from the natural habitats over which the Borrower has management control.</p> |



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| 2.9.7 | Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities | <p>This ESS applies to a distinct social and cultural group identified in accordance with paragraphs 8 and 9 of this ESS. The terminology used for such groups varies from country to country, and often reflects national considerations. ESS7 uses the term “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities,”<sup>1</sup> recognizing that groups identified under paragraphs 8 and 9 may be referred to in different countries by different terms. Such terms include “Sub-Saharan African historically underserved traditional local communities,” “indigenous ethnic minorities,” “aboriginals,” “hill tribes,” “vulnerable and marginalized groups,” “minority nationalities,” “scheduled tribes,” “first nations” or “tribal groups.” ESS7 applies to all such groups, providing they meet the criteria set out in paragraphs 8 and 9. For the purposes of this ESS, the term “Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities” includes all such alternative terminology.</p> <p>In Uganda, the Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities are referred to as vulnerable and marginalized groups (VMGs).</p> | ✓                 |    | <p>ESS7 aims to ensure projects enhance opportunities for VMGs to participate in and benefit from, the development process in ways that do not threaten their unique cultural identities and well-being. The standard aims to</p> <ul style="list-style-type: none"> <li>• ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource based livelihoods of Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities.</li> <li>• avoid adverse impacts of projects on Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.</li> <li>• promote sustainable development benefits and opportunities for VMGs in a manner that is accessible, culturally appropriate and inclusive.</li> <li>• improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with the VMGs affected by a project throughout the project’s life cycle.</li> <li>• obtain the Free, Prior, and Informed Consent (FPIC) of affected VMGs in the three circumstances described in this ESS.</li> <li>• recognize, respect and preserve the culture, knowledge, and practices of VMGs, and to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.</li> </ul> <p>With respect to the criteria outlined in paragraph 7 of ESS7, “This ESS applies whenever Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities (as they may be referred to in the national context) are present in, or have collective attachment to a proposed project area, as determined during the environmental and social assessment...”; the local cultural groups are subject to the provisions of this standard.</p> <p>Stakeholder consultation with the host communities conducted during the study revealed that the development of the VIC does not trigger the requirements of Free, Prior, and Informed Consent (FPIC).</p> <p>The ESS emphasizes the importance of stakeholder engagement and outlines developer requirements for consultation, project disclosure, impact identification and mitigation.</p> | <p>11. A key purpose of this ESS is to ensure that vulnerable and marginalized groups present in, or with collective attachment to, the project area are fully consulted about, and have opportunities to actively participate in, project design and the determination of project implementation arrangements. The scope and scale of consultation, as well as subsequent project planning and documentation processes, will be proportionate to the scope and scale of potential project risks and impacts as they may affect VMGs.</p> <p>12. The Borrower will assess the nature and degree of the expected direct and indirect economic, social, cultural (including cultural heritage, and environmental impacts on VMGs who are present in, or have collective attachment to, the project area. The Borrower will prepare a consultation strategy and identify the means by which affected VMGs will participate in project design and implementation. Subsequently, effective project design and documentation will be developed as set out below.</p> <p>13. The Borrower’s proposed measures and actions will be developed in consultation with the affected VMGs and contained in a time-bound plan, such as a VMGs plan. The scope and scale of the plan will be proportionate to the potential risks and impacts of the project. The format and title of the plan will be adjusted as appropriate to the project or country context, and will reflect any alternative terminology for the Indigenous Peoples, as referred to in paragraph 6.</p> <p>18. Adverse impacts on VMGs will be avoided where possible. Where alternatives have been explored and adverse impacts are unavoidable, the Borrower will minimize and/or compensate for these impacts in a culturally appropriate manner proportionate to the nature and scale of such impacts and the form and degree of vulnerability of the affected Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities.</p> <p>20. The Borrower and affected Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities will identify mitigation measures in alignment with the mitigation hierarchy described in ESS1 as well as opportunities for culturally appropriate and sustainable development benefits. The scope of assessment and mitigation will include cultural impacts as well as physical impacts. The Borrower will ensure the timely delivery of agreed measures to affected Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities.</p> <p>32. Where a project may significantly impact cultural heritage that is material to the identity and/ or cultural, ceremonial, or spiritual aspects of the affected VMGs’ lives, priority will be given to the avoidance of such impacts. Where significant project impacts are unavoidable, the Borrower will obtain the FPIC of affected VMGs.</p> <p>33. Where a project proposes to use the cultural heritage of VMGs for commercial purposes, the Borrower will inform the affected Indigenous</p> |



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| 2.9.8 | Environmental and Social Standard 8: Cultural Heritage | ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle. | ✓                 |    | <p>ESS8 sets out the provisions on risks and impacts to cultural heritage from project activities. ESS8 is in tandem with ESS7 that sets out additional requirements for cultural heritage in the context of Indigenous Peoples; ESS6 recognizes the social and cultural values of biodiversity; and ESS10 that outlines the Provisions on Stakeholder Engagement and Information Disclosure</p> <p>Heritage is defined in ESS8 as tangible and intangible heritage, which may be recognized and valued at a local, regional, national or global level. ESS8 aims to:</p> <ul style="list-style-type: none"> <li>• protect cultural heritage from the adverse impacts of project activities and support its preservation.</li> <li>• address cultural heritage as an integral aspect of sustainable development.</li> <li>• promote meaningful consultation with stakeholders regarding cultural heritage.</li> <li>• promote the equitable sharing of benefits from the use of cultural heritage.</li> </ul> <p>ESS8 outlines the provisions for archaeological sites and materials, built heritage, movable cultural heritage and commercial use of cultural heritage.</p> | <p>8. The environmental and social assessment, as set out in ESS1, will consider direct, indirect and cumulative project-specific risks and impacts on cultural heritage. Through the environmental and social assessment, the Borrower will determine the potential risks and impacts of the proposed activities of the project on cultural heritage.</p> <p>9. The Borrower will avoid impacts on cultural heritage. When avoidance of impacts is not possible, the Borrower will identify and implement measures to address impacts on cultural heritage in accordance with the mitigation hierarchy. Where appropriate, the Borrower will develop a Cultural Heritage Management Plan.</p> <p>10. The Borrower will implement globally recognized practices for field-based study, documentation and protection of cultural heritage in connection with the project, including by contractors and other third parties.</p> <p>11. A chance finds procedure is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. It will be included in all contracts relating to construction of the project, including excavations, demolition, movement of earth, flooding or other changes in the physical environment. The chance finds procedure will set out how chance finds associated with the project will be managed. The procedure will include a requirement to notify relevant authorities of found objects or sites by cultural heritage experts; to fence-off the area of finds or sites to avoid further disturbance; to conduct an assessment of found objects or sites by cultural heritage experts; to identify and implement actions consistent with the requirements of this ESS and national law; and to train project personnel and project workers on chance find procedures.</p> <p>12. Where necessary due to the potential risks and impacts of a project, the environmental and social assessment will involve the participation of cultural heritage experts. If the environmental and social assessment</p> |

| No | ESS | Objective | Was it triggered? |    | Applicability | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|    |     |           |                   |    |               | <p>determines that the project may, at any time during the project life cycle, have significant potential risks and impacts on cultural heritage, the Borrower will engage cultural heritage experts to assist in the identification, valuation assessment and protection of cultural heritage.</p> <p>13. The Borrower will identify, in accordance with ESS10, stakeholders that are relevant for the cultural heritage that is known to exist or is likely to be encountered during the project life cycle. Stakeholders will include, as relevant: (a) project affected parties, including individuals and communities within the country who use or have used the cultural heritage within living memory; and (b) other interested parties, which may include national or local regulatory authorities that are entrusted with the protection of cultural heritage and nongovernmental organizations and cultural heritage experts, including national and international cultural heritage organizations.</p> <p>14. The Borrower will carry out meaningful consultations with stakeholders in accordance with ESS10 in order to identify cultural heritage that may be affected by the potential project; consider the significance of the cultural heritage affected by the project; assess the potential risks and impacts; and explore avoidance and mitigation options.</p> <p>16. Where the Borrower's project site contains cultural heritage or prevents access to previously accessible cultural heritage sites, the Borrower will, based on consultations with users of the site, allow continued access to the cultural site, or will provide an alternative access route, subject to overriding health, safety and security considerations.</p> <p>17. As part of the environmental and social assessment, the Borrower will determine the presence of all listed legally protected cultural heritage areas affected by the project. If the proposed project will be located within a legally protected area or a legally defined buffer zone, the Borrower will: (a) Comply with local, national, regional or international cultural heritage regulations and the protected area management plans; (b) Consult the protected area sponsors and managers, project-affected parties (including individuals and communities) and other interested parties on the proposed project; and (c) Implement additional programs, as appropriate, to promote and enhance the conservation aims of the protected area.</p> <p>24. Natural features may be imbued with cultural heritage significance. Examples include sacred hills, mountains, landscapes, streams, rivers, waterfalls, caves and rocks; sacred trees or plants, groves and forests; carvings or paintings on exposed rock faces or in caves; and paleontological deposits of early human, animal or fossilized remains. The significance of such heritage may be localized in small community groups or minority populations.</p> <p>25. The Borrower will identify, through research and consultation with project-affected parties (including individuals and communities), natural</p> |

| No     | ESS                                                                                      | Objective                                                                                                                                                                                                                                                                                                                                                                                          | Was it triggered? |    | Applicability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| 2.9.9  | Environmental and Social Standard 9: Financial Intermediaries                            | ESS9 recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction. The Bank is committed to supporting sustainable financial sector development and enhancing the role of domestic capital and financial markets.                                                                                      |                   | ×  | ESS9 has not been triggered by the development of the VIC since the project does not involve Financial Intermediaries at any stage of development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ESS9 has not been triggered by the development of the VIC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2.9.10 | Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure. | This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. | ✓                 |    | <p>ESS 10 applies in tandem with ESS1; ESS2 regarding engagement with workers; ESS5 and ESS8 regarding involuntary resettlement, Indigenous Peoples or cultural heritage; and ESS4 and ESS2 regarding special provisions on emergency preparedness and response</p> <p>ESS 10 aims to:</p> <ul style="list-style-type: none"> <li>establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.</li> <li>assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.</li> <li>promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.</li> <li>ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.</li> </ul> | <p>6. Borrowers will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts.</p> <p>7. Borrowers will engage in meaningful consultations with all stakeholders. Borrowers will provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation.</p> <p>8. The process of stakeholder engagement will involve the following, as set out in further detail in this ESS: (i) stakeholder identification and analysis; (ii) planning how the engagement with stakeholders will take place; (iii) disclosure of information; (iv) consultation with stakeholders; (v) addressing and responding to grievances; and (vi) reporting to stakeholders.</p> <p>9. The Borrower will maintain, and disclose as part of the environmental and social assessment, a documented record of stakeholder engagement, including a description of the stakeholders consulted, a summary of the feedback received and a brief explanation of how the feedback was taken into account, or the reasons why it was not.</p> |

| No | ESS | Objective | Was it triggered? |    | Applicability | Requirements / EHSg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|    |     |           |                   |    |               | <p>10. The Borrower will identify the different stakeholders, both project-affected parties and other interested parties. As set out in paragraph 5, individuals or groups that are affected or likely to be affected by the project will be identified as 'project affected parties' and other individuals or groups that may have an interest in the project will be identified as 'other interested parties'</p> <p>11. The Borrower will identify those project-affected parties (individuals or groups) who, because of their particular circumstances, may be disadvantaged or vulnerable. Based on this identification, the Borrower will further identify individuals or groups who may have different concerns and priorities about project impacts, mitigation mechanisms and benefits, and who may require different, or separate, forms of engagement. An adequate level of detail will be included in the stakeholder identification and analysis so as to determine the level of communication that is appropriate for the project.</p> <p>12. Depending on the potential significance of environmental and social risks and impacts, the Borrower may be required to retain independent third party specialists to assist in the stakeholder identification and analysis to support a comprehensive analysis and the design of an inclusive engagement process.</p> <p>13. In consultation with the Bank, the Borrower will develop and implement a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the project and its potential risks and impacts. A draft of the SEP will be disclosed as early as possible, and before project appraisal, and the Borrower will seek the views of stakeholders on the SEP, including on the identification of stakeholders and the proposals for future engagement. If significant changes are made to the SEP, the Borrower will disclose the updated SEP.</p> <p>19. The Borrower will disclose project information to allow stakeholders to understand the risks and impacts of the project, and potential opportunities. The Borrower will provide stakeholders with access to the following information, as early as possible before the Bank proceeds to project appraisal, and in a timeframe that enables meaningful consultations with stakeholders on project design: (a) The purpose, nature and scale of the project; (b) The duration of proposed project activities; (c) Potential risks and impacts of the project on local communities, and the proposals for mitigating these, highlighting potential risks and impacts that might disproportionately affect vulnerable and disadvantaged groups and describing the differentiated measures taken to avoid and minimize these; (d) The proposed stakeholder engagement process highlighting the ways in which stakeholders can participate; (e) The time and venue of any proposed public consultation meetings, and the process by which meetings will be notified, summarized, and reported; and (f) The process and means by which grievances can be raised and will be addressed.</p> |

| No | ESS | Objective | Was it triggered? |    | Applicability | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|    |     |           |                   |    |               | <p>20. The information will be disclosed in relevant local languages and in a manner that is accessible and culturally appropriate, taking into account any specific needs of groups that may be differentially or disproportionately affected by the project or groups of the population with specific information needs (such as, disability, literacy, gender, mobility, differences in language or accessibility).</p> <p>21. The Borrower will undertake a process of meaningful consultation in a manner that provides stakeholders with opportunities to express their views on project risks, impacts, and mitigation measures, and allows the Borrower to consider and respond to them. Meaningful consultation will be carried out on an ongoing basis as the nature of issues, impacts and opportunities evolves.</p> <p>22. Meaningful consultation is a two-way process, that: (a) Begins early in the project planning process to gather initial views on the project proposal and inform project design; (b) Encourages stakeholder feedback, particularly as a way of informing project design and engagement by stakeholders in the identification and mitigation of environmental and social risks and impacts; (c) Continues on an ongoing basis, as risks and impacts arise; (d) Is based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information in a timeframe that enables meaningful consultations with stakeholders in a culturally appropriate format, in relevant local language(s) and is understandable to stakeholders; (e) Considers and responds to feedback; (f) Supports active and inclusive engagement with project-affected parties; (g) Is free of external manipulation, interference, coercion, discrimination, and intimidation; and (h) Is documented and disclosed by the Borrower</p> <p>23. The Borrower will continue to engage with, and provide information to, project-affected parties and other interested parties throughout the life cycle of the project, in a manner appropriate to the nature of their interests and the potential environmental and social risks and impacts of the project.</p> <p>24. The Borrower will continue to conduct stakeholder engagement in accordance with the SEP, and will build upon the channels of communication and engagement already established with stakeholders. In particular, the Borrower will seek feedback from stakeholders on the environmental and social performance of the project, and the implementation of the mitigation measures in the ESCP.</p> <p>25. If there are significant changes to the project that result in additional risks and impacts, particularly where these will impact project-affected parties, the Borrower will provide information on such risks and impacts and consult with project-affected parties as to how these risks and impacts will be mitigated. The Borrower will disclose an updated ESCP, setting out any additional mitigation measures.</p> |



| No | ESS | Objective | Was it triggered? |    | Applicability | Requirements / EHS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|    |     |           |                   |    |               | <p>26. The Borrower will respond to concerns and grievances of project-affected parties related to the environmental and social performance of the project in a timely manner. For this purpose, the Borrower will propose and implement a grievance mechanism to receive and facilitate resolution of such concerns and grievances.</p> <p>27. The grievance mechanism will be proportionate to the potential risks and impacts of the project and will be accessible and inclusive. Where feasible and suitable for the project, the grievance mechanism will utilize existing formal or informal grievance mechanisms, supplemented as needed with project-specific arrangements.</p> <p>28. The Borrower will define clear roles, responsibilities and authority as well as designate specific personnel to be responsible for the implementation and monitoring of stakeholder engagement activities and compliance with this ESS.</p> |

### 3.0 THE PROPOSAL

#### 3.1 Overview

The project involves design and construction of visitor information centres in 3 Central Forest Reserves (CFRs) including Echuya, Budongo and Bugoma central forest reserves. Considering the global significance and diversity of the forest reserves, the project involves thoughtful and creative design of the centres to maximize the quality of visitor experience in each protected area. It is also worth noting that forest reserves support a variety of functions that are ecologically and culturally sustainable and which may contribute to the quality of life of concerned communities.

Managing visitor movement and influencing visitor behaviour are considered as critical aspects of developing sustainable tourism: they are crucial to protecting the values and attributes of the sites / protected areas and contribute to a high-quality visitor experience.

The design and implementation of tourist reception, information and interpretive facilities within the three forest reserves supports the driver project, IFPA-CD, of developing tourism by the Proponent and the development partners.

To this end, a series of parameters have been used to provide the context for the detailed design of the visitor information facility within Budongo Central Forest Reserve. These parameters are shown on a series of plans which define the extent of the VIC proposed as detailed herein. The relevant details from these, pertinent to the environmental assessment are presented and discussed in this chapter. It provides a description of the key components and details regarding activities throughout the life of the project. It also includes facility infrastructure, main activities for all phases and associated emissions and discharges (where applicable). The chapter also gives an overview of the conceptual project designs and the site suitability selection process used by the design team. It aims to present sufficient project information to inform the EIA process. More specifically it provides:

- Summary of the type and location of the project, including detailed site location maps;
- Sustainable design elements adopted for the project; and
- The scope of work for the project, including a description of the site preparation and construction works required.

#### 3.2 Project Location

The project will support the development of visitor information infrastructure in Budongo CFR. The location of the preferred site within the forest reserve are shown in the table below and figures 3.1 – 3.3 below.

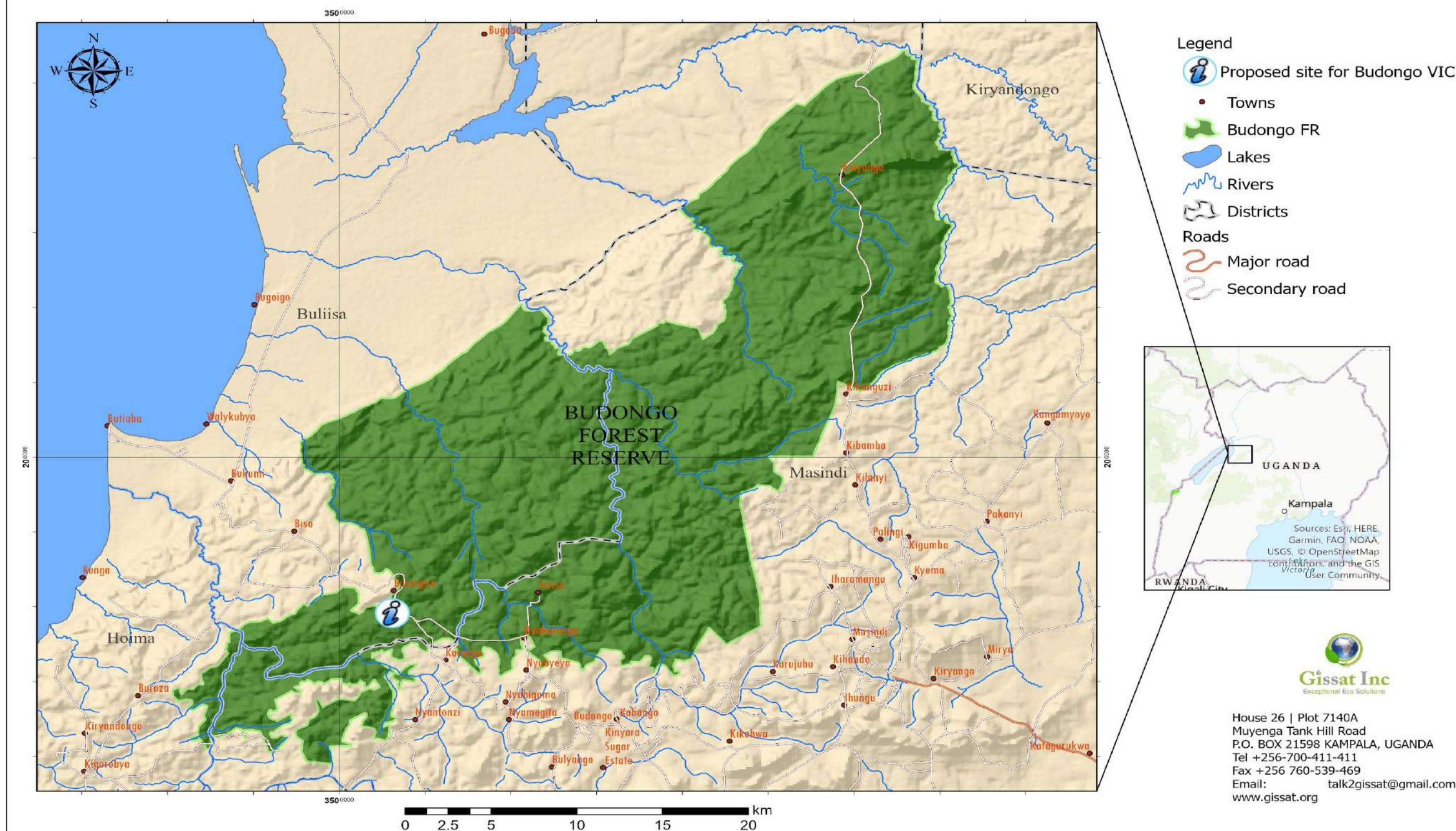
Table 3.1: Location of the prioritized sites

| S/No. | Proposed VIC                   | Location details                                                                                 | Coordinates<br>UTM coordinates (36N WGS 1984) |               |                |
|-------|--------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------|----------------|
|       |                                |                                                                                                  | Point                                         | Easting (m E) | Northing (m N) |
|       | Budongo Central Forest Reserve | Busingiro Camping Site in Akiimi B Village Garasoya Parish Kihungya Sub – County Bulisa District | ABud                                          | 329718        | 189646         |
|       |                                |                                                                                                  | BBud                                          | 329810        | 189551         |
|       |                                |                                                                                                  | CBud                                          | 329613        | 189407         |
|       |                                |                                                                                                  | DBud                                          | 329522        | 189523         |

The location of the site for the proposed VIC is shown by map 3.1 below



# ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A VISITOR INFORMATION CENTRE IN BUDONGO CENTRAL FOREST RESERVE



Map 3.1: Location of the site for the proposed VIC at Busingiro Camp site

### 3.3 Site analysis

The proposed visitor information centre is an environmentally friendly showcase of attractions that aptly represent the term ‘design with nature.’ Within this Project, the centre’s responsibility as an information source for the different target groups was defined to ideally go beyond the borders of the preferred site, by touching upon multiple levels of information which include not only the site’s values but also its historical, social, environmental, and economic contexts. The key attributes of the preferred / identified site are described below.

Table 3.2: Location of the prioritized sites

| S/no. | Proposed VIC                   | Site condition     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                         |  |                                                                                                   |  |
|-------|--------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------|--|
|       |                                | Acreage            | Site vegetation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Access to the site                                                                                                      |  | Site topography                                                                                   |  |
|       | Budongo Central Forest Reserve | Ca. 500 Sq. metres | The site is a bushed forest dominated by trees such as; <i>Celtis africana</i> , <i>Maesopsis eminii</i> , <i>Cola gingatea</i> , <i>Markhamea lutea</i> , <i>Ficus</i> sp, <i>Voacanga thouarsii</i> and <i>Toona sinensis</i> . Shrubs recorded during the site survey were; <i>Alchornea</i> sp, <i>Vepris nobilis</i> , <i>Secamone africana</i> , <i>Vitex</i> sp, <i>Acalypha bipartita</i> and <i>Broussonetia papyrifera</i> while Herbs recorded were; <i>Piper</i> sp, <i>Achyranthes</i> sp, <i>Asystesia gangetica</i> , <i>Afromomum</i> sp and <i>Periploca</i> sp. | The subject site at Busingiro camping site is located approximately 37.2km from Masindi town along Masindi – Biiso Road |  | The preferred site is part of a flat plane of the Biiso sector that abuts the Masindi-Biiso Road. |  |



### 3.4 Design principles

The design will follow a context sensitive, socially responsible and ecologically balanced approach. It is expected that the building structures will not make a massive impression and that their architectural expression will be modest but striking at the same time.

Considering the unique character of the selected site, the project architects focused on elements that can be found similar, to create a common, easily recognizable architectural identity for the Budongo VIC. The project adopted principles of bioclimatic architecture (passive cooling, enhanced natural ventilation, etc.) and renewable energy systems including but not limited to solar power, reuse of water, rainwater harvesting, etc.)

#### 3.4.1 General overview

The design concept followed the below principles detailed below:

- The floor shall be elevated on a platform structured with poles / stilts to accommodate efficiently any site topography (standardization), minimize intervention on the ground, protect the structure from any potential flooding;
- The roof will be an independent light structure with prefabricated parts (poles, trusses, coverings etc.) in order to minimize cost in labour & material transport, to adequately protect the structure from heavy rainfalls and strong sunshine and allow for enough ventilation and breeze through the spaces below.
- The functions / spaces of the visitor centre are arranged protected under the roof to offer flexibility in accommodating a common general plan together with small site-specific additions.
- The walls and space divisions shall be made of different materials to present a unique architectural identity and made part of exhibition- depending on the local building material availability.

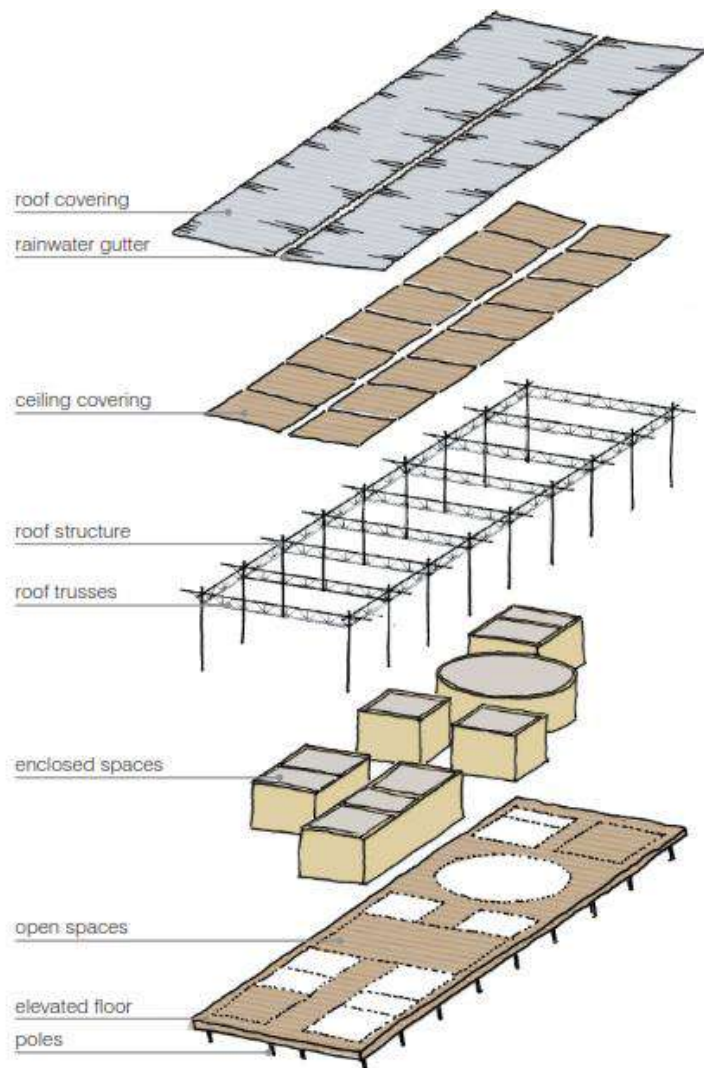


Figure 3.1: Design concept / axonometric diagram



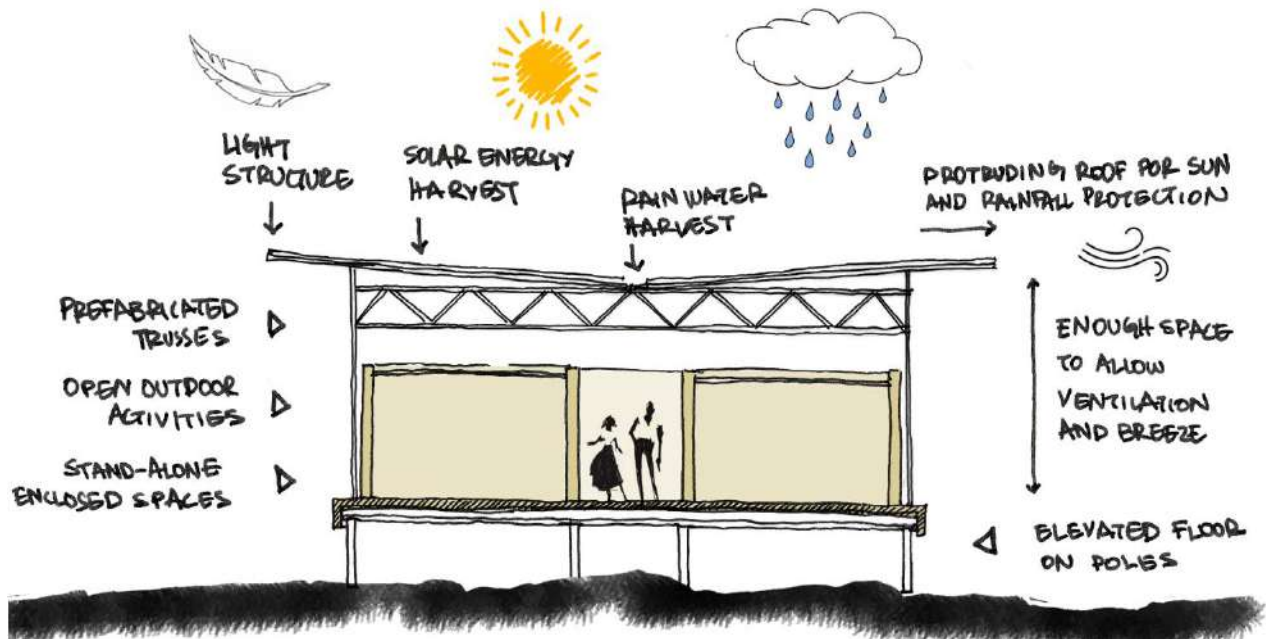


Figure 3.3: Illustration of the design principle



Figure 3.2: An overview of walls and space divisions that will be used depending on the location of the VIC

### 3.5 Design approach

The design concept was based on the following design approach:

Standardization in plan and technology, to reduce cost in labour, building materials and transport and maximize efficiency.

Creation of a tool-kit of building components

Prefabrication of elements that need quality control

Simplicity for straightforward and fast construction

Robustness to minimize future maintenance and ensure long lifetime

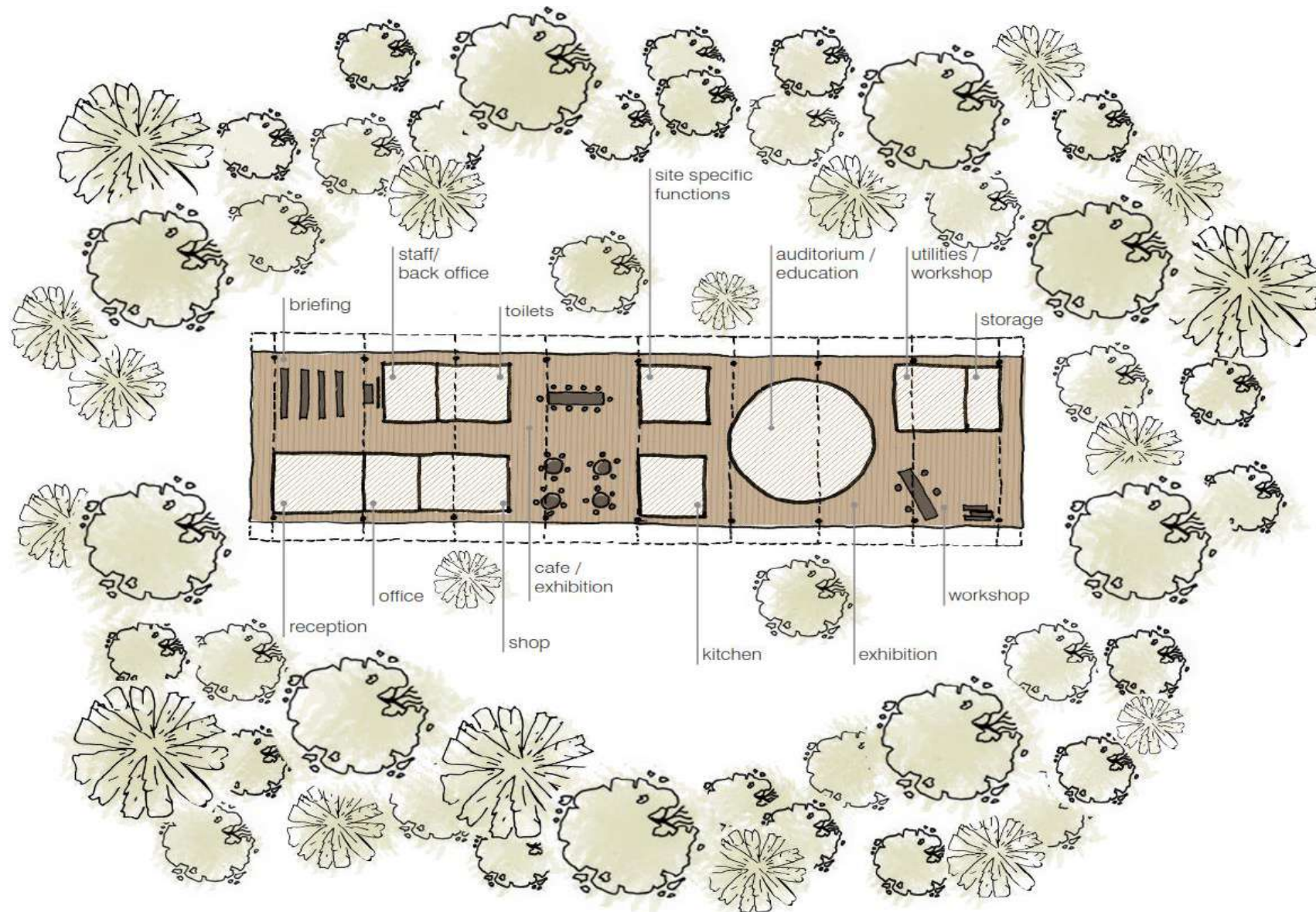


Figure 3.3: Generic layout plan of the proposed visitor information centres



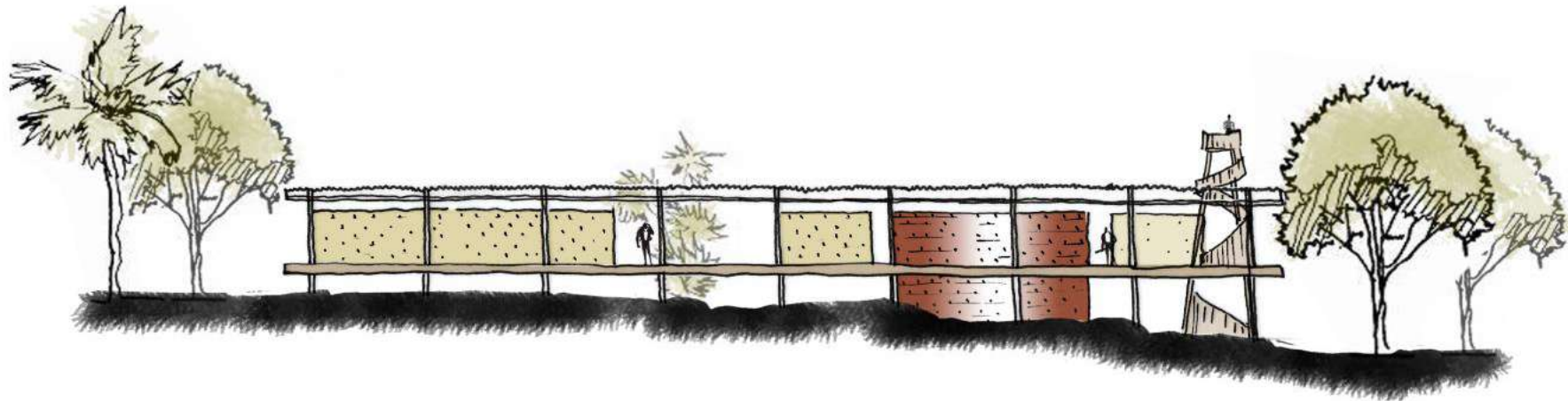
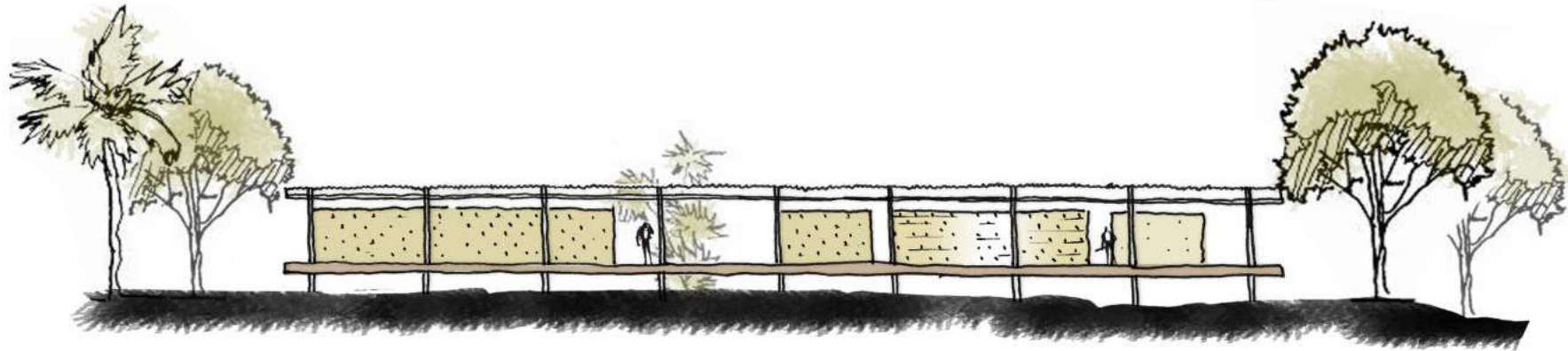


Figure 3.4: Section of a typical VIC

### 3.6 Landscape strategy

The landscape concept for the proposed VIC was based on limiting any impact on the surrounding environment as much as possible. Larger grown trees that are already existing on the sites will be maintained and new endemic species will be planted to support the program of the VIC and strengthen the local ecosystem.

For seating and other play elements, the approach was to incorporate durable and sustainable objects. The material will be where possible locally sourced and it is expected to mainly be timber and stone/ rock as the colours will harmonize with the green and brown environment.

The elements added shall be functional and serve as extra points of attraction for visitors such as an exhibition, installation or viewing spot.

The landscape elements shall serve two main functions: to bridge between the building and the nature reserve and to provide a place to enjoy the surrounding green. The landscape elements were intended to be an extension of the Visitor Centre's program and to support its use in the best way possible. There are a couple of general elements that are required in most facilities for which its approach is briefly discussed below.

#### 3.6.1 Landscape zonal concept

##### 3.6.1.1 Car parking and walk ways

There will need to be adequate parking places arranged in close proximity to the VIC. However, all last steps from car to the VIC will be by foot. This will ensure the calm environment around the visitor centre and add to the experience of the visitor to the CFR. All parking spaces shall be out of sight once arrived at the visitor centre which can be by different methods: around corners, behind trees, etc. It is expected however that entry points will mostly come from the parking side and pathways will be adjusted accordingly.

Parking places and pathways will not be asphalted but natural environment will be promoted in the type of materialisation by using sand, stone, gravel and (rammed) earth.

##### 3.6.1.2 Outdoor briefing / seating

For the visitor centre at Busingiro, a briefing or seating area shall be incorporated of which the dimensions change per location / PA. The sites shall have an open space that is naturally shaded by trees to be used during daytime activities. This space will also be used for cultural purposes and performances.

##### 3.6.1.3 Garden and exhibition area

To highlight the importance of preserving endemic plant species, the site will have a dedicated area as a nursery for medicinal plants, special flowers and important tree species in the area. This section shall be organised as a publicly accessible area and may be combined with other installations of local cultural crafts and artefacts.

Table 3.3: Proposed landscaping schedule

| Grouping drawing no. / | Buildings                                   | Unit area (sqm) | No. of units/capacity | Total area sqm (outdoor) |
|------------------------|---------------------------------------------|-----------------|-----------------------|--------------------------|
| Budongo                |                                             |                 |                       |                          |
|                        | <b>LANDSCAPE AND PARKING FACILITIES</b>     |                 |                       |                          |
| LA1                    | Parking areas                               |                 |                       |                          |
| LA 1                   | Parking areas (cars) gravel with stone kerb | 14              | 11                    | 154                      |
| LA 1                   | Parking areas VIP cars (concrete pavement)  | 14              | 3                     | 42                       |

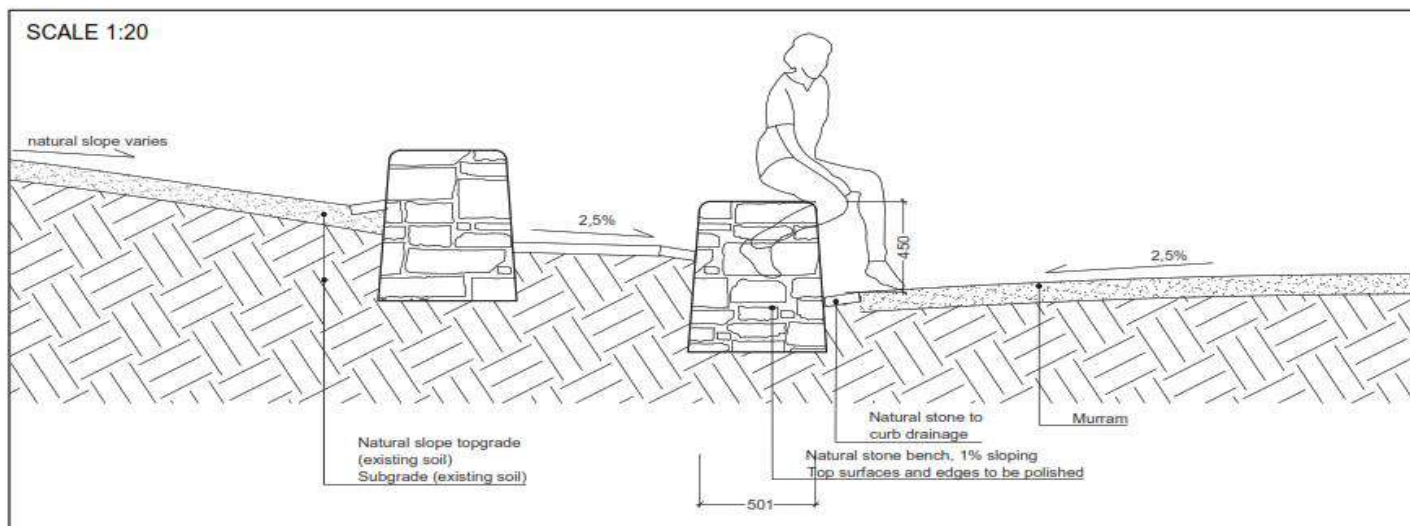
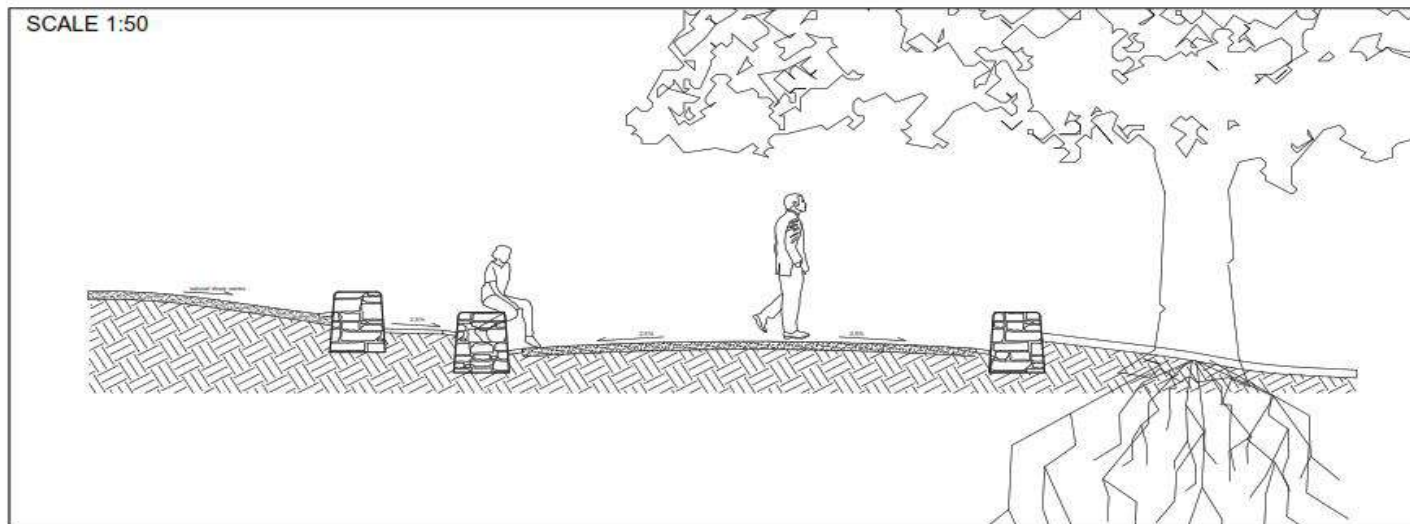
| Grouping / drawing no. | Buildings                                                     | Unit area (sqm) | No. of units/capacity | Total area sqm (outdoor) |
|------------------------|---------------------------------------------------------------|-----------------|-----------------------|--------------------------|
| LA 1                   | Parking areas (coach) gravel with stone kerb                  |                 |                       |                          |
| LA2                    | Roads, pathways, steps                                        |                 |                       |                          |
| LA 2                   | Footpath (locally sourced stone in mortar)                    |                 |                       |                          |
| LA 2                   | Footpath (roughened concrete)                                 |                 |                       |                          |
| LA 2                   | Murram Road                                                   |                 |                       | 800                      |
| See LA 1               | Gravel road / parking area                                    |                 |                       | 100                      |
| See specifications     | Stone steps                                                   |                 |                       |                          |
| LA3                    | Surfaces and open spaces                                      |                 |                       |                          |
| LA 3.1                 | Botanical garden/flower orchard area                          | 95              | 1                     | 95                       |
| see LA2                | Terrace/hardscape (locally sourced stone in mortar)           |                 |                       |                          |
|                        | Outdoor seating area (murram with small natural stone edging) |                 |                       |                          |
|                        | Cleared open space (murram/sand/natural)                      |                 |                       |                          |
| LA 3.2                 | Viewing deck                                                  |                 |                       |                          |
| LA 3.3                 | Performance platform                                          |                 |                       |                          |
| LA4                    | Landscape objects                                             |                 |                       |                          |
| LA 4.1                 | Entrance board (concrete)                                     |                 | 1                     |                          |
| LA 4.2                 | Seating - bench (stone + timber)                              |                 |                       |                          |
| see LA 4.2             | Seating - large bench                                         |                 |                       |                          |
|                        | Kiosk table - brick/plastered concrete (2mX1.2X0.6m)          |                 |                       |                          |
| LA 4.3                 | Briefing area (murram) circular benches (stones)              |                 | 1                     | 90                       |
| LA 4.4                 | Picnic bench                                                  |                 |                       |                          |
| LA 4.5                 | Trash bin (bamboo)                                            |                 | 5                     |                          |
| LA 4.6                 | Exhibition display (timber)                                   |                 |                       |                          |
| LA 4.7                 | Solar led outdoor light                                       |                 | 8                     |                          |
| LA 4.7                 | Tree naming plate (steel+timber)                              |                 | 10                    |                          |
| LA 4.8                 | Watchtower                                                    |                 |                       |                          |
| LA 4.8                 | Reptile cage                                                  |                 |                       |                          |
|                        | Water tank see MEP                                            |                 | 1                     |                          |
|                        | Waste collection (solid waste)                                | 8               | 1                     | 8                        |
|                        | Waste collection (organic waste)                              | 4               | 1                     | 4                        |
| LA5                    | Landscape plants and trees                                    |                 |                       |                          |
| LA 5                   | New tree (medium size, flowering)                             |                 | 10                    |                          |
| LA 5                   | New tree (large, broad leaf)                                  |                 | 5                     |                          |
| LA 5                   | New tree (large special tree)                                 |                 | 3                     |                          |





Figure 3.5: illustration of the typical landscaping options that may be considered for the subject VIC





#### KEY & REFERENCES



Example seating

|                                                                                                      |                                                    |               |                |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------|----------------|
| <p>F&amp;W</p> <p>Project 14174<br/>3000 SQ. Meters<br/>info@f&amp;w.co.uk<br/>www.f&amp;w.co.uk</p> | LANDSCAPE DRAWINGS                                 | DATE          | 1:20           |
|                                                                                                      | VISITOR INFORMATION CENTRES<br>FOR PROTECTED AREAS | CLIENT        | A3 (297x420mm) |
|                                                                                                      | drawn<br>World Bank Group Uganda<br>(NFA & UWA)    | DATE          | 31.07.22       |
|                                                                                                      | LA 4.3 GATHERING SPACE                             | NO. OF SHEETS | 380            |
|                                                                                                      | FINAL                                              | NO. OF SHEETS | LA_4.3         |

Figure 3.6: Illustration of the gathering spaces that may be considered for the subject VIC

### 3.7 Proposed components

With a carrying capacity of the proposed VIC defined by the location needs and characteristics, the facility is designed to have the following space functions reception area, auditorium / education, waiting & instruction area, exhibition section, medical services and sanitary facilities as detailed in the table below. The bulk of the proposed buildings will be built out of natural eucalyptus log structures sawn/planed timber, brick and stone masonry, structural steel work, structural timber and reinforced concrete.

Table 3.4: Overview of components at the proposed VIC

| S/no.                     | Space function                | Area indoor (m <sup>2</sup> ) | Area out door (m <sup>2</sup> ) |
|---------------------------|-------------------------------|-------------------------------|---------------------------------|
| <b>Public facilities</b>  |                               |                               |                                 |
|                           | Reception area                | 40                            |                                 |
|                           | Reception Office              |                               |                                 |
|                           | Auditorium / education        | 50                            |                                 |
|                           | Seating area                  |                               |                                 |
|                           | Tech room                     |                               |                                 |
|                           | Waiting and instruction       |                               | 20                              |
|                           | Briefing area                 |                               |                                 |
|                           | Café / Exhibition             | 15                            | 70                              |
|                           | Seating area                  |                               |                                 |
|                           | Kitchen / counter             |                               |                                 |
|                           | Exhibition area               |                               |                                 |
|                           | Medical services              | 10                            |                                 |
|                           | First aid clinic              |                               |                                 |
|                           | Sanitary facilities           | 22                            |                                 |
|                           | Toilets / Washrooms           |                               |                                 |
|                           | Showers                       |                               |                                 |
| <b>Service facilities</b> |                               |                               |                                 |
|                           | Staff facilities              | 15                            | 30                              |
|                           | Staff room / back office      |                               |                                 |
|                           | workshop                      |                               |                                 |
|                           | Storage and safety facilities | 15                            |                                 |
|                           | Supply room / storage         |                               |                                 |
|                           | Strong room                   |                               |                                 |

| S/no. | Space function                      | Area indoor (m <sup>2</sup> ) | Area out door (m <sup>2</sup> ) |
|-------|-------------------------------------|-------------------------------|---------------------------------|
|       | MEP Services                        | 8                             | 4                               |
|       | Tech room / generator / transformer |                               |                                 |
|       | Water / solar heaters               |                               |                                 |
|       | Water pressure tank                 |                               |                                 |
|       | Electronical Service                | 2                             |                                 |
|       | CCTV Equipment                      |                               |                                 |
|       | IT equipment                        |                               |                                 |
|       | Waste disposal services             |                               | 6                               |
|       | Centralized on site                 |                               |                                 |
|       | Garbage containers                  |                               |                                 |
|       | Parking areas                       |                               | 190                             |
|       | Parking area (Cars)                 |                               |                                 |
|       | Parking area (Coach)                |                               |                                 |
|       | Landscaping                         |                               | 25                              |
|       | Garden                              |                               |                                 |
|       | Outdoor seating                     |                               |                                 |
|       | Subtotal indoor roofed              | 206                           |                                 |
|       | Circulation, construction 30%       | 62                            |                                 |
|       | Total indoor roofed                 | 267                           |                                 |
|       | Total outdoor roofed                |                               | 129                             |
|       | Total roofed                        | 396                           |                                 |
|       | Total outdoor (landscape)           |                               | 217                             |



### 3.8 Budongo VIC

#### 3.8.1 Overview

The Budongo forest reserve is a medium altitude moist semi-deciduous forest and situated to the North-East of Lake Albert at the edge of the Albertine Rift valley. The forest is a famous destination for chimpanzee tracking, bird watching and nature walks. Some of the most prominent cultural sites include: the royal mile, Busingiro Hill and the Omukama's (King's) fishpond in Biiso. The forest has one of the longest continuous research records of any tropical high forest in Africa with permanent plots dating back to the beginning of 1900.

The site is a bushed forest dominated by trees species; *Celtis africana*, *Maesopsis eminii*, *Cola gingatea*, *Markhamea lutea*, *Ficus sp*, *Voacanga thouarsii* and *Toona sinensis*. Currently dilapidated, the proposed site lies within meters to a defunct campsite as depicted by the plates below.



Plate 3.1: A section of the forest boundary as viewed from St. John Bosco Primary School



Plate 3.2: Access to the project site off Masindi – Biiso Road



Plate 3.3: NFA structures adjacent to the proposed site



### 3.8.2 Architecture and landscape approach

The architecture approach for Budongo VIC is to create a moment of suspension before entering the forest. The Visitor Centre is focussed on providing space for exhibitions and seating.

For the landscape elements, the building is placed on a relatively open site, the motivation for this choice was to ensure no original forest trees are cut. A provision to plant more trees around the VIC section has also been considered to enhance the forest experience of each visitor. Design attributes specific to this VIC include but not limited to:

- a) Walking route and gear storage
- b) Bird nesting installations (to encourage birds to populate VIC site)

Points of attention relevant to this VIC include:

- a) Tourist facility should be located outside the research area as they wish to research wildlife and nature in their natural habitat
- b) Community crafts include the use of rattan
- c) Interesting tourist attraction possible in combination with the sawmill industry
- d) Possibility to start mountain bike route.
- e) Bunyoro traditional performance arts as tourist attraction

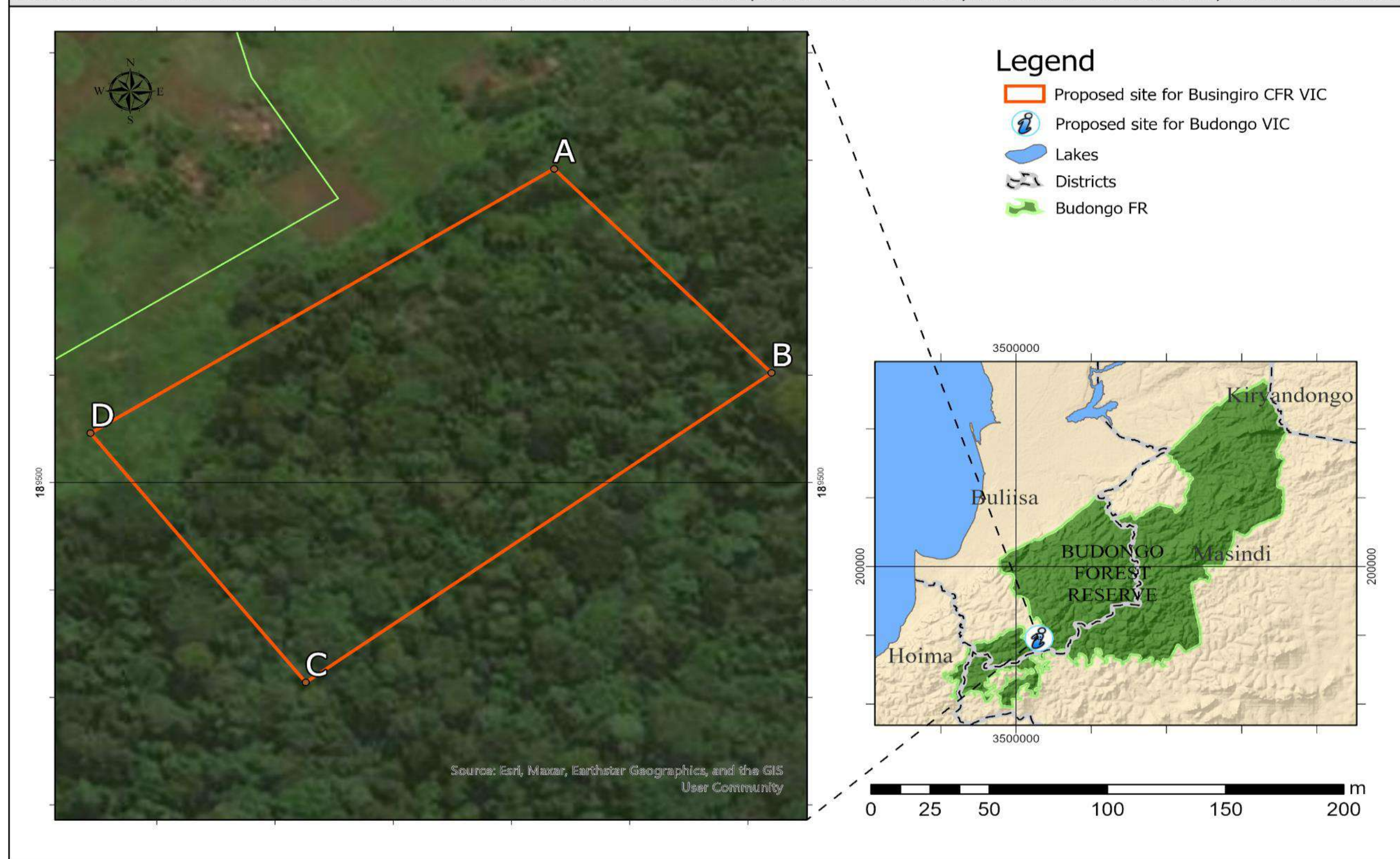
Figure 3.7 below highlights the 3D artistic impression of the proposed VIC, while figures 3.8 – 3.9 show the placement of various project components



Figure 3.7: 3D artistic impression of the proposed VIC at Busingiro



**LOCATION OF THE PROPOSED BUDONGO CFR VIC IN AKIIMI 'B' VILLAGE, GARASOYA PARISH, KIHUNGYA SUBCOUNTY, BULIISA DISTRICT**





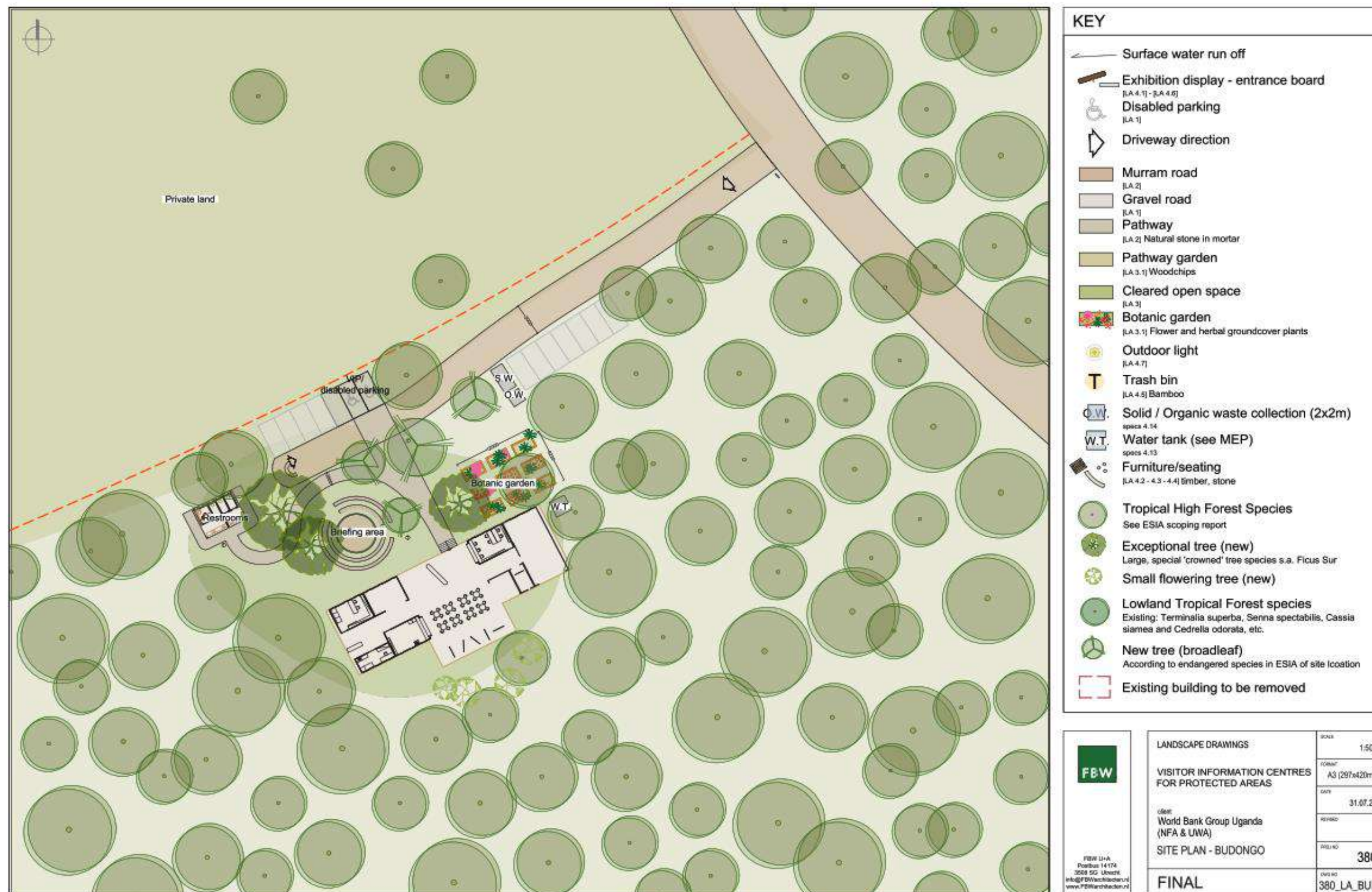


Figure 3.8: Proposed Busingiro VIC master / site lay out plan



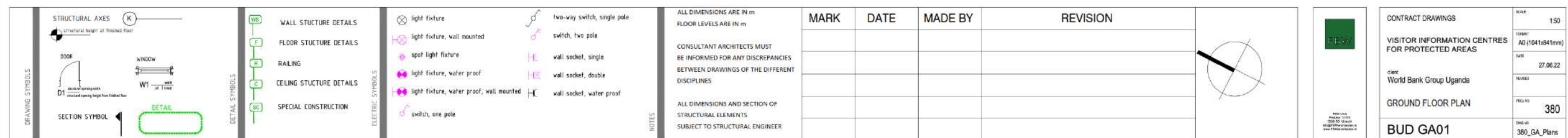
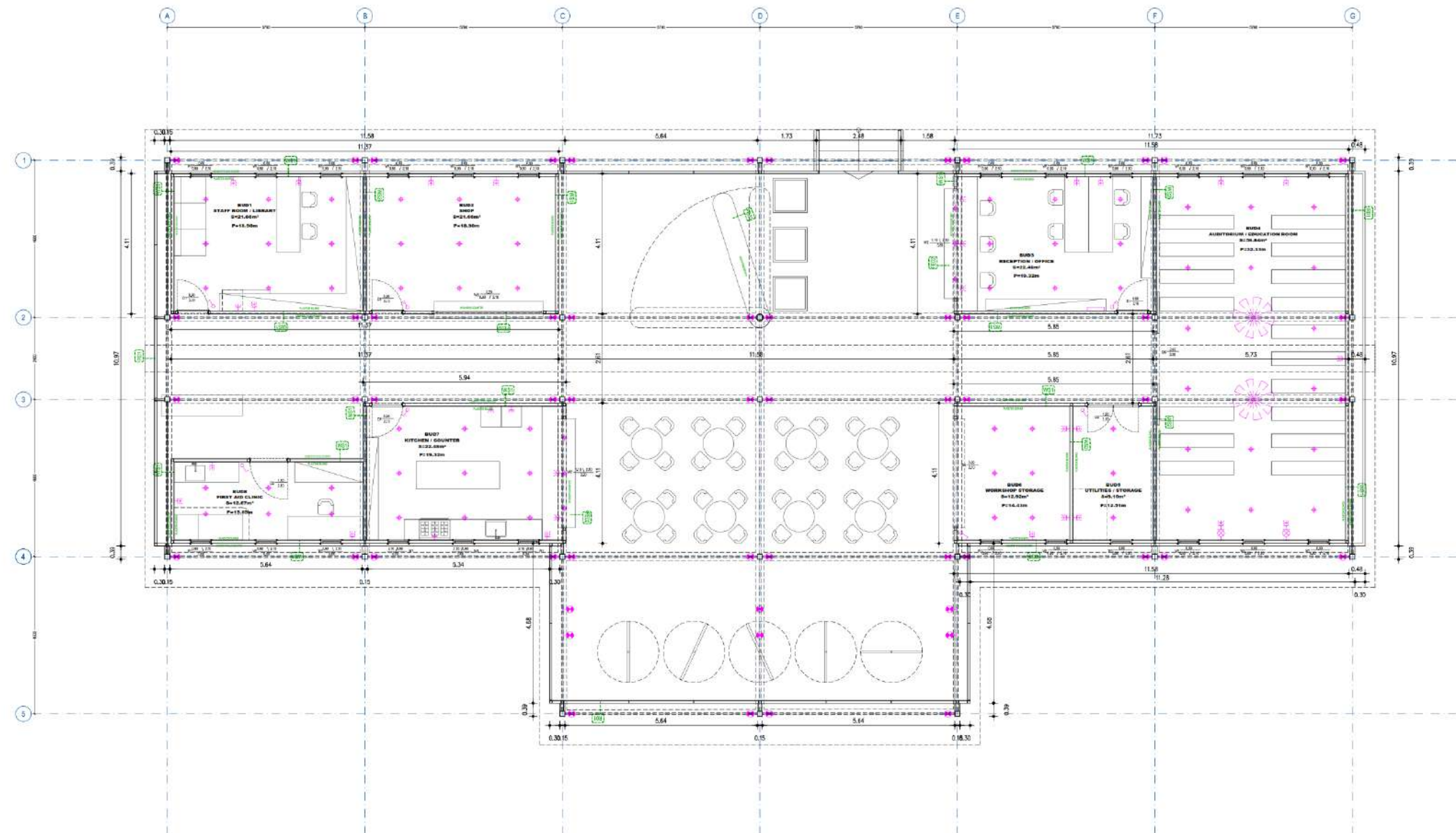


Figure 3.9: Ground floor plan of the Budongo VIC building

### **3.9 Cultural features**

Recognition of cultural values has been a major driver of substantive changes in CFR and heritage management philosophy and practice. Cultural values cannot be separated from the people who connect to and value it, neither can heritage sites and CFRs exist in isolation from and without the support of the broader community.

Cultural values of the tourist destination can be expressed in multiple ways. Being components of cultural values, the social value and spiritual value have been difficult to understand and therefore been ignored to some extent. From a perspective of tourism management, the cultural values can be only delivered to and experienced by visitors through specific cultural offers which are substantial assets (tangible and intangible) offered in a tourist destination to carry its cultural values. Besides officially designated cultural heritage sites and assets, cultural offers can be tangible arts, museums, landscapes, or intangible cultural heritage, oral traditions or dialects and social value, such as tradition, custom, knowledge and spiritual reliefs.

Within Budongo Forest, the proposed VIC shall stand out as an important facility / feature showcasing and interpreting the cultural values of the host community. Although, the site identified for the development of the VIC did not contain any built or movable cultural structures or articles, archaeological sites, its design has prioritized the cultural values and beliefs of the host community. This is evidenced by the construction materials and the kind of information to be displayed at the VIC.

### **3.10 EHS safeguards during the site preparation and construction phases**

#### **3.10.1 Resource consumption**

Local materials will be utilized to reduce on the carbon footprint of the development. Building materials such as stones, bricks and timber will be used to ensure that the buildings blend in well with the environmental sensitivity of the locations. The local climate is to be considered during construction material choice. Building materials include local clay brick and reinforced concrete frame system with steel roof trusses and metal roof sheets.

#### **3.10.2 Control of loss of vegetation and terrestrial habitat alteration**

During the site preparation phase, a few existing trees and shrubs will be felled to create ground for the VIC structures. At the prioritised site, a number of vegetation species have been identified and detailed in section five below. In an effort to reduce vegetation loss, the contractor shall keep process areas as small as possible, giving special importance to preservation of trees, particularly large trees of genetic and landscape value. Landscaping will be done to re-vegetate most of the areas affected during construction and reuse of organic topsoil generated during excavations. Other measures that shall be implemented by the contractor include:

1. Implementation biodiversity offsets or other compensation mechanisms per section 115 of the National Environment Act, 2019; This must fully compensate for the loss in biodiversity as a result of project implementation;
2. Where applicable, mechanized vegetation removal shall be replaced with hand techniques, where the plant is removed with the root system intact, for replanting after construction;
3. Vegetation translocation and relocation techniques will be used as necessary. Vegetation cover, such as native and exotic fruit plants, topsoil, overburden, or spoils feasible for sustaining growth after construction will be removed in separate operations and segregated for later use during site reinstatement, and materials to be used for site reinstatement will be stockpiled and protected from wind and water erosion, as well as from contamination;
4. Mature fruit tree species within the proposed sites be spared as far as is practical in order to minimize vegetation loss to crops that are easy to re-vegetate in other areas;



5. All construction works should be undertaken with supervision of NFA
6. Compensation for all damages incurred to the reserved tree species during construction. The compensation shall not only be computed basing on the value of trees and or vegetation lost but on the total value and functions of the lost values and/functions. A competent person/specialist shall be hired to calculate the loss.
7. Native trees will be replanted along the project facility corridor giving priority to preferred species for bird nesting, feeding, community use and provision of canopy or shade.

### **3.10.3 Site stabilization, erosion control and waste management**

The contractor shall implement measures at all subject sites of operations to manage soil erosion through minimization of the excavated area, preservation of existing ground cover to the extent possible and provision of approved ground cover. The construction team shall also implement appropriate stabilization techniques to prevent cave-ins and landslides.

The contractor will consider the safest mode of disposal of construction debris. The recommendation should consider the mode with least environmental impact to ensure maximum benefit e.g., reuse of some materials. Under no circumstances shall the contractor allow waste to accumulate so as to cause a nuisance or health risk due to propagation of pests and disease vectors within the Protected Area. Wastes generated onsite shall be described by method of storage, collection and disposal in accordance with the law. There shall be regular removal and disposal of all site waste and schedule of removal must be available on site.

### **Anticipated waste streams and upset conditions**

The project construction phase will generate emissions, effluent and solid waste as discussed below:

#### **Emissions:**

- Combustion emission from diesel engines;
- Construction noise and heavy vehicular noise;
- Dust from stock piles; excavation, earthwork;
- Light: During night time, lighting will be limited to security purposes only.

#### **Effluents:**

- Oil and grease from vehicle and equipment servicing;
- Site run off (storm water that may contain mobilized material such as cement or fine sediment;
- Suspended sediment plumes associated with the material stockpiles;
- Sewage from the washrooms.

#### **Solid waste:**

- Domestic waste associated with workers on site; food and beverage containers;
- Oily rags from vehicle and equipment maintenance

### **3.10.4 Traffic management**

Construction will be done in phases; this will limit the load of material onsite and delivery of some materials will be done during off-peak traffic hours to limit traffic congestion especially along the access roads. Other proposed traffic management measures include: Appropriate traffic warning signs will be placed near the turn off to the site informing road users of construction trucks turning ahead and instructing them to reduce speed.

### **3.10.5 Use and management of hazardous materials, fuels, solvents and other petroleum products**

Any use of hazardous materials shall conform to the proper use recommendations of the product. Hazardous waste materials and their containers shall be disposed of in a manner approved by NEMA and in accordance with the Waste Management Regulations. Spill management and control shall also in accordance to the product manufacturer's instruction and waste management regulations.

### **3.10.6 Worker and site Sanitation**

Sanitation facilities are to be provided to site workers. All sanitary waste generated as a result of project activities will be managed in accordance with the National Waste Management Regulations. The contractor is to provide a site sanitation plan for approval and implementation prior to the commencement of site activities.

### **3.10.7 Noise Control**

Noise interferes with the perception of wanted sound and is likely to be physiologically harmful. Exposure to destructive noise levels can impact on animal and human welfare. Psychologically, it can be a source of annoyance and create communication problems leading to elevated stress levels. The contractor is to control noise emissions generated as a result of excavation and construction activities to the extent possible. In the case of the site location where noise disturbance will be a concern, the contractor will ensure that the equipment is in good working order with noise suppression systems. Where noise management is a concern, the contractor will make reasonable efforts to schedule activities during normal visiting hours. Where noise is likely to pose a risk to the surrounding community and the PA animals, the contractor is to inform the CFR manager and will notify the concerned parties including Forest rangers.

### **3.10.8 Quality and safety control measures**

Quality control measures are to be adopted in accordance with the governing conditions of contract, technical specification provisions as well as guidance from the engineer. Safety control measures on the other hand are to be conducted in accordance with Occupational Safety and Health (OSH) Act. As such, arrangements are to be put in place to ensure the prevention and protection of persons at the site from injuries, diseases, death and damage to property. Furthermore, the workers are to be provided with protection from adverse weather, a clean and healthy work environment, sanitary conveniences, washing facilities, First Aid and facilities for meals. Safe access to the site and safe work practices will also be ensured.

All health and safety controls at the proposed site shall be governed by the IFPA-CD Project's occupational health and safety measures that are aimed at providing guidelines on how work shall be executed during implementation of IFPA-CD sub - projects to ensure that health and safety of the workers are adequately managed to prevent injuries and loss of lives during the course of employment. The Occupational Health and Safety Measures were developed in a manner consistent with the World Bank's Environmental and Social Standard (ESS) 2 on Labour and working conditions in addition to relevant GoU legal and regulatory framework, World Bank Group General Environmental Health and Safety Guidelines (WBG EHS Guidelines), International Labour Organisation Conventions and other Good International Industry Practices.

Implementation of all the requirements stipulated in the IFPA – CD measures shall be enforced by: the Ministry of Water and Environment (MWE); National Forest Authority (NFA); Kikuube District Local Government; Project Coordination Unit (PCU) including the community workers, Project Manager - Project Implementing Agencies (PIA) under the IFPA – CD Health Safety and Environment Manager, and the Technical Service Providers (TSP).

All contracted workers including firms/Technical Service Providers (TSP), shall be required to abide by the Occupational Health and Safety Measures.

### **3.10.9 Site security**

The contractor shall be responsible for maintaining security over the construction site, including protection of stored material and equipment. In the event of severe weather, he shall secure the site and associated equipment in such a manner as to protect it and adjacent areas from consequential damage.

### **3.10.10 Environmental controls**

The project manager shall take all precautionary measure throughout the duration of the project to prevent contamination of water courses, aquifers and surrounding environment by pollutant waste such as lubricants, fuels, chemical products, sewerage matter, silt or other obnoxious material. If this happens at any one time, the contractor shall immediately act to remediate this action and disciplinary action taken on the perpetrator. The contractor shall also provide working machinery and equipment designed to operate with the least noise possible, including shielding, enclosures, soundproofing houses and other physical barriers to restrict noise transmission.

Measures to prevent erosion resulting from concentration or increase in flow of storm water caused by construction works shall include sediment basins, netting, slope drains and other erosion control devices.

### **3.11 Environmental, Health and Safety systems**

These include drainage, water supply and foul water management, electricity and telecommunication and are described below.

#### **3.11.1 Drainage**

##### **3.11.1.1 Surface and Storm Water**

Site drainage will be facilitated by both surface channels and the installation of covered subterranean sand drains. These drains will be sized according to the expected surface runoff and will be filled with free-draining material. The free-draining material will be wrapped in geotextile to prevent entry of fine particles which tend to block ordinary drains without geotextile. This will ensure that the surface runoff on the open ground is efficiently drained without undermining utility of the grounds or the effectiveness of the underground drains.

##### **3.11.1.2 Waste Water Handling and Disposal**

Waste water from all wash rooms will be channelled through manholes into a septic tank safely located at least fifty meters from key sensitive receptors.

#### **3.11.2 Water Supply**

The existing water sources at the prioritised sites shall be enhanced with contemporary treatment facilities and pipe networks. Stainless-steel tanks of appropriate storage capacity, hoisted on a 9m high steel stand will be procured for onsite storage of water. The water will be passed through several filters to ensure its safe to drink.

All internal water pipework and related connectors will be PPR pipes while all below-ground pipework will be PN10 HDPE pipe work of various sizes, depending on the expected volume of water to be carried. All fittings and pipework will be expected to withstand a minimum of 6 bar pressure.

#### **3.11.3 Energy Supply**

There will be a combination of power sources at the VIC with primary source of power being solar which will be backed up by inverter and battery system. The entire visitor information facilities will be wired to AC current with a centralized distribution board.

a) Lighting:

AC low-energy lighting, preferably LED will be used for all fittings, complete with dimmable individual switches. All cabins will be connected to a central override switch in order to avoid unnecessary wastage of electricity during times when cabins are not in use.

b) Cooking:

Liquefied petroleum gas (LPG) will be the main source of energy for cooking with electricity in the kitchen only proposed to power low wattage appliances. A 5,000-liter LPG tank, preferably supplied by either Total or Shell complete with a service agreement to ensure its constant monitoring, will be placed within the service yard adjacent to the kitchen area. The advantage of a large onsite tank is the reduction of the risk of theft due to portability and the economy of scale which make the gas supply cheaper.

### 3.11.4 Waste management

It is suggested that in order to effectively manage the organic waste stream, that the proponent develops and implements a comprehensive system for organic waste separation, recycling, and composting at the VIC. All solid waste shall be stored safely before removal off site to a gazetted waste dumping site within the district through a contracted NEMA licensed waste handler. Based on this, it is suggested that the inorganic waste should be segregated (into recyclable / non-recyclable components) onsite and transported either to an approved recycling depot or to an approved landfill site. In order to effectively manage the general waste streams generated at the VIC, it is suggested to apply waste management techniques that aim to avoid and reduce the volume of waste generated at the facility including the following:

- The VIC shall adopt waste reduction procurement philosophy, also known as "Greener purchasing", "Pre-cycling", or "eco/green procurement". This outlook involves integrating environmental considerations into purchasing policies, programs and actions.
- The facilities should separate viable recyclable components from the general waste stream prior to disposal. The types of waste separation practices that should be considered should be based on the availability of an end-user or purpose. These options would typically be explored in conjunction with a private waste management contractor.
- Recyclables that are typically recovered from general waste include metals, plastics, glass, and paper / cardboard.
- In order to facilitate recycling, it will be necessary to employ waste segregation practices: using different skips / receptacles where possible. Waste storage receptacles must be covered or lidded to prevent scavenging by wild animals and vermin, and to prevent waste from being windblown into the adjacent sensitive areas. Furthermore, these skips / receptacles should be emptied on a weekly basis to prevent the formation of odour.



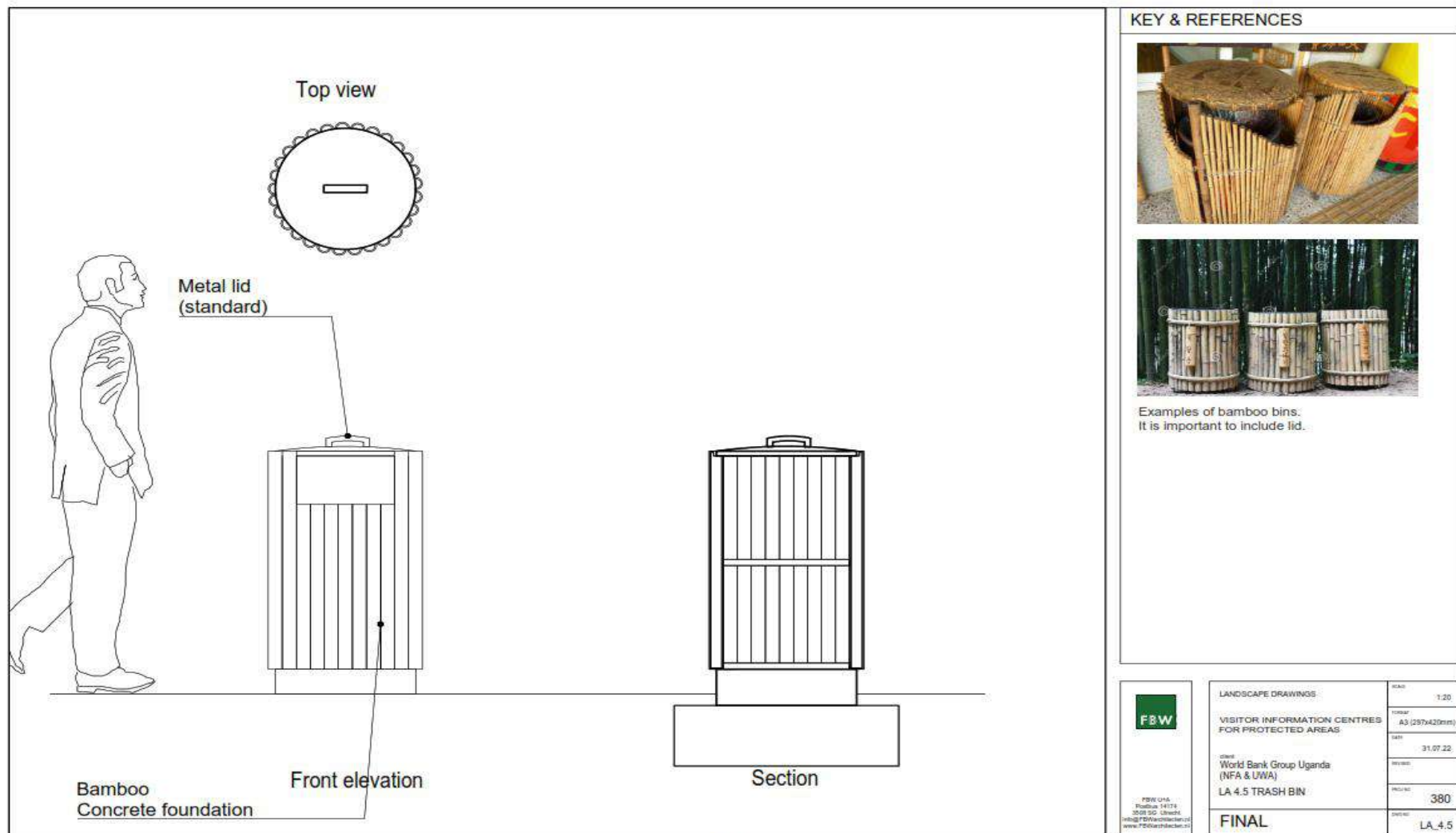


Figure 3.10: An illustration of signage proposed at the Budongo VIC

#### **3.11.4.1 Hazardous Waste**

Considering the sensitivity of the sites, the hazardous waste generated at the VIC will require stringent control and management to prevent harm or damage and hence liabilities. As a minimum requirement, hazardous waste must be separated at source from the general waste stream. This will ensure that non-confirming waste does not enter the landfill site, as well as preventing cross contamination and potential risks to personnel, animals within the PAs and the environment. For the medical clinic, NFA shall develop health care waste management plans that shall stipulate mechanisms of managing and disposing of all medical waste.

A NEMA licensed hazardous waste handler will be contracted to dispose of any hazardous waste generated at the VIC.

#### **3.11.5 Fire Strategy**

All sections of the VIC except for the kitchen area will be fitted with addressable smoke detectors complete with sounder and strobe light. The kitchen will be provided with addressable heat detectors. All detectors will be linked to a control panel that will be located within the main building at a central location. A repeater panel will be installed within the manager's office for efficient all-time control.

Selective lights strategically located within the facilities will be linked to small battery packs to ensure that in case of fire or a total power outage the way out of the buildings is adequately lit. The VIC will be supplied with at least two fire extinguishers, due to the flammable nature of building materials, easily accessible to first responders.

#### **3.11.6 Telecommunication**

The VIC will have a centralized internet access points located at with the manager's office. From here, a cabled connection to all the other sections of the VIC through underground conduits complete with inspection pits will be established. Routers will be installed in the VIC to ensure adequate wireless internet coverage for all guests / visitors and management.

Installation of provisions for a PABX system will be done at the project sites. It is also proposed that handsets and call card telephones located in the data communication centre capable of taking the exchange lines and telephone extensions to the various sections of the VIC will be provided for use at the VIC.

#### **3.11.7 Management Services**

Management Services will also be included in day-to-day operations. Management services will include waste management activities and recycling functions, deliveries of supplies, water management, electrical management, maintenance management and security in an around the Project sites.

A simple panic system at the reception area, wirelessly connected to the security service provider's call centre as the only security provision for this site is being proposed by the proponent. A competent security provider will be consulted at the design phase to ensure their needs are seamlessly integrated in the design.

Tourists / visitors equate the image and appearance of a VIC with the quality of service and advice they will receive. Workstations and office conditions shall be checked on a regular basis, to ensure they are welcoming to the visitor and it lives up to the expectation. The checklist provides an example of an operational checklist that may assist the VIC official to note or customise. The purpose of the checklist is to ensure that the VIC is ready before the doors are opened for business. The physical condition of the VIC shall be monitored throughout the year, to ensure that it remains neat and tidy all the time. In essence, it shall be every official's responsibility to ensure that the VIC looks clean, neat and tidy all the time.

### **3.11.8 Parking and traffic control**

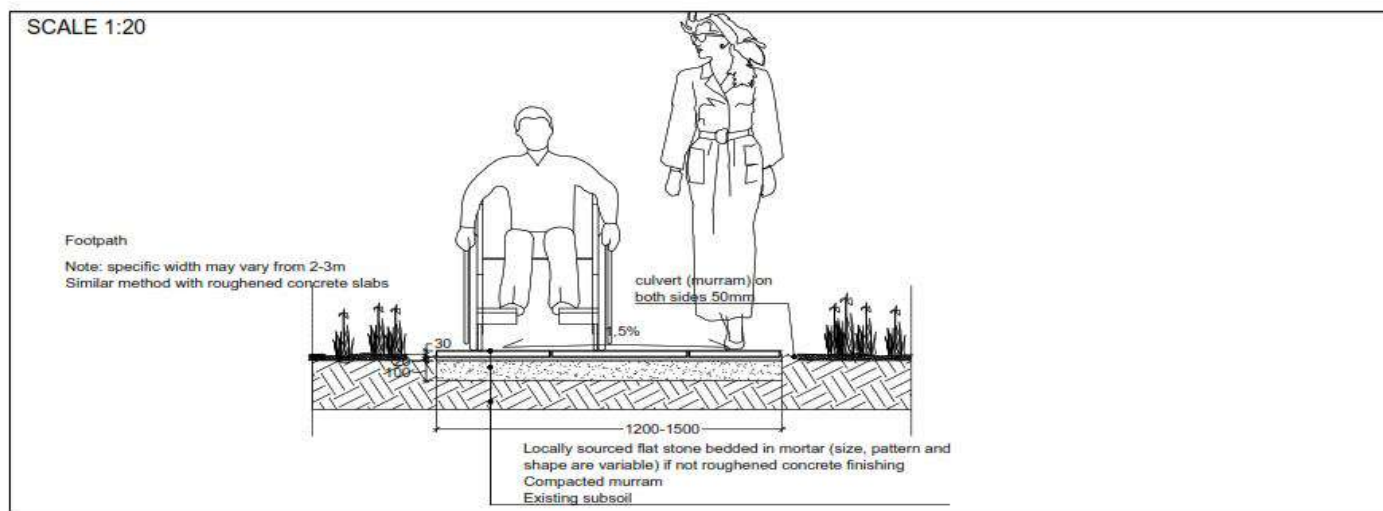
The reception area will be the first point of contact for visitors entering the CFRs using the overland road transportation. Appropriate access into the VIC has been provided through the existing access routes leading to a guest parking area whose capacity has been designed basing on the specific CFR needs. In addition to that, there are also numerous walk ways interwoven into the VIC grounds. Internal roads and walkways will be developed in a manner which ensures minimal impact and takes the sensitivities of the associated sites into consideration.

### **3.11.9 Emergency response and preparedness**

Crises in the tourism industry are not restricted to major weather or adverse geologic processes but also epidemics which also place exogenous shocks on all tourism systems. Health outbreaks such as the foot and mouth disease, SARS epidemic, the avian influenza pandemic and the most recent COVID - 19 have resulted in decreased demand within multiple tourism sectors. Human-caused interferences and equipment failures coupled with poor housekeeping have also exposed system vulnerabilities with consequential effects on tourism.

Awareness and preparedness for emergencies at the VIC shall be a tool for bringing visitors, staff, community representatives and local authorities, together to allow effective communication about risks and planning for emergency response. The proponent shall provide a unified structure to support the VIC staff and visitors on matters related to the four pillars of emergency management, namely mitigation, preparedness, response and recovery. The structure will help reduce the vulnerabilities and risks and lessen the potentially adverse impacts to visitor experiences during emergencies at the VIC proposed. NFA through the different sector managers / rangers.

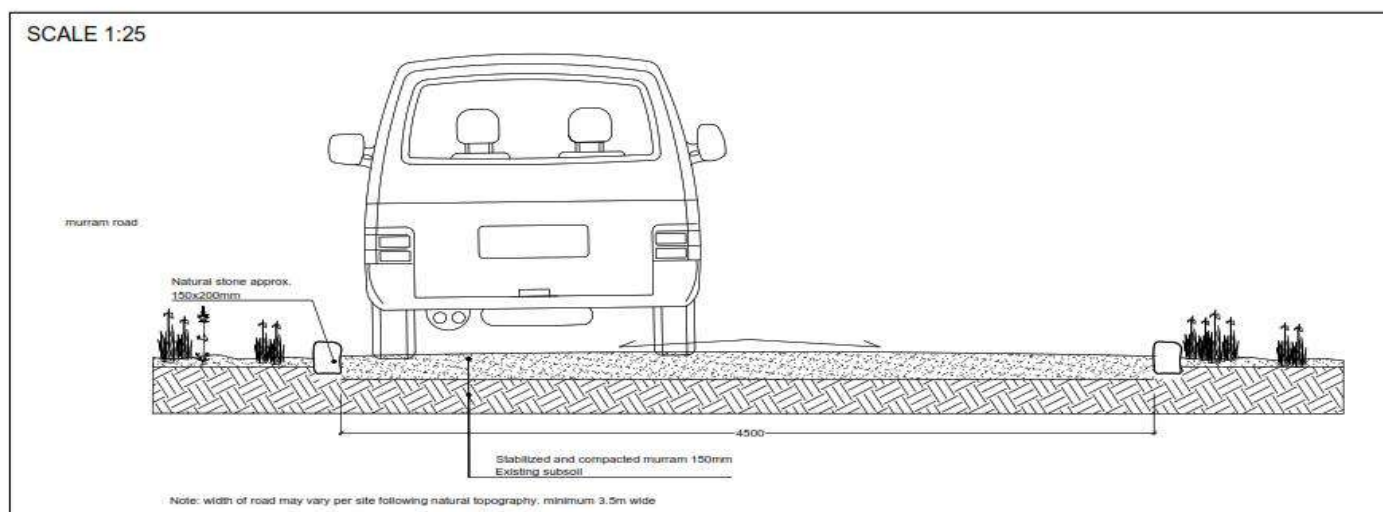
- a) Development of VIC specific risk management policies and plans outlining the VIC's commitment to incorporating the principles of risk management. The risk management plans shall identify any potential risks to the visitor centre, the likelihood of that risk occurring and steps to reduce risk.
- b) Developing and implementing emergency procedures including steps to take during an emergency, contact numbers, evacuation maps and emergency equipment (e.g., fire extinguishers and fully equipped first aid kit), the proponent shall ensure that the medical clinic is fully stocked and run efficiently
- c) Formulating incident report form for the VIC. This form shall be used when there has been an incident involving a staff member and/or member of the public, in and around the visitor centre.
- d) Formulation of policies guidelines that shall be followed at the VIC so that staff are aware of their rights and responsibilities. These may include; OHS, social media, Smoking, Code of Conduct, etc.



#### KEY & REFERENCES



Examples of large natural stones in mortar



|                                                                                               |                                                    |                           |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------|
| <p>FEW</p> <p>FWA UWA<br/>Plot 14/17<br/>200 500 (m)<br/>info@few.co.uk<br/>www.few.co.uk</p> | LANDSCAPE DRAWINGS                                 | SCALE                     |
|                                                                                               | VISITOR INFORMATION CENTRES<br>FOR PROTECTED AREAS | 1:25 - 1:25               |
|                                                                                               | Client<br>World Bank Group Uganda<br>(NFA & UWA)   | PROJECT<br>A3 (297x430mm) |
|                                                                                               | LA2 ROADS, PATHWAYS, STEPS                         | DATE<br>31.07.22          |
|                                                                                               | FINAL                                              | PROJECT NO.<br>380        |
|                                                                                               |                                                    | DATE<br>LA_2              |

Figure 3.11: An illustration of walkways and driveways at the proposed VIC

### **3.11.10 Crowd control at the VIC**

When a facility fails to properly manage visitor flow, it often leads to a disappointing visitor experience. It's on the extreme (busiest or slowest) days that the critical importance of this aspect of design is revealed. Interpretive facilities must be able to graciously handle large crowds at peak times and yet not feel cavernous or intimidating to small groups that visit during a less busy day. Below are some of the crowd control solutions that shall be implemented at the VIC;

- a) Queue management systems, which will help staff avoid potential chaos by offering visitors virtual queues. A virtual queue (VQ) will allow the information centres to reduce the number of people within VIC as well as the number of people waiting in line by using a virtual pre-booking and queuing system; and
- b) Signs are some of the best invisible crowd control solutions. Clear, well-placed, large signs not only tell people where to go, but they do it ahead of time. If an emergency situation occurs, a well-placed sign cues people where to go and diminishes the likelihood of a pileup. In any setting, the best way to manage crowd flow is to communicate with your guests. It is important to place information in key locations where people will be looking out for maps, restrooms, seats, or food and beverages. In addition, a customer service desk where staff can assist guests with their information is also necessary. In case of an emergency, the use of a PA system to inform guests of safety procedures will be highly recommended.

### **3.11.11 General health and safety at the VIC**

The VIC needs to comply with the Occupational Health and Safety (OHS) regulations and should have a valid OHS certificate all the times. VIC form part of the workplace and need to comply with the OHS requirements for VIC officials and the public or tourists who visit the facility and therefore they have an obligation to comply with the workplace, health and safety issues.

For the proposed VIC, NFA shall develop, implement and maintain occupational health and safety systems, policies, procedures and standards that will minimise work related injuries and illness and provide safe work facilities and equipment; including the resources and training necessary to assist in maintaining a safe work environment. The measures shall cover but not limited to the following aspects:

- a) How to raise an emergency alarm;
- b) Who the emergency security contact person is;
- c) Location of emergency exit/escape doors and procedures; and
- d) Where to assemble in the case of emergency and evacuation; and display of signage & emergency evacuation charts within the VIC.

### **3.11.12 Record keeping**

Record-keeping forms part of mandatory administrative functions for any organisation and proposed VIC are also expected to do the same. The VIC shall at all times ensure that all transactions taking place at the VIC are recorded and a systematic audit of business transactions takes place on regular basis to ensure compliance with good business management practices. The transaction record-keeping shall include all documents that are relevant for the purpose of ascertaining the business's income and expenditure. Records shall be kept for a minimum of five years from the date of transaction. There are various kinds of records that shall be kept and for the purpose of the VIC the records that will be kept may include although not limited to the following:

1. Financial records;
2. Staff records;
3. Records of accidents and incidences
4. Visitor statistics;
5. Visitors' book;
6. Grievance records; and



## 7. Monitoring/audit records.

### 3.12 Details of the Proponent and investment cost

The planned proposal is for a phased approach to the development and according to the proponent, the estimated investment cost for the project is \$941,213.80 (nine hundred forty one thousand two hundred thirteen dollars and eighty cents) for the Budongo VIC. The project will be implemented by the National Forestry Authority. The primary contact information of the proponent is given in table 3.5 below.

Table 3.5: Details of the proponent

| No                                                                 | Bill selection description                     | Estimated cost (Excl VAT)- (US \$)                        | VAT (US \$)       | Amount | Estimated (Inc VAT) | Total |
|--------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------|-------------------|--------|---------------------|-------|
| <b>Estimated cost of Structures, Services &amp; External Works</b> |                                                |                                                           |                   |        |                     |       |
| 1                                                                  | Preliminaries                                  | 42,868.00                                                 |                   |        |                     |       |
| 2                                                                  | Civil/Main Builder's Work                      | 430,288.49                                                |                   |        |                     |       |
| 3                                                                  | Mechanical and Electrical costs                | 129,137.60                                                |                   |        |                     |       |
| 4                                                                  | External Works                                 | 38,688.00                                                 |                   |        |                     |       |
| 5                                                                  | Provisional Sums                               | 20,500.00                                                 |                   |        |                     |       |
| 6                                                                  | Contingency                                    | 33,024.10                                                 |                   |        |                     |       |
| 7                                                                  | Environmental & Social Management Costs        | 23,000.00                                                 |                   |        |                     |       |
| <b>SUB-TOTAL.</b>                                                  |                                                | <b>716,506.19</b>                                         |                   |        |                     |       |
| 8                                                                  | Professional Fees                              | 71,650.62                                                 |                   |        |                     |       |
|                                                                    | <b>TOTAL ESTIMATED INVESTMENT COST (US \$)</b> | <b>788,156.81</b>                                         | <b>143,574.99</b> |        | <b>941,213.80</b>   |       |
| <b>Name</b>                                                        |                                                | <b>National Forestry Authority</b>                        |                   |        |                     |       |
| Current registered address                                         |                                                | Plot 10/20, Spring Road, P.O. Box 70863, Kampala - Uganda |                   |        |                     |       |
| Contact Person                                                     |                                                | Sylvia Tumusiime                                          |                   |        |                     |       |
| Email                                                              |                                                | Tel: +256-312-264035/6                                    |                   |        |                     |       |
| Telephone                                                          |                                                | E-mail: sylvia.tumusiime@nfa.go.ug                        |                   |        |                     |       |
| Estimated project cost                                             |                                                | \$941,213.80                                              |                   |        |                     |       |

## **4.0 STUDY METHODOLOGY**

### **4.1 Introduction**

The ESIA approach was structured so as to cover the requirements under the NEA (2019) and the National Environment (Environmental and Social Assessment) Regulations, 2020. The approach mainly involved an understanding of the project background, technology and processes, implementation plan and operation activities. In addition, baseline information was obtained through detailed physical and biological investigation of the proposed project and its surrounding areas, stakeholder consultations (which included discussions with local communities, local administration, private sector, Government and private organizations), photography and, continuous discussions with the proponent.

A multidisciplinary environmental team carried out the assessment. Key methodologies adopted for the study were desktop research, consultation with stakeholders, field research, laboratory analysis and impact assessment and evaluation. These are discussed in detail below.

### **4.2 Socio-economic survey methods**

#### **4.2.1 Literature review**

Literature review involved going through project documents related to tourist development study reports, CFR management plans, District development plans, legal, policy and other related documents. Likewise, reference materials on physical, biological, and socio-economic attributes of the project sites were also reviewed. From the exercise, key aspects relevant to the project were addressed including:

- project area, location and pertinent features;
- project options under consideration;
- project components, activities and phases involved;
- scope and area to be covered during full assessment study;
- specific and general impacts that may be associated with the project;
- Identifying legal, policy and institutional frameworks that may be associated with the proposed project and requirements for undertaking the ESIA study.

#### **4.2.2 Stakeholders consultations**

Different methods were employed by the ESIA team during the stakeholder's consultation process. These included consultative and public participatory meetings; individual interviews focus group discussion. The consultations were done mainly with the technical personnel at Government Ministries, Departments and Agencies (MDAs), Local communities, Cultural institutions, District Local Governments. Structured questionnaires were used to consult key stakeholders especially at national level. Public consultative meetings were conducted at local level to probe for the environmental, social, cultural and economic implications of the proposed project.

The stakeholder consultations aimed at:

- introducing the project to stakeholders and potential affected and benefited people;
- understanding stakeholders' concerns regarding various aspects of the project proposal;
- providing clear and accurate information about the project to communities living in or surrounding the project areas in order to obtain their concerns and views regarding direct and indirect potential environmental, social, cultural and economic impacts that may arise from development of the proposed project as well as preferred mitigation measures;
- clarifying identified impacts, to uncover any unidentified ones and to gather relevant information about the biophysical, socio-economic and cultural environments that would be potentially affected by the contemplated activities.
- allowing stakeholders to air out their opinions about and expectations from the proposed project, and

- promoting understanding through active participation of individuals, organizations as stakeholders who have a stake in the project and its outcomes.

#### **4.2.3 Field Observations**

Field observations were done to evaluate key biophysical and socio-economic components that might be affected by the proposed project, both, positively and negatively. These included physical assessment of the site to inform vegetation clearing patterns of the site during the ecological impact assessment. Habitat observation was performed to guide floral and faunal impact studies. The site layout was also verified so as to provide consultants with the site overview in relation to the location of different project facilities and how that may lead to positive and/or negative environmental and social impacts.

#### **4.3 Field Surveys**

Field surveys were adopted during data collection; the findings of the field surveys were reinforced by desk-based data. Through desk-based studies, a range of information was gathered to establish the original ecological and environmental setting from the relevant reports. The field survey were conducted in May and June 2022 to collect additional site-specific information on habitats, species presence, and site disturbances. The survey locations were marked using Global Positioning System (GPS) Garmin e-trex 20 unit. Photographs were taken and notes made at each different point of interest to record the habitat, species of flora and fauna as well as landscape features of importance.

Sensitivity of habitats was assessed from presence of i) threatened species in accordance to IUCN conservation assessment, ii) rarity, iii) endemism; presence of iv) fragile watersheds, v) steep slopes, vi) breeding grounds. Other parameters that were investigated included species richness, and invasive species.

##### **4.3.1 Air quality assessment**

This assessment involved taking measurements of the various parameters of environment air quality, noise, temperature and relative humidity. Integration of these parameters was given an overall perception of positive and negative impacts due to the activities to be undertaken at the VIC.

Several sampling locations were selected within the proposed area for project implementation and outside the premises to facilitate determining the effect of the proposed VIC on to the surroundings. The data of ambient air environment was collected for the mentioned parameters as given below:

1. Respirable Suspended Particulate Matter (RSPM).
2. Formaldehyde
3. Volatile Organic Compounds (VOC).

VSON air quality detector was used to measure air quality parameters. As indicated, air quality measurements were taken in several section of the site and in selected locations outside the proposed area for project development.

##### **4.3.2 Sound level and humidity**

The sound level was picked using the SLM-25 Sound Level Meter. The meter provides a range of 35 to 130dB (0.1dB). Sound level measurements met IEC 61672 class 2 using A frequency weighting and fast response time.

Readings were taken at different points within and outside the project site. Results obtained from noise monitoring were processed and are presented in this ESIa report. The noise levels were compared with the National Environment (Noise Standards and Control) Regulations, 2003 and the World Bank EHSG on Noise. The team utilized a range of specialized equipment

for measuring air quality, noise, light temperature and relative humidity. Table 4.1 below shows the specialized equipment used for the ESIA.

Table 4.1: Specialized equipment to be used for the ESIA

| S/N | Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Image                                                                              | Parameters                                                                                                                                                                                                               |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | SLM-25 Sound Level Meter with Backlit Display High Accuracy Measuring 30dB~130dB with Data Logging Function Instrument Compact Professional                                                                                                                                                                                                                                                                                                                                                                                           |  | <ul style="list-style-type: none"> <li>Noise</li> </ul>                                                                                                                                                                  |
| 2   | VSON air quality detector is a smarter detector that monitors all day, from formaldehyde, benzene to air pollution index, temperature and humidity. It has eight characteristics, namely accurate detection of formaldehyde, accurate detection of TVOC, air convection system, real-time temperature detection, real-time humidity detection, air quality curve recording analysis, 24-hour air monitoring and memory calibration. With patented active air docking technology, the measurement is more sensitive and more accurate. |  | <ul style="list-style-type: none"> <li>Particulate matter PM<sub>2.5</sub>, PM<sub>10</sub>, PM<sub>1</sub></li> <li>Formaldehyde</li> <li>Volatile compounds</li> <li>Temperature</li> <li>Relative Humidity</li> </ul> |

### 4.3.3 Soil analysis

Soil is a very specific component of the biosphere because it is not only a geochemical sink for contaminants, but also acts as natural buffer controlling the transport of chemical elements and substances to the atmosphere, hydrosphere and biota. However, the most important role of soil is its productivity, which is the basis for the survival humans (Kabata-Pendias and Pendias 2001).

Soil samples were picked from identified hot spot areas and taken for laboratory analysis. Laboratory analyses were performed at the Makerere University - Chemistry Department using certified methods which include: -

- Soil texture determination by hydrometer method
- Bulk density determination by the soil infill method
- Organic matter determination
- Soil pH and electro conductivity determination

The parameters that were analysed included; pH, Conductivity, Oils & grease, Bulk Density, Organic matter and texture class.

#### **4.4 Flora survey methods**

Habitat characterization was done during the site visits in order to establish major habitats within the entire proposed project area. The major habitats were identified. Habitat characterization helped in alignment of transects for vegetation sampling and identifying sites for fauna study. This helped to capture the biodiversity among different habitats and thus, ensured recording of different biodiversity found at the proposed site while surveying the various habitats.

##### **4.4.1 Literature review**

The task involved reviewing information on methods for undertaking flora surveys. Specifically, the review focused on analyses for ecological communities, vegetation structure and composition, as well as plant communities and tree species.

##### **4.4.2 Vegetation sampling**

Vegetation sampling was done within 10 circular plots established and at the interval of 100 m in each transects (1 Kilometre long). Plot sizes differed according to the vegetation types; 15m radius in woodlands and 30 m radius in grassland. Circular plots are expeditious in allowing accurate area sampling with minimal effort for plot layout (a single central marker for permanent location) and they reduce the number of edge decisions because they minimize perimeter to area ratio. During the vegetation survey, climbers, fern, grasses, sedges, herbs, shrubs and trees were sampled.

##### **4.4.3 Vegetation and flora classification**

The vegetation and flora assemblage at the proposed site was classified following descriptions made by Langdale-Brown et al., 1964. During the field surveys, records of the features of the landscape and environment including the dominant habitats and common species within the survey areas were made along transects. A transect method was used to sample the vegetation and flora at the proposed sites. Each transect was slowly walked, carefully observing the turnover of vegetation communities and flora present. Along each transect, species presence, disturbances, signs of usability and presence of invasive species observed were recorded.

#### **4.5 Fauna survey methods**

Sites for fauna study and vegetation survey were identified and located in major habitat types such as woodlands, grassland (fallow) around the sites.

##### **4.5.1 Literature review**

Like in flora survey, fauna survey exercise were preceded by a review of literature on relevant methods/techniques. These included, but were not restricted to, trapping, tracking, tracing, opportunistic observation, etc.

##### **4.5.2 Large mammals survey**

To understand whether the large mammals are present or absent at the site and in areas adjacent to the proposed site the following combination of methods was used:

###### **4.5.2.1 Sighting (casual encounters)**

The presence and/or absence of large mammals at the proposed sites was recorded along transects aligned for vegetation survey.

###### **4.5.2.2 Reports from local residents**

Local people were randomly selected and interviewed to give information about the presence or absence of large mammals at the proposed site and adjacent areas.



#### **4.5.2.3 Animal traces (signs/indices)**

Different signs/indices indicating the presence of large mammals at sites were traced along transects aligned for vegetation sampling and randomly while walking within the site.

#### **4.5.3 Small Mammals Survey**

Small mammals are a group of flying and non-flying species grouped together because of their relatively small size (Corominas, 1999). Different from other fauna group, small mammals include species with individuals that do not exceed 5 kg, despite obvious anatomical and ecological differences (Davies and Howell, 2002; Hayward and Phillipson, 1979; Fleming, 1979). In Africa, small mammals are found in the orders Rodentia, Insectivora, Carnivora, Lagomorpha, Chiroptera, Primates and Pholidota.

A combined array of commonly used methods was used to sample small mammals at the site as described below.

##### **4.5.3.1 Sherman traps**

Rodents and insectivores were sampled using Sherman traps (standard size) baited with toasted groundnuts and peanut butter and sardines. At main trap sites, traps were placed around three bucket pitfall lines, approximately 5m apart.

##### **4.5.3.2 Bucket pitfall traps**

Small mammals, amphibians and reptiles were sampled using bucket pitfall traps. 50 m linear transects were created at each zoological trap site location whereby 10 litre plastic buckets were positioned 5m apart from each other. Buckets were sunk into the ground with their rims flush to ground level. The buckets had small holes in their base to allow water to drain from them. A vertical polythene sheet (approximately 0.5m high) was run along the bucket line crossing the centre of each bucket to form a 'drift fence'. A 10-15 cm lip of plastic sheeting was left flat on the ground onto which soil and leaf litter was placed to prevent any gap in the drift fence at ground level. Animals moving into the area from either side were channelled along the plastic sheet towards the bucket traps. Each bucket pitfall line was placed at 150m apart so as to encompass a range of micro-habitats. Brief habitat notes were taken for each bucket position. Traps were checked daily early in the morning and evenings for trap site period and data about the capture and recaptured animal was recorded on standardised data sheets.

#### **4.5.4 Amphibians and reptiles survey**

Different groups of amphibians and four main groups of living reptiles; snakes, lizards, chameleons, and chelonians (tortoise and terrapins) were surveyed using the following techniques:

##### **4.5.4.1 Timed man-hour searches**

Timed searches (opportunistic surveys) for herpetofauna were conducted at the site during both day and the night with the search time ranging from 1 to 6 man hours. Visual searching included the examination of hiding sites such as under logs and in crevices.

##### **4.5.4.2 Audio-strip survey**

Anuras (frogs and toads) are most active at night and most noticeable where males are vocalizing. Visual searching for vocalizing individuals is the most productive method of locating and capturing male anuras. Vocals/calls helped in the identification of anura species because of vocal variations among species.

##### **4.5.4.3 Bucket pitfalls**

The use of drift fences with bucket pitfall is the commonest technique for studies of individual species or hyperto faunal communities and has been used with success in trapping of amphibians and reptiles (Mitchell et al., 1993; Heyer et al., 1994; Handley and Varn, 1994;

Kok et al., 1997; Msuya, 2001). The assumption behind the use of pitfall traps is that leaf-dwelling as well as those which may be moving to or from aquatic breeding sites can be effectively sampled using bucket pitfall traps. However, tree frogs (family Hyperoliidae) and foam nest frogs (family Rhacophoridae) are not adequately sampled using this technique. Such herpetofauna species are mostly recorded opportunistically. In addition, bucket pitfall traps are not suitable for sampling large reptiles such as large monitor lizards, snakes, or highly arboreal forms. To capture a wide range of herps therefore, a combination of methods was used. Data on reptiles and amphibians was recorded on standard recording forms which included habitat and altitude of each search, as well as the identification of any captures.

#### **4.6 Avifauna Survey**

Avifauna refers to birds in a geographic region, a habitat region, a political boundary region or even a time period. Ornithologists and conservationists study a region's avifauna for both short- and long-term changes that may indicate population shifts, evolutionary adaptations or the rise or fall of threatened species. A number of different methods were employed for this survey as described in the following sections.

##### **4.6.1 Timed Species Count (TSC)**

Timed species count (TSCs) were employed by wandering around using existing road networks. In TSCs, birds were given scores of 6 to 0 depending on the sighting period of one-hour long survey. Six scores were given for all birds recorded within the first 10 min of each TSC, 5 scores for the next 10 minutes and so on. This method is recommended for woodland and bush habitats (Pomeroy and Tenengecho, 1986), in addition to producing a checklist; it also provides a reasonable measure of relative abundance (Bibby et al. 2000). Most of the TSCs were carried out in the morning and evening, though some were done in the middle of the day.

##### **4.6.2 Opportunistic observation**

Opportunistic observations were carried out to target species that are very hard to observe with TSCs and do not come down to mist nets.

##### **4.6.3 Indices (calls/songs, nests and feathers)**

Calls/songs, nests and dropped feathers were used in the identification of some birds indirectly.

#### **4.7 Mapping of the proposed site**

##### **4.7.1 Mapping methods**

Boundaries mapping of sites was based on the beacons coordinate list from the site's survey plan; these were verified by a Garmin GPS. The data processing and map compilation was carried out in Arc GIS pro 10.2 software, existing features locations were mapped basing on high resolution satellite imagery while optimal sites of the proposed features were mapped basing on the proponent's desired choice locations, land cover/vegetation and current land use was also based on a satellite image followed by ground truthing using a Garmin GPS.

##### **4.7.2 Features mapped**

The mapping exercise entail a number of features including: - Project location maps and Site plan map.

##### **4.7.3 Review of policy, legal and institutional framework**

Part of the study included review of policies, legal and administrative framework and requirements through identification of legal documents, guidelines and planning procedures. These were reviewed in order to ensure that necessary measures are included in the design and implementation of the project to meet the appropriate requirements.

## **4.8 Analysis of Alternatives**

An analysis of alternative options regarding project development was conducted including the “no project” option. A comparison of environmental consequences associated with each was also be made.

### **4.10 Mitigation and environmental monitoring plan**

Practical and cost-effective measures were identified to reduce the potential impacts to acceptable levels through the incorporation of. A mitigation plan of such measures was prepared. An environmental monitoring plan was developed outlining the nature, frequency, location and methodology of monitoring that shall take place during construction, operation and decommissioning of various components under consideration.

#### **4.10.1 Impact prediction and evaluation**

Project activities were linked with environmental baseline conditions in the study area to identify the potential impacts. A rating criterion was then developed and used to evaluate the significance of the impacts so that relative comparisons between the impacts could be done.

Each impact was ranked according to extent, duration, magnitude and probability of occurrence. From this criterion, a significance rating was obtained and the method and formula is described here below. Appropriate mitigation measures were then designed to avoid, minimize or compensate for the adverse environmental and social impacts and inform the Environmental Management Plan.

##### **4.10.1.1 Status of the Impact**

The impacts were assessed as either having a:

- Negative effect (i.e., at a ‘cost’ to the environment),
- Positive effect (i.e., a ‘benefit’ to the environment), or
- Neutral effect on the environment.

##### **4.10.1.2 Extent of the Impact**

The extent of each impact was rated as being one of the following:

- (1) Site (i.e., within the boundaries of the site),
- (2) Local (i.e., the area within a 5-km radius of the project site),
- (3) District (i.e., Host districts),
- (4) Regional (i.e., Central Uganda)
- (5) National (i.e., Uganda), or
- (6) International (i.e., Eastern Africa).

##### **4.10.1.3 Duration of the Impact**

The lifetime (duration) of each impact was rated as being one of the following:

- (1) Immediate (I) (< 1 year)
- (2) Short term (S) (1 – 5 years)
- (3) Medium term (M) (6 – 15 years)
- (4) Long term (L) (the impact will cease when the operation stops)
- (5) Permanent (P) (no mitigation measure of natural process will reduce the impact after construction.

##### **4.10.1.4 Magnitude of the Impact**

The intensity of severity of each impact was rated as being one of the following:

- (0) None (N) (where the aspect will have no impact on the environment),
- (2) Minor (Mi) where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
- (4) Low (L) (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected,

- (6) Moderate (Mo) (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
- (8) High (H) (where natural, cultural or social functions or processes are altered to the extent that they will temporarily cease), or
- (10) Very high (VH) (where natural, cultural and social functions or processes are altered to the extent that they will permanently cease).

#### 4.10.1.5 Probability of Occurrence

The likelihood of the impact actually occurring was indicated, probability was then estimated on a scale and a score assigned as either:

- (0) None(N) (the impact will not occur),
- (1) Improbable(I) (the possibility of the impact materializing is very low as a result of design, historic experience, or implementation of adequate corrective actions),
- (2) Low probability(L) (there is a possibility that the impact will occur),
- (3) Medium probability(M) (the impact may occur),
- (4) High probability(H) (it is most likely that the impact will occur), or
- (5) Definite(D) (the impact will occur regardless of the implementation of any prevention or corrective actions)

#### 4.10.1.6 Significance of the Impact

Based on the information contained in the sections above, the potential impacts were assigned a significance weighting (S). This weighting was formulated by adding the sum of the numbers assigned to extent (E), duration (D) and magnitude (M) and multiplying this sum by the probability (P) of the impact as follows:  $S = (E+D+M) P$ . The derived significance weighting scale is given below:

- (<30): Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- (30-60): Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated).
- (>60): High (i.e., where the impact must have an influence on the decision process to develop in the area).

Residual and Cumulative impacts were also identified and assessed. Table 4.2 provides a description of the colour coding adopted in impact analysis.

Table 4.2: Colour coding description of adopted impact analysis

| SW    | -ve Rating       | Definition                                                                                                                                                                                                                                              | +ve Rating         |
|-------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 0     | NO IMPACT<br>LOW | A potential concern or impact, which, upon evaluation, is found to have no significant impact                                                                                                                                                           | NO IMPACT LOW      |
| <30   | VERY LOW-LOW     | Impacts will be localized and temporary. Impacts result in minor alterations to the environment and can easily be alleviated by the implementation of effective mitigation measures.                                                                    | [+] VERY LOW - LOW |
| 31-60 | MODERATE         | Impacts of moderate magnitude locally to regionally in the short term. The impact results in medium alterations to the environment and can be reduced or eliminated by the implementation of effective mitigation measures.                             | [+] MODERATE       |
| >60   | HIGH             | Impacts of high magnitude locally for longer than 6 years and/or regionally and beyond. The impact results in major alterations to the environment even if effective mitigation measures are implemented and will have an influence on decision-making. | [+] HIGH           |

## **5.0 ENVIRONMENTAL AND SOCIO-ECONOMIC BASELINE**

The environmental and social (including socio-economic) impact assessment is focused on possible changes to the existing (or baseline) environmental and socio-economic features within the zone of influence of the Busingiro Visitor Information Centre Project (pre-construction, during construction, and during operation). This requires a sound understanding of the spatial and temporal features of the existing conditions in and near the project area, and their vulnerabilities, recovery potential, and relative importance in the overall context of Budongo Central Forest Reserve and Buliisa District. This chapter therefore provides information on the baseline environmental and socio-economic conditions in and near the project area, based on primary data (from field surveys; specific methodologies are discussed where relevant) and secondary data (accessible reports).

### **5.1 Location**

Buliisa District is located in the Mid-Western part of the Uganda in the Albertine rift valley. It is bordered by Pakwach and Nwoya districts in the North, Masindi in the East, Hoima in the South, Nebbi and Democratic Republic of Congo in the west.

Buliisa District covers an area of 3200 sq. kms comprised of open water and land. It is surrounded by Lake Albert, Albert Nile, game reserves/park and Budongo forest. The bigger part of the land area of the district is within the Murchison falls national park, Bugungu game reserve and Budongo forest.

The proposed visitor information centre is located in Budongo Central Forest Reserve (BCFR) within Busingiro camping site in Akiimi 'B' Village, Garasoya Parish, Kihungya Sub – County Buliisa District.

### **5.2 Legal status, ownership and background**

The Budongo Management Plan Area (BMPA) constitutes of eight forest blocks namely: - **Biiso**, Siba, Busaju, East Waibira, West Waibira, Kitigo, Nyakafunjo and Kaniyo-Pabidi.

Budongo forest was first gazetted as a partially demarcated Crown Forest Reserve under Legal Notice No. 87 of 1932. Siba and Kitigo forests were first gazetted as un-demarcated Crown Forest Reserves under Legal Notice Nos. 132 of 1 937 and 41 of 1939 respectively. The designation of Budongo, Siba and Kitigo were changed from Crown Forest Reserves (CFRs) under Legal Notice No. 41 of 1 948. Budongo, Siba and Kitigo were amalgamated and re-gazetted as Budongo Central Forest Reserve (BCFR) under Legal Notice No.11 of 1 963 with an area of 50, 233ha. Busaju and Kaniyo-Pabidi were originally Local Forest Reserves managed by Bunyoro Kingdom government. They were transferred to the central government under Statutory Instrument No.176 of 1 968. BCFR is managed subject to the provisions of the National Forestry and Tree Planting Act 2003 and its management and control are vested in the National Forestry Authority (NFA) under section 52 (1) of the same Act.

People neighbouring the Forest Reserve can obtain free of charge any dry wood in reasonable quantities for domestic use in accordance with section 33 (1) of the Forestry Act 2003. Domestic animals are allowed to visit water and salt licks in the reserve on specific arrangements with NFA but grazing will require a license.

The forest lies above the escarpment shielding the Albertine rift valley, in the districts of Masindi, Buliisa and Hoima. To the South, most of forest reserve lies north of the Masindi to Butiaba Road. Kaniyo-Pabidi is situated East and West of the Masindi to Paraa Lodge Road starting at 20km from Masindi. The geographical location of the Reserve is between latitude 1 0 35' and 1 0 55' North and between longitude 31 0 18' and 31 0 42' East. The BMPA is located as follows; Buliisa District 46,311 ha (56.11 %). Hoima District 668ha (0.81 %) and Masindi District 35,551 ha (43.08%).



Budongo MPA has a total area of 82,530 ha consisting of 44,340 ha (53.7%) of closed forest and 38,190 ha (46.3%) of young colonizing and woodland forest. It is divided into eight blocks namely; Siba, Busaju, Biiso, Nyakafunjo, Kitigo, East Waibira, West Waibira and Kaniyo-Pabidi. Table 5.1 presents the composition of the forest blocks in Budongo MPA.

Table 5.1: Composition of the forest blocks in Budongo MPA

| Forest block | Closed        | Forest | Grassland/<br>Woodland | Total  |
|--------------|---------------|--------|------------------------|--------|
| Budongo      | Biiso         | 4,264  | 340                    | 4,604  |
|              | Nyakafunjo    | 7,701  | 820                    | 8,521  |
|              | East Waibira  | 9,917  | 900                    | 10,817 |
|              | West Waibira  | 11,097 | 1,555                  | 12,652 |
|              | Siba          | 5,085  | 1,695                  | 6,780  |
|              | Kitigo        |        | 9,411                  | 9,411  |
|              | Busaju        | 1,311  | 518                    | 1,829  |
|              | Kaniyo-Pabidi | 4,965  | 22,951                 | 27,916 |
| TOTAL        |               | 44,340 | 38,190                 | 82,530 |

### 5.2.1 Boundaries

The boundary length of the reserve is 281km of which 110km are natural features e.g. rivers and the rest (170km) are marked by cut lines regularly maintained and other cut lines with some live markers. Corners of the cut lines are marked by earth cairns and direction trenches with intermediate cairns and trenches between the different corners.

### 5.3 Topography and Altitude

Buliisa district is mainly in the rift valley floor with the highest point at 1800 metres above sea level.

Budongo Forest Reserve is situated to the North-East of Lake Albert at the edge of the Albertine Rift valley. Generally, the topography is rolling with a general slope to the escarpment of the valley to the west. Altitude is generally low and varies between 914m and 1097m above sea level. Over the escarpment, there is a sudden drop of about 300m to reach the Butiaba flats on the lake shores (618m A.S.L).

### 5.4 Geology and Soils

Buliisa district lies in the Albertine Graben which is a Cenozoic sedimentary rift basin developed on the Precambrian orogenic belts of the African craton. Available geological and geophysical data suggest that the Albertine Graben has undergone substantial tectonic movements and sedimentary layers of approximately 6 km thickness have been deposited in fluvial deltaic and lacustrine environments. The rocks are mainly classified as Pre-Cambrian basement and sedimentary rock formations (PEPD, 2008).

A vast part of Buliisa District is covered by Ferralitic soil which are mainly yellowish-red clay loams on sedimentary beds. There are also dark brown, black loams (Bugangari series) found along the axis of the warp. These two types of soil are of low to medium productivity. The soils of recent origin that consist of quartzite debris are found along the escarpment. Their depth depends on the vegetation cover and land use. They are suitable for coffee and maize. Rivers and valley beds mainly have grayish-black sands, which are base deficient and acidic. These alluvial soils are of low productivity. Table 5.2 presents the soil types in Buliisa District.

Table 5.2: Soil types in Buliisa District

| S/N | FAO Soil Class   | Area (ha) | % Area | Vulnerability to erosion |
|-----|------------------|-----------|--------|--------------------------|
| 1.  | Acric ferralsols | 35815.33  | 18%    | Yes                      |

| S/N          | FAO Soil Class   | Area (ha)           | % Area | Vulnerability to erosion |
|--------------|------------------|---------------------|--------|--------------------------|
| 2.           | Calcisols        | 19561.39            | 10%    | No                       |
| 3.           | Histosols        | 3660.185            | 2%     | No                       |
| 4.           | Luxic Ferralsols | 57791.95            | 29%    | Yes                      |
| 5.           | Open water       | 80847.9             | 41%    | -                        |
| <b>Total</b> |                  | <b>197,676.8 ha</b> |        |                          |

The underlying rocks of most BCFR are of pre-Cambrian origin consisting of gneiss, schists and granulites. Part of the southern Siba is underlain by Bunyoro-Kyoga series types of rock, which consist of mudstones, shales, phylites, quartzites and conglomerates of pluvial origin which have been metamorphosed.

BCFR soils are ferrallitic representing a final stage in tropical weathering. They are deep with little differentiation into clearly defined horizons. There is little or no reserve of weatherable minerals and the clay minerals all of the lattice type (Kaolinite), are associated with large quantities of iron oxide and occasionally hydrated oxides of aluminium. The heavier textured soils are more fertile and may even possess many features common to most ferrisols, which are sandy loams and sandy clay loams in the different parts of the CFR. Laterite is abundant in the form of concretions or sheet ironstones. The latter cover some high ground especially hill tops like that of Kamusenene. BCFR is underlain by quartzite rocks and generally variable from red loam containing small quantities of iron stone concretions which support forest vegetation to the ridge top pavements of solid cellular iron sheets. In Kitigo woodlands, there is an accumulation of carbon. In West Waibira block, several low rocky ridges occur with shallow soil outcrops of granulite. These ridges support quite distinct forest vegetation types characterized by an abundance of *Strychnos mitis* in association with *Cynometra alexandri* in the upper storey and *Celtis wightii* in the understorey.

## 5.5 Drainage

The major water body in the project area is Lake Albert which the district shares with four other districts; Hoima, Nebbi, Kibaale and Ntoroko and Democratic Republic of Congo. Buliisa shares a quarter of the Ugandan side of the lake.

The shoreline of the Nile Delta, a major wetland in Buliisa stretches along the shores of L. Albert. Stretches of papyrus are seen through to Butiaba and Kawaibanda linking to R. Waaki. Small pockets of wetland here include Boola, Waisoke, Booma, Waiga and Waaki.

Budongo forest constitutes part of the catchments area for rivers Bubwa, Sonso and Waisoke, which flow gently over the escarpment to Lake Albert. They are relatively shallow and small not exceeding 1 to 1.2m deep. The rivers may seasonally dry up or reduced to a trickle flow during dry seasons. Kaniyo-Pabidi to the North and Siba to the South are constituted by small riparian forest strips and tributaries of the three rivers Bubwa, Sonso and Waisoke which drain the forest and surrounding land.

## 5.6 Climate

Buliisa district receives a bimodal rainfall pattern with totals ranging from about 800 mm the Lake Albert flat rising rapidly further away to the east above the escarpment to between 1250 - 1500 mm per annum before tapering off to 1000 mm in the eastern border areas of the District. The peak periods are between March -May and September to December (Buliisa DDP, 2020/21-204/25).

Temperatures are relatively high varying between 26°C -35°C with the hottest spot of Buliisa District lying in the Rift Valley Zone. The relative humidity is highest in May and lowest in January, following the temperature pattern.

Budongo forest receives rainfall varying between 1397 and 1524 mm annually, on the average, from 100 to 150 rain days. The rains are characterized by thunderstorms and hailstorms. Rainfall pattern is bimodal with peaks in April- May and September to November, and occurs mainly in the afternoon as indeed elsewhere in the tropics, but morning and night rains also occur to lesser extents. The two rain seasons are separated by two dry seasons. December to March and June to July, the first being quite severe. More rain falls in the East and South East of the forest than in the North and West. In Kitigo, which is mainly grassland with parts changing into colonizing forest, rainfall is about 1045 mm annually.

## **5.7 Vegetation**

The vegetation of the district can be broadly classified into forest, savannah, grassland and swamps. Human activities have had a great influence on the natural vegetation in the district, such as deforestation, wetland degradation, river pollution and many others.

At least, 50% of the project area, is covered by Tropical High Forest (THF) communities classified as type D2 (medium altitude semi-deciduous *Cynometra-Celtis* forest) and 46% is classified as K (moist combretum savannah). The remainder comprises N1 (*Combretum-Loudetia* and N2 (*Combretum -Hyparrhenia*).

The D2 vegetation type has changed considerably following 70 years of selective logging and silvicultural treatment (tree stand improvement (TSI) by arboricide spraying), which favoured growth of valuable timber species especially mahogany. The original D2 (before the 1950s) has been replaced by mixed forest type, which was estimated at 65% of the whole forest area (Eggeling 1947) and stood at 85% of the whole forest (Plumptre, 1996). However, the original ecological characteristics are still recognisable and the forest can be divided into wooded grassland, colonising or woodland mixed forest, *cynometra* dominated and swamp forest types.

### **(a) Grassland**

Glades of grassland occur as enclaves or near external edges of the forest. The grassland patches, in a high rainfall area like that of Budongo, are promoted and perpetuated by annual fires set during the peaks of the dry seasons. These fires destroy all herbs, most the seed germplasm including young seedlings of forest trees.

### **(b) Colonising forest**

This type is found along margins of the forest invaded by several woodland tree species including *Albizia zygia*, *Sapium etipticum*, *Cordia africana*, *Maesopsis eminii* and *Spathodea campanutata*. It is estimated to cover about 5% of the whole forest area of Budongo. This area is not rich in biodiversity.

### **(c) Mixed forest**

There is more of the mixed forest type, covering 65% of the forest area. This type has been observed to be increasing as a result of opening up the canopy of the *cynometra* type during salvage harvesting. It is characterized by greater biodiversity of tree, shrub and herb species. As it progresses to maturity other species come as the *Gettis* spp., *Aningeria altissima*, *Atstonia boonei* etc.

### **(d) Cynometra forest**

The dominance of *Cynometra alexandri* in Budongo is found in the <10cm dbh class that is in seedlings and saplings. Many years of timber harvesting coupled with silvicultural treatment with arboricide, of the residual stand, have influenced the seral stages of a large area of Budongo forest. The mixed forest has increased as a result of opening the canopy of the *Cynometra* type. These openings have caused structural changes in the forest, which have significantly (though temporarily) halted the development of the old mature mixed forest to a

pure *Cynometra* climax community. According to Eggeling (1947) as much as 30% of the area of BCFR was dominated by *Cynometra alexandri* and this was increasing in area and number of stems per hectare at the expense of mixed forest.

#### **(e) Swamp forest**

Budongo forest is traversed by three main rivers and numerous streams providing an environment different from that of the well-drained sites. Valleys of the streams are characterized by vegetation of swampy conditions with species such as *Raphia farinifera*, *Bombax buonpezenze*, and *Calamus derratus*, the tall woody climbing cane among others. This forest type is the least biodiverse of all the Budongo forest types. Only species tolerant to wet soil environment are found in the stream and swampy areas of BCFR.

### **5.8 Areas of Socio-cultural importance**

#### **History of Royal mile**

The Royal Mile is found in the 793 km<sup>2</sup> Budongo Forest Reserve, within Bunyoro Kitara Kingdom that lies at the edge of the Albertine Rift and is attached to Kabalega (renamed Murchison) Falls National Park in the south. Known for its popularity as a traditional leisure stop-over for Uganda's royalty, the Royal Mile is a superb birding spot with many west and central African species, as well as a variety of sought-after key species.

The Royal Mile gets its name from Omukama of Bunyoro, Kabalega. It is a spectacular one-mile-long forest road that was made by Omukama Kabalega as military training ground for his Abarusura Army. It is reported that it is this very road that he used to escape from the colonialists, before he was arrested in Dokolo and exiled in the Seychelles Islands.

The road opens with a simple gate before sloping gently towards River Sonso in the middle of an expansive, natural symphony of hardwood trees rising high above the ground in what comes off like competition for the skies. This is what makes the Royal Mile one of the most ideal places in Uganda to have a guided birding tour.

### **5.9 Socio -economic environment**

The BMPA has several social and economic resources outlined here below: -

#### **5.9.1 Tourism potential**

The potential for tourism for BCFR has systematically been growing. The two (2) sites of Kaniyo Pabidi and Busingiro have frequently been visited by both Ugandans and the international community. The communities have been engaged in tracking animals mainly primates (Chimpanzees and monkeys among others) and bird watching.

#### **5.9.2 Timber (round wood)**

Budongo CFR is the home of Mahogany (*Khaya-Entandrophragma* Spp) of high value next to none but *Miticia excelsa* (Mvule). However, there are species including *Lovoa trichitioides*, *Holoptetea grandis*, *Alstonia boonei*, *Albizia* spp. *Cynometra atexandri*, *Trichillia* spp, *Maesopsis eminii* and many others suitable for furniture, building and construction purposes. The composition and condition of the growing stock in the BMPA blocks varies as follows: -

#### **Biiso Block**

Biiso Block has high species diversity. Arboricide treatment in the 1950s and 1960s targeted *Cynometra* spp and *Atstonia boonei*, encouraged emergence of species like *Maesopsis eminii*, *Gettis* spp, *Chrysophyllum* spp and others to come up, resulting from canopy opening. Basal area and volume increased. Basal area increased from 18.4m<sup>2</sup>/ha to 25.7m<sup>2</sup>/ha, while volume jumped from 69.4m<sup>3</sup>/ha to 98.0m<sup>3</sup>/ha for trees ≥ 50cm dbh.

The block has a mixed forest of colonizing stages, where Melicea species of high value dominate. The transfer of compartment B1 and part of B4 to recreation zone while B2 now

forms the buffer zone of N 15 of Nyakafunjo did not significantly change the high value. *Miticia* species distribution. The change came from uncontrolled harvesting of high value species in 1990s, including *Entandrophragma*, *Khaya* and *Lova* which have been greatly reduced. *Khaya anthotheca* decreased from 5.8m<sup>3</sup>/ha down to 1.1m<sup>3</sup>/ha, *Entandrophragma spp.* from 2.2m<sup>3</sup>/ha now not featuring in the 40 common species, *Miticia excelsa* from 0.8m<sup>3</sup>/ha to 0.3m<sup>3</sup>/ha, while *Maesopsis eminii* reduced from 5.5m<sup>3</sup>/ha to 4.1m<sup>3</sup>/ha. Species not affected in the harvesting have greatly increased e.g. *Cynometra spp* whose stocking rose from 8.9m<sup>3</sup>/ha to 19.6m<sup>3</sup>/ha, *Afstonia boonei* from 5m<sup>3</sup>/ha to 13.7m<sup>3</sup>, *Celtis spp* constitutes over 20% of the total volume and *Cynometra* is regular in lower diameter classes.

### **Busaju Block**

All the six (6) compartments are under the production zone. Basal area increased from 18.9m<sup>2</sup>/ha in 1992 to 20.8m<sup>2</sup>/ha and volume from 71.1m<sup>3</sup>/ha to 76.5m<sup>3</sup>/ha. *Cynometra* still dominates the forest at 27.8m<sup>3</sup>/ha (37% of overall stocking). While Busaju is considered as a riparian colonizing forest *Cynometra* is mainly along the streams.

The ISSMI done in 1992 and 2006 revealed that Busaju has limited high value species. Notably however, although 1992 had higher stocking for *Meficea* species compared to 2006. Aboricide treatment was not done here. Some sawmilling was carried out in the 1960s to 1970s, possibly reducing the high value species.

Rampant illegal harvesting in the 1990s immensely reduced stocks of high value species as *Khaya* and *Entandrophragma*. The two species did not appear among the 40 common species. The ISSMI also included *Holoptelea* and *Aningeria* among others in the high value species. *Holoptelea* and *Aningeria* were estimated at 0.8m<sup>3</sup>/ha and 0.9m<sup>3</sup>/ha respectively, but *Chrysophyllum albidum* was 3.0m<sup>3</sup>/ha. *Cynometra* and *Celtis* dominated the block with good distribution across all diameter classes and may continue to do so in the year to come.

### **East Waibira Block**

There was significant decline in volume from 98.9m<sup>3</sup>/ha in 1992 (the block which hitherto had the highest volume compared all the blocks) to 88.6m<sup>3</sup>/ha. However, the basal area increased from 24.2m<sup>2</sup>/ha to 25.11 m<sup>2</sup>/ha.

The volume decline could be attributed to changes in forest management strategies whereby compartments W29-W36 which by their nature had high stocks was re-planned to be managed as a nature reserve.

Apart from harvesting by Amaply sawmill, illegal creaming of mahogany took place. Above all, East Waibira block has the oldest *Cynometra* trees and some compartments received arboricide treatment from late 1960s to early 1970s, when some trees died.

Unlike other blocks with mixed forest, East Waibira Block is a *Cynometra* climax; the species still dominates the stocking. The 1992 inventory, showed that out of the 98.9m<sup>3</sup>/ha, the stocking for *Cynometra spp* was 54.8m<sup>3</sup>/ha (55%). By 2012, *Cynometra* is 49.4m<sup>3</sup>/ha or 56% of the overall stocking in the block. *Celtis spp* (about 10m<sup>3</sup>/ha) and is second to *Cynometra spp*. *Celtis* doubled from 4.6m<sup>3</sup>/ha in 1992 and as it is distributed across diameter classes may continue to rise in stocking. If no silvicultural intervention is done, the above two (2) species will dominate the block. On the other hand, *Rinorea spp* is not being used as a timber species therefore the tree species is increasingly becoming common, being the third highest in regeneration. *Rinorea spp* is shade tolerant and these characteristics enhance the succession levels hence the good distribution.

### **Kaniyo-Pabidi Block**

The ISSMI of 1992, showed that Kaniyo Pabidi block had the highest basal area (24.8m<sup>2</sup>/ha) and volume (96.4m<sup>3</sup>/ha), the third after Nyakafunjo and East Waibira Blocks. Since then



several compartments with high stocking were allocated to recreation (KP11 - KP13) and KP14 along with the grassland. This left only KPI - KP3 for production, thus the decline in stocking of the production zone. Current basal area is 16.7m<sup>2</sup>/ha and volume 49.5m<sup>3</sup>/ha, the lowest recorded.

Kaniyo-Pabidi was classified as having reached the *Cynometra* climax in 1992 with a stocking of 50.6m<sup>3</sup>/ha out of overall 96.4m<sup>3</sup>/ha stocking. Diversity was low, lacking *Melicea* species in lower diameter classes. *Melicia exelsa* had hitherto been a very important economic timber tree species second to *Khaya*, by the 1960 inventory. As of 2012, the production zone could be called a young colonising forest with *Terminalia glauca*, *Afbizia spp*, *Maesopsis eminii* among other colonising species. *Cynometra* is dominating with (14.9m<sup>3</sup>/ha) about 30% of the stocking. *Aningeria altissima* (2.6m<sup>3</sup>/ha), *Terminafia glauca* (2.5m<sup>3</sup>/ha) had the highest regeneration and distribution across all diameter classes.

### **Nyakafunjo Block**

Nyakafunjo Block is probably the basis of Budongo management. Harvesting started in 1945 and silvicultural interventions/operations for improving stocking done. As in Biiso block, arboricide treatment targeting *Cynometra* and *Afstonia* to open the canopy was carried out in 1950s and 1960s. Enrichment planting was done with *Khaya anthotheca* in compartments N1 and N2.

The 1992 inventory showed that Basal area increased from 24.6m<sup>2</sup>/ha (2nd highest) to 27.5m<sup>2</sup>/ha (0.52m<sup>3</sup>/ha above the threshold of 27m<sup>2</sup>/ha for harvesting), the stocking was 119.2m<sup>3</sup>/ha by volume. From the 2006 ISSMI, the volume of 105.2m<sup>3</sup>/ha is recorded as the highest for all blocks in the production zone despite a decline from 1992 inventory. There has been commercial harvesting over the last 10 years. The block is typically *Cynometra* mixed forest with diverse species, but distribution and stocking level of some species changed. *Cynometra* stock density remained steady, 31.5m<sup>3</sup>/ha in the 1992 inventory compared with 31.6m<sup>3</sup>/ha in the 2006 inventory. It was noted that by the 1992 inventory, *Cynometra* trees of dbh > 70cm had not died as a result of arboricide treatment. The *Cynometra* trees recovered. The scenario could also be concluded that mortality and any volume increments could have counter balanced each other to keep the species stocking density steady.

*Khaya anthotheca* stocking was highest at 9m<sup>3</sup>/ha by the 1992 inventory. This was attributed to enrichment planting in N1, N2 and N15 (the strict nature reserve). Since then N1 has been annexed to the nature reserve and *Khaya* stocking dropped to 1m<sup>3</sup>/ha, mainly resulting from creaming. *Entandrophragma* declined from 4.9m<sup>3</sup>/ha to 1.7m<sup>3</sup>/ha, while *Holoptelea* stocking increased from 2.8m<sup>3</sup>/ha to 5.8m<sup>3</sup>/ha. Conversely, *Maesopsis eminii* stocking declined from 13.1m<sup>3</sup>/ha to 4.6m<sup>3</sup>/ha and while *Chrysophyllum spp*. from 19.3m<sup>3</sup>/ha to 4.9m<sup>3</sup>/ha.

### **Siba Block**

Siba had one of the lowest stocking by 1992 inventory, with basal area 19.1m<sup>2</sup>/ha and volume 57.9m<sup>3</sup>/ha. From the 1997 - 2007 FMP, while referring to the 1964 - 1974 WP, harvesting would have been completed in 1945. However, other harvests for timber were done from early 1960s to the 1990s. This Block was exploited as the saw millers at the time did not work according a regulated management control system that had been proposed in the WC.

Although compartments S4 and S5 were made nature reserves and S8 planned for recreation, stocking in the production zone increased from 19.1m<sup>2</sup>/ha to 19.7m<sup>2</sup>/ha as basal area while the stand volume from 57.9m<sup>3</sup>/ha to 78.0m<sup>3</sup>/ha. About 30% of total volume is *Celtis spp* (where stand volume increased from 4.4m<sup>3</sup>/ha in 1992 to 26.6m<sup>3</sup>/ha in 2006). About 80% of the volume increase over the years is attributed to canopy opening from continuous harvesting which gave emergence to *Celtis*, *Afbizia*, *Chrysophyllum* and other species

## **West Waibira Block**

West Waibira Block was the poorest in stocking in 1992 with basal areas 1 8.7m<sup>2</sup>/ha and volume 57.5m<sup>3</sup>/ha. The basal area was estimated at 27.4m<sup>2</sup>/ha and volume at 98.5m<sup>3</sup>/ha as by the 2006 ISSMI. Like East Waibira, the block had reached a climax, a *Cynometra* climax community. From 1992 inventory *Cynometra* stocking was estimated at 35m<sup>3</sup>/ha about 60% of the overall stocking while other major species were *Alstonia boonei* (5.7m<sup>3</sup>/ha) and *Celtis* (3.1m<sup>3</sup>/ha). Distribution of species was generally poor especially the *Melicea excelsa*. Major mechanized logging stopped in 1976, and is reported to have decimated the ability of the block to regenerate although there had been pre-exploitation refining.

Despite *Cynometra* still being dominant at stocking (32.7m<sup>3</sup>/ha or 33%), other emerging species greatly contributed to the increase taking advantage of gaps created from mechanized harvesting. The block is tending towards *Cynometra* mixed forest. Species whose stocking has substantially risen include *Celtis* (> 12m<sup>3</sup>/ha), *Alstonia* (about 10m<sup>3</sup>/ha), *Cordia* (4.7m<sup>3</sup>/ha), *Maesopsis* (3.1m<sup>3</sup>/ha) and *Chrysophyllum* (3.0m<sup>3</sup>/h a).

### **5.9.3 Non timber resources**

Non timber resources in the BCFR include;

- i. Rattan cane: an important handcraft and furniture material, abundant but not quantified
- ii. Fuel wood: from dried trees, and that left behind as lop and top in areas being harvested.
- iii. Herbal medicine: extracted for human and animal treatment of diseases.
- iv. Other non-timber forest products include; wild honey, mushrooms, green vegetables, thatching grass, tree seeds, fruits, fibres etc.

### **5.9.4 Physical Cultural resources**

#### **5.9.4.1 Traditional Religion in Buliisa District**

The Bagungu people belief system is first anchored in ancestor worship like most tribes in Uganda. Most of the family households have a family shrine called Kibila in Lugungu (the language of the Bagungu) and Abila in the Alur language. Family members make supplications to ancestors before undertaking long journeys and for the protection of the household from time to time.

The next level of traditional worship is at clan level. Clans have Shrines / cultural sites called "Empoluma". Prayers at these locations are conducted by the clan priests called "Baramansi" for the clan members and all the people living on the clan land. Originally each of the Clans of the Bagungu had a designated territory under the protection of the respective clans Mpoluma. Members of other clans who settled in the respective area and other tribes (Alur in this case) would also pray for protection and good fortune from the Mpoluma of the territorial clan.

The Baramansi Priests used to collect offerings to be made at these cultural sites from all members of the community in the area. In this way both the Alur and Bagungu people used to contribute the hens, goats and other items to be offered as sacrifices, but the priests were of the Bagungu tribe. Prayers at the sites are made for the whole community such as praying for good fish catches or praying for rainfall in the area. In addition, each Mpoluma has several lesser shrines at a distance which cater for single issues e.g. protection from disease such as Malaria epidemics which strike from time to time or snakebites. These were called "Bihongo". So, if a village was suffering from a malaria epidemic, the Priests would collect offerings from the community and make sacrifices to protect the village at a "Kihongo" (singular form for Bihongo) to mitigate the community from the epidemic. Other cultural sites where rituals are conducted are labelled as "Kihara" (Bihara in plural) and "Kibari" (Bihari in plural). These are all cultural sites of lower status than the Mpoluma. They are all attended to by the Baramansi priests. These Clan cultural sites are situated in many locations in Buliisa Districts and are usually marked by big trees where the prayers and sacrifice rituals are conducted but some are located at swamps.

There are no prominent cultural sites within or immediately outside the CFR. Some members of the local communities engage in some kind of ritual activities to access herbs from the CFR for medicinal use on small scale in considering its expanse. Some of the most prominent cultural sites include; the Royal mile, Busingiro Hill, and the Omukama's (King's) fish pond in Biiso.

#### **5.9.5 Support services**

Budongo CFR is an important environmental asset to the neighbouring communities, the districts and nation as a whole in ameliorating climatic conditions. The forest is vital in soil stabilization and rivers flowing through form a network as part of the hydrological system in drainage and agricultural production.

#### **5.9.6 Regulatory services**

Forests and trees absorb carbon dioxide gas emission (CO<sub>2</sub>) from the atmosphere. Budongo CFR, therefore plays a vital role as a carbon sink considering gases absorbed (tonnes/ha), thus reducing the ozone layer depletion and global warming. At the moment, Budongo CFR serves as the major sink for GHGs that are likely to result due to oil and gas exploration and production in Hoima and Buliisa district.

#### **5.9.7 Land resource**

The BCFR has large woodlands and grasslands as potential areas for plantation establishment. Kitigo grass land is slowly getting colonised with high valuable species including mahogany (*Khaya* and *Entandrophragma* spp.). Part of Kitigo will soon be an emerging young mixed forest.

#### **5.9.8 Stones**

There are plenty of sites with stones that can be used as construction materials. Though not quantified, they appear to be valuable resources for construction of roads and buildings.

#### **5.9.9 Charcoal**

Trial carbon (charcoal) production with appropriate technology and skills using *Cynometra alexandri* as raw material showed that the species produces good quality charcoal,

#### **5.9.10 Oil, gas and minerals**

Exploration for oil and gas is ongoing within the Albertine graben. Oil and gas exploration and production activities have a potential for negative impacts on the environment.

#### **5.9.11 Benefits**

Consultations at various levels revealed that stakeholders get numerous benefits varying from immediate forest products by local communities to hydrological system and carbon sequestration at national and international level.

#### **5.9.12 Problems**

The BCFR (82,530ha) is traversing three (3) districts of Masindi, Buliisa and Hoima hence management is experiencing several problems. Illegal harvesting of timber and non-timber products particularly the former is wide spread especially in compartments neighbouring communities. Unlike in the past, people look for all timber species including the most highly valuable mahogany (*Entandrophragma* and *Khaya* spp.) which has a ready market and high prices. The practice of selective felling has dwindled and as such the forest is facing high pressure for timber. Cases of encroachment come up now and again in the CFR and this requires routine monitoring for eviction. Communities cut down the forest in search of land for agricultural production especially sugar cane growing. Grazing has also become a problem as herdsmen move around for pasture and water.

### **5.9.13 Threats and Conflicts**

#### **5.9.13.1 Threats**

The most serious threat is illegal timber harvesting in Biiso, Siba, East Waibira and Kaniyo-Pabidi, agricultural encroachment, grazing, settlement etc. Encroachment is BCFR decimation, thus threatening forest integrity and future existence of the BCFR to provide products and services. About 175ha have been encroached upon in Busaju block since 1970s through the double production campaign during that time. The forest reserve is also invaded with alien invasive plants like *Senna spectabilis*, *Lantana camara*, *Broussonetia papyrifera* and others that are still on a small scale. These plants reduce the biodiversity values of the reserve. The oil and gas development in Albertine graben is a potential threat to biodiversity in the BMPA through vegetation clearance and pollution from wastes.

#### **5.9.13.2 Conflicts**

Ignorance or lack of awareness of provisions within the National Forestry and Tree Planting Act 2003 and rules made there under cause conflicts with licensees, communities and other stakeholders due to non-compliance with the law. The discovery of oil and gas within the Albertine graben will lead to population increase around Budongo which is expected to increase resource use conflict within the BMPA. Kaniyo Pabidi and Kitigo grassland blocks were gazetted as CFRs, the same areas were also gazetted as parts of Karuma and Bugungu game reserves under UWA. This has resulted into management conflicts.

The escarpment, though outside the FR, is ecologically fragile and any mismanagement of Budongo CFR may result into serious negative consequences around the escarpment and Buliisa District as a whole.

#### **5.9.13.3 Hydrological risks**

Budongo CFR being a closed TMF, there is no cultivation along the river banks within the reserve. Outside the reserve still cultivation is minimal as a large part is protected area of Bukumi - Bugungu Hunting area and Murchison Falls National Park. Lake Albert shores are largely occupied by traders around Butiaba and Wanseko, not engaged in farming.

#### **5.9.13.4 Climate change risks**

Budongo CFR is the biggest forest reserve in Uganda and presents its role in climate amelioration in the region. It sequesters large quantities of carbon and other Greenhouse gases. The discovery of oil in Buliisa and Hoima districts and the likely explosion of Greenhouse gases in the atmosphere and emission from Kinyara Sugar Limited further shows the importance of Budongo CFR as carbon sink in the region and the country as whole. Forests are important for stabilising climate, especially through absorption of carbon dioxide (CO<sub>2</sub>) from the atmosphere. In its fact sheets on forestry WWF has observed that rising concentrations of greenhouse gases (GHGs) are driving changes in the earth's climate patterns, resulting in extreme weather events, such as hurricanes, heat waves, droughts and floods, and threatening plant and animal life. Forests play a critical role in protecting the earth from climate change and regulating climate patterns, as the trees - trunks, branches and roots - and even soil absorb and store CO<sub>2</sub>, providing a natural reservoir for this GHG gas. When forests are destroyed or degraded by activities such as logging and conversion of forests to agricultural land, they release large quantities of CO<sub>2</sub> and other GHGs, and become a significant (and, for some developing countries, a primary) source of GHG emissions and contributor to climate change. Estimates on the contribution of deforestation to carbon emissions are believed to be about 19 per cent of global emissions. Reducing deforestation and forest degradation (REDD) is a highly cost-effective way of reducing greenhouse gases, if the drivers of deforestation are addressed strategically. Although there is no statistical data as to what extent the Budongo CFR has played in carbon sequestration, there is no doubt that Tropical Forests absorb a lot of gas emissions (CO<sub>2</sub>) from the atmosphere. It is estimated that 1 ha of THF can absorb 550 tons of carbon.

### 5.9.13.5 River blindness control

Almost all major rivers flowing through BMPA carry a health hazard of the Simulium fly (*Onchocerca volvulus*) that causes river blindness (Onchocerciasis). In the past, FD worked jointly with Nyabyeya FC and sawmillers for regular spraying with insecticides to control the fly and reduce the disease incidences.

### 5.9.14 Administrative Structure

Buliisa District comprises of one county, six sub counties and three Town councils. It has a total of 41 parishes and 131 villages as presented in table 5.3 below. The proposed site is located in Akiimi "B" Village, Kihungya Sub within Buliisa district.

Table 5.3: Administrative Units

| S/No. | Sub-county  | No. of Parishes | No. of Villages |
|-------|-------------|-----------------|-----------------|
| 1.    | Buliisa     | 4               | 12              |
| 2.    | Kigwera     | 3               | 15              |
| 3.    | Ngwedo      | 5               | 16              |
| 4.    | Biiso       | 4               | 20              |
| 5.    | Butiaba     | 2               | 10              |
| 6.    | Kihungya    | 4               | 22              |
| 7.    | Buliisa T/C | 4               | 8               |
| 8.    | Biiso T/C   | 5               | 15              |
| 9.    | Butiaba T/C | 2               | 10              |
| 10    | Wansek T/C  | 4               | 3               |
| Total |             | 41              | 131             |

Source: Buliisa DDP 2021-2025

### 5.9.15 Demography

According to 2014 Population and Housing results, the population of Buliisa district was 113,161 persons having 57,801 males and 55,360 females. Butiaba sub-county had the highest figure of 28,911 people while Buliisa Town council had the least population of 7,238. The population of Buliisa district is currently projected at, **153,960 people (78,490 males, 75,470 females)**. Table 5.4 presents the number of households and population by sub-county by sex.

Table 5.4: Number of HHs and Population by Sub-County by Sex

| S/No. | Sub-county | Males  | Females | Total   | HHs    |
|-------|------------|--------|---------|---------|--------|
| 1     | Buliisa    | 8,461  | 8,677   | 17,138  | 3,217  |
| 2     | Kigwera    | 6,871  | 6,757   | 13,628  | 2,636  |
| 3     | Ngwedo     | 8,419  | 9,053   | 17,472  | 3,223  |
| 4     | Biiso      | 8,066  | 8,312   | 16,378  | 3,269  |
| 5     | Butiaba    | 16,366 | 12,545  | 28,911  | 5,630  |
| 6     | Kihungya   | 5,915  | 6,481   | 12,396  | 2,189  |
| 7     | Buliisa TC | 3,703  | 3,535   | 7,238   | 1,488  |
| Total |            | 57,801 | 55,360  | 113,161 | 21,652 |

Source: 2014 Population and Housing Census

The population density is 101.9 persons per km<sup>2</sup>, much less than the national average of 174. The majority of the population (94%) live in rural areas, although the populations of urban areas are growing quickly, such as Buliisa Town Council, Wanseko, and Masaka. The most densely populated areas are Kigwera Sub County and Buliisa Town Council. Population density is higher along the lake shores as migrants from the DRC and other parts of Uganda have historically settled there for employment opportunities in the fishery sector.



For households in villages and towns to the west along the lake shore the average household size is higher at, approximately 7 to 10.5 persons per household than in Kihungya sub county (5 to 8 persons). The household size may often be related to the differing arrangements of the homestead. The single families residing on a single homestead will generally have smaller than the average number of household members – mostly comprised of a father, mother, and children. Compound homesteads will support an above average number of members – comprising of grandfathers, grandmothers, fathers, mothers, children, and other extended family members. Most households (85%) are male headed

Buliisa District has a young population, with 58% of the district falling under the 0 – 19 age group. Fifty percent of the population is economically active (aged 15 - 64 years). The sex ratio was 104.4 males per 100 females, higher than the national figure of 95 males per 100 females. The ratio of males to females is higher in Kigwera Sub County, Butiaba and Buliisa Town Council. Ngwedo and Kihungya have the lowest ratio of males to females. Ten percent of girls aged 10 - 17 years are married and 13% of girls aged 12 - 17 years have given birth.

#### Origin and Ethnicity

The 2014 census records 65 ethnic groups in Uganda. The Baganda are the majority accounting for close to 17% of the population followed by the Banyankole with about 10%.

The majority of the population in Buliisa are part of two main ethnic groups: the Bagungu (who speak Lugungu) and the Alur (who speak Alur)), while in Nwoya the dominant ethnic group is the Acholi. The Bagungu constitute just 0.25% of the total population in Uganda, while the Alur constitute 2.8%. The Acholi are one of the largest ethnic groups constituting 4.4% of the population (Ref. 16-29).

The Bagungu are a Bantu ethnic group that are part of the Bunyoro Kitara Kingdom and are considered the historic inhabitants of the area. The Bagungu are traditionally pastoralists and fishermen and are concentrated in the west of Buliisa District. The Alur are a Luo ethnic group that originate from the Nilotes from the West Nile Region or from DRC. The Luo are found across eastern and central Africa. The Alur are traditionally agriculturalists and settled in areas close to the MFNP where land was suitable for agriculture, and are concentrated in Ngwedo sub county and the north-eastern part of Buliisa sub county. Although Alur and Bagungu are the dominant ethnic groups, people from most of Uganda's tribes and ethnic groups, as well as other nationalities, can be found in Buliisa district, including Bunyoro (speaking Runyoro), Bankyankore (speaking Runyankole), Rwandese (speaking Kinyarwanda), Congolese (mainly speaking French and Swahili), and Lugbara (speaking Lugbara). Vulnerability of minority groups.

A small population of nomadic herdsmen called Balaalo also live in Buliisa. The Balaalo are made up of different ethnicities including Banyankole, Banyarwanda, Basangora, and Bahema. Some Balaalo have lived in Buliisa for over 30 years while others are recent immigrants. The Balaalo are also present in Masindi, Hoima, Acholi Region, and Nebbi.. In some places they have integrated with the local community – there is intermarriage and their children attend local schools. In other places, however, such as Kigwera sub county, the Balaalo were reported to live in isolation from the rest of the community and are very much seen as subordinate to the dominant Bagungu community (Meetings with Balaalo representatives, Buliisa District).

#### 5.9.16 Economic activities

Buliisa district is endowed with key economic developments that translate to growth opportunities, these include agriculture, urban housing due to road infrastructure, fishing, minerals that include Oil and gas, the newly constructed markets by the Albertine regional sustainable development project.

The district is primarily rural and most people are either engaged in agricultural activities. Crop husbandry is the leading agricultural activity followed by livestock keeping. Most commonly grown crops include cassava (staple food), maize, beans, Pineapples, Citrus (Oranges), cotton, tobacco Mangoes, ground nuts, banana (Busingiro and Akimi), in Biiso and Kihungya sub-counties respectively. Animals reared include cattle, goats, sheep, pigs (Small scale), chicken, and ducks. Animals in most parts of the district are communally grazed and their movements are rarely controlled.

Fishing is widely done in the district and the major source being Lake Albert which has economically viable fish species such as *Bracynus nus* (Ragogi), *Neobola bredoi* (Muziri), *Lates abertianus* (nile perch) and *Oreochromis niloticus* (Tilapia) (SoER, 2015).

Buliisa District has wildlife both in Protected Areas and outside Protected Areas. The Protected Areas in Buliisa with wild are Bugungu wildlife reserve, Part of Murchison Falls National Park, part of Budongo Central Forest Reserve and a number of wetlands. Sub counties of Ngwedo, Kigwera, Buliisa, Butiaba and Biiso that border the protected areas share 20% annual revenues accrued from park gate collection.

The recent discovery of oil and gas in Albertine graben, of which Buliisa District is part, has led to rapid growth and development of the area. This has been mainly through infrastructural developments such as settlement camps, oil related access roads, waste consolidation sites, as well employment and housing opportunities for both the locals and external workers. Example of local employment opportunities include driving, casual labouring, and community liaison work. Whereas oil and gas is a blessing to Buliisa district a number of shortcomings has been registered at exploration, appraisal and development stages.



Plate 5.1: Market place at Kasenyi bokwe

#### **5.9.17 Land Use and Tenure System**

Land in Buliisa District is predominantly held under customary tenure managed by different ethnic groups (Bagungu, Alur, Acholi). The Bagungu, Alur and Acholi have different systems of customary ownership. Most of the Bagungu, who are mainly livestock owners, own land (primarily grazing land) communally on a clan basis; while the Alur, who are mainly cultivators, recognise individual land ownership and have/ use more clear demarcations of land parcels. Land inheritance follows the male lineage and under customary law a son does not have access to land from his parents until he marries. Under the Bagungu communal tenure system, land can be reclaimed by the clan if the head of household passes away without having a male heir. A widow can, however, claim her husband's land if she takes care of all her husband's children. Under the Alur and Acholi systems of individual customary tenure, if a household does not have heirs and the husband passes away, his close male relatives inherit the land (land is not returned to the clan). Dispute resolution for land matters is based on mediation by local leaders.

Land in the eastern part of Buliisa District is predominantly used for crop farming (around 100 km<sup>2</sup>) and land in the central part as rangeland (around 180 km<sup>2</sup>). The western part has a mixed land use pattern (covering the lake shore area) with around 20 km<sup>2</sup> of semi-rural/urban areas and 35 km<sup>2</sup> of rangeland and 40 km<sup>2</sup> of wetland.

#### 5.9.18 Areas of Socio-cultural importance

There are no built or movable cultural structures or articles at the subject site; furthermore, no archaeological sites or materials were observed or recorded at the proposed project areas.

#### 5.9.19 Education

Buliisa District has a total of 51 primary schools, of which 20 are private schools and 31 are government aided, and about 5 secondary schools (of which three (3) were Government schools and two (2) are private USE schools). There was a reasonable distribution for primary schools in all Sub Counties whereas secondary schools were unevenly distributed across the Sub Counties as presented in table 5.5. There is a primary school to the north of the project site at approximately 300metres-St. John Bosco Primary School. There is also a secondary school known as Nyabyeya Forestry College which is located to the south eastern direction of the project site at about 12.8 kilometres from Akiimi 'B' Village. Plates 5.2 and 5.3 present some of the schools within the project area.

Table 5.5: Number of education institutions per Sub-County and ownership

| Sub county           | Type of institution |           |            |          |
|----------------------|---------------------|-----------|------------|----------|
|                      | Primary             |           | Secondary  |          |
|                      | Government          | Private   | Government | Private  |
| Biiso                | 6                   | 5         | 1          | 3        |
| Buliisa              | 6                   | 3         | 0          | 0        |
| Buliisa Town Council | 3                   | 2         | 0          | 2        |
| Butiaba              | 4                   | 4         | 1          | 0        |
| Kigwera              | 4                   | 3         | 1          | 1        |
| Kihungya             | 3                   | 2         | 0          | 0        |
| Ngwedo               | 5                   | 1         | 1          | 0        |
| <b>Total</b>         | <b>31</b>           | <b>20</b> | <b>4</b>   | <b>6</b> |

Source: Buliisa DDP 2021-2025



Plate 5.2: View of Nyabyeya Forestry College



Plate 5.3: View of St. John Bosco primary school

#### 5.9.20 Water supply

The access rates in Buliisa vary from 20 % in Butiaba Sub-County to 95 % in Ngwedo Sub-County. Buliisa has 448 domestic water points which serve a total of 106,039 people – 97,049 in rural areas. 114 water points have been non-functional for over 5 years and are considered

abandoned. Buliisa has 1 piped scheme. Figure 5.1 presents access to water supply in the district. Plate 5.4 present one of the water sources in the project area.

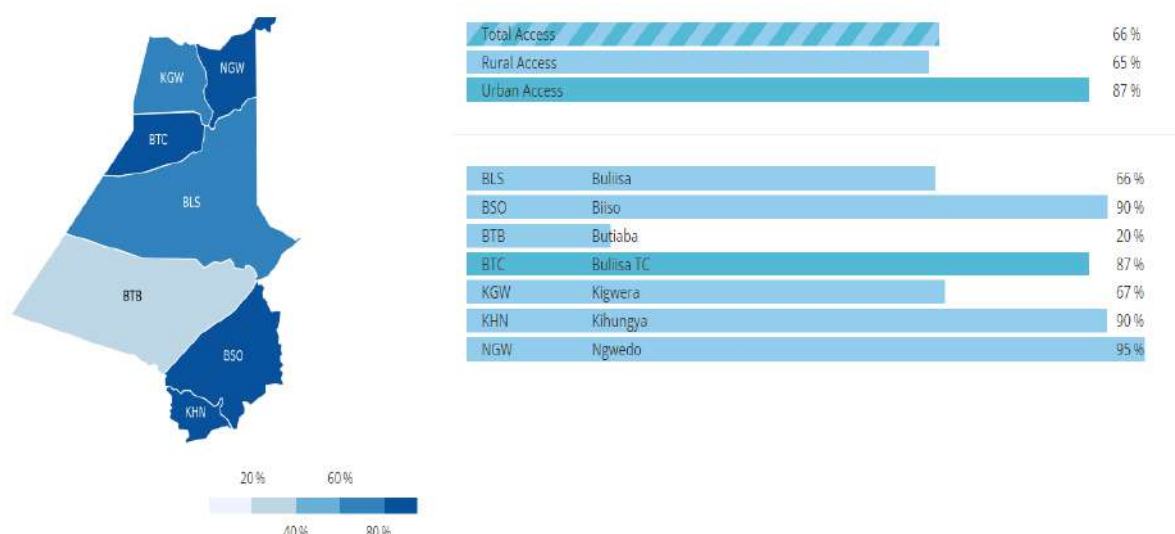


Figure 5.1: Access to water supply in Buliisa District

**Source: Directorate of Water Development, Ministry of Water & Environment, Republic of Uganda 2023**



Plate 5.4: Borehole adjacent to the proposed site

Water sources used by communities include swamps, streams/ rivers, springs, and Lake Albert, hand- dug wells, hand pumped community boreholes, and public water taps. Hand pumped community boreholes are built by the local district government, NFA, or NGOs (e.g. Uganda Red Cross), and some boreholes have been built by oil companies. Some households report using unprotected springs or wells, which usually have reduced quality water, consumption of which is likely to result in sickness. Table 5.6 shows the number of safe water sources in Buliisa District by sub county and type. The table shows that boreholes were the most common safe water source, representing about 53% of all the safe water sources in the district. Buliisa sub county had only 19 functional boreholes: it didn't have any other type of water source. Protected springs/wells were in Bisio, Kihungya and Ngwedo sub- counties.

Table 5.6: Safe Water Coverage of Buliisa by S/County /TC

| S/N | Sub County | No. of<br>Hours | Population |        | Total | Number of water<br>sources | Water Coverage<br>(%) |
|-----|------------|-----------------|------------|--------|-------|----------------------------|-----------------------|
|     |            |                 | Male       | Female |       |                            |                       |
| 1.  | Buliisa    | 3127            | 8404       | 8643   | 17047 | 53                         | 63.5                  |
| 2.  | Kigwera    | 2644            | 7123       | 6901   | 14024 | 43                         | 64                    |
| 3.  | Ngwedo     | 3210            | 8326       | 8924   | 17250 | 72                         | 84.5                  |



|                |            |       |       |       |        |     |      |
|----------------|------------|-------|-------|-------|--------|-----|------|
| 4.             | Biiso      | 3464  | 8861  | 9122  | 17983  | 84  | 70   |
| 5.             | Butiaba    | 5578  | 16574 | 12640 | 29214  | 40  | 31   |
| 6.             | Kihungya   | 2193  | 5856  | 6455  | 12311  | 49  | 83   |
| 7.             | Buliisa TC | 1488  | 4041  | 3636  | 7677   | 38  | 77   |
| Totals/Average |            | 21704 | 59185 | 56321 | 115506 | 379 | 67.6 |

Source: Buliisa District Water Office

### 5.9.21 Energy

Buliisa District accesses electricity supply from the national hydro-power grid. However, only 12% of households are connected to this grid. The Sub Counties covered include Buliisa Town Council, Butiaba Sub County, Biiso Sub County/Town Council, Part of Kihungya Sub County and Kigwera Sub County. Power extension is ongoing in Ngwedo and part of Buliisa Sub County. Currently Solar is the major form of electric power used for lighting in most house holds (74%) unlike 18 years ago (2002 Census) when the majority 96 % of Households were using tadooba (a paraffin Candle) as the main source of lighting. The energy source used for cooking is mostly fire wood (83.5%) followed by charcoal (16.5%), the district has not yet embraced using electricity as a source of energy for cooking. There is potential for biomass energy.

According to the household survey conducted during the study, wood is reported to be the primary source of energy for cooking; charcoal is also used but to a lesser extent. Wood fuel is used for stone fires and charcoal is used in traditional stoves; the latter is more common in households located along the shores of Lake Albert whereas wood fuel is used by households located further inland. Wood within the project area is typically collected by women with the forest reserves on specific days allocated by the NFA sector / forest supervisors.

### 5.9.22 Transport Infrastructure and traffic flow

Buliisa District is linked to other districts by roads and these fall under four categories i.e district (feeder) roads, urban roads, community access roads and national roads (trunk roads). The district has a total of 373 kms of gazzeted road network of which 162 kms are trunk roads, 85 kms are feeder roads and the remaining 126 kms are community access roads. Most of Buliisa feeder and community roads are characterised by sandy soft soils across low lying areas. The project site is served by a feeder road which tends to be impassable more especially during the rainy season and dusty in drier periods and needs upgrading.

Table 5.7: Road by type and length

| S/No. | Road Type        | Distribution by LLG (KMS) |             |             |             |             |           |              |
|-------|------------------|---------------------------|-------------|-------------|-------------|-------------|-----------|--------------|
|       |                  | Biiso                     | Kihungya    | Butiaba     | Buliisa     | Ngwedo      | Kigwera   | Buliisa TC   |
| 1.    | District Roads   | 49.7                      | 30.0        | 39.1        | 74.9        | 32.2        | 28.0      | 4            |
| 2.    | Community Access | 28.5                      | 22.8        | 22.4        | 20.4        | 31.2        | 26.0      | 2            |
| 3.    | Urban roads      | 00                        | 00          | 00          | 00          | 00          | 00        | 7.36         |
|       | <b>Total</b>     | <b>78.2</b>               | <b>52.8</b> | <b>61.5</b> | <b>95.3</b> | <b>63.4</b> | <b>54</b> | <b>13.36</b> |

Source: Buliisa DDP 2021-2025

### 5.9.23 Health facilities

Buliisa district health system comprises of a District General Hospital, 5 Health Centre IIs, 4 Health Centre IIIs and 2 Health Centre IVs. The health facilities are within a radius of 5km. The District Council has made significant achievements in ensuring that health service delivery is improved and the distance to health facilities reduced. This has been achieved by opening up health centres at parish levels and improving the infrastructure. A notable example is Bugoigo Health Centre where the district constructed a new block with improved sanitary facilities. It should be noted also that the district does not have any hospital. There is only one health centre IV located in Buliisa Town Council with few beds to facilitate curative, preventive, disease control, surveillance and other health services. In addition, there is one health centre



III (Biiso Health Centre), and six health centre IIs distributed throughout the sub-counties. Tullow Oil Uganda Ltd is also building a health centre IV in Buliisa Sub-County to provide improved health services to the population under its Corporate Social Responsibility Programme. Plate 5.5 presents one of the health facilities within the project area. Table 5.8 presents the health facilities by level, ownership and functionality

Table 5.8: Health Facilities (Public PNFP) by level, ownership and functionality

| S/N | S/C        | Parish       | Health facility Name     | Level | Ownership  | Functionality | Population served. |
|-----|------------|--------------|--------------------------|-------|------------|---------------|--------------------|
| 1   | Buliisa    | Kigoya       | Buliisa General Hospital | V     | Government | Functional    | 6,000              |
| 2   | Buliisa    | Bugana       | Bugana HC                | III   | Government | Functional    | 13,000             |
| 3   | Buliisa TC | Civic        | Buliisa HCIV             | IV    | Government | Functional    | 22,000             |
| 4   | Buliisa TC | Eastern Ward | Uganda Martyrs HC        | II    | PNFP       | Functional    | 15,000             |
| 5   | Biiso      | Biiso        | Biiso HC                 | IV    | Government | Functional    | 19,000             |
| 6   | Butiaba    | Booma        | Butiaba HC               | III   | Government | Functional    | 19,000             |
| 7   | Butiaba    | Bugoigo      | Bugoigo HC               | II    | Government | Functional    | 7,000              |
| 8   | Butiaba    | Piida        | Marine HC                | II    | PNFP       | Functional    | 3,000              |
| 9   | Kihungya   | Garasoya     | Kihungya HC              | II    | Government | Functional    | 9,000              |
| 10  | Ngwedo     | Avogera      | Avogera HC               | III   | Government | Functional    | 15,000             |
| 11  | Ngwedo     | Nile         | Paraa HC                 | II    | PNFP       | Functional    | 2,000              |
| 12  | Kigwera    | Kigwera      | Kigwera HC               | III   | Government | Functional    | 12,000             |

Source: District Health Office



Plate 5.5: Nyabyeya health centre II within the project area

#### 5.9.24 Settlement and Housing

Settlement patterns within the Project area are primarily centred on major and minor transportation routes. Villages vary in size between approximately 60 and 600 households. The majority of villages have trading hubs centred within close proximity to major roads where businesses and main social activities usually take place (retail shops, community meetings, and grinding mills for example). Housing in most villages is scattered although if there is a main road passing through a village there tends to be clustering of houses along the road.

Settlements in the northwest and west of Buliisa District are more concentrated and have more of an urban feel than the central and eastern areas. In Katanga, Katodio and Wanseko in Kigwera sub-county, and Ndandamire and Masaka in Buliisa sub county, housing is quite congested and, in some places, described as 'slum like'. Housing in Kijangi in Buliisa sub-county is also quite concentrated.

Typical village infrastructure and resources include religious buildings, trading centres, meeting points, boreholes and open water sources, grinding mills, community access roads, football fields, crop farming areas (mainly in the east of Buliisa) and grazing areas (mainly in the west of Buliisa).

A large percentage of houses in Buliisa district are traditional structures, built from mud with wattle walls and grass thatched roofs. However, there have been an increasing number of permanent, iron-roofed houses being built, and this varies depending on the level of wealth in the different sub-counties and villages.



Plate 5.6: Some of the houses within the project area

## 5.10 Biophysical profile

### 5.10.1 Vegetation at the project site

The proposed site is a bushed forest dominated by trees such as; *Celtis africana*, *Maesopsis eminii*, *Cola gingatea*, *Markhamea lutea*, *Ficus sp*, *Voacanga thouarsii* and *Toona sinensis*. Shrubs recorded during the site survey were; *Alchornea sp*, *Vepris nobilis*, *Secamone africana*, *Vitex sp*, *Acalypha bipartia* and *Broussonetia papyrifera* while Herbs recorded were; *Piper sp*, *Achyranthes sp*, *Asystesia gangetica*, *Afromomum sp* and *Periploca sp*. Plate 5.7 presents the vegetation at the proposed site.



Plate 5.6: Vegetation at the proposed site in Budongo

#### 5.10.1.1 Invasive species

The invasive plant species recorded in the proposed project area is *broussonetia papyrifera*.

#### 5.10.1.2 Species of conservation concern

There were no species of conservation concern recorded. However, Budongo is home to different medicinal trees, shrubs and hubs species and globally and nationally threatened species.

## 5.10.2 Terrestrial fauna

### 5.10.2.1 Mammals

Busingiro is known to visitors for its Chimpanzee *Pan troglodytes* previously habituated and with trails starting from the defunct campsite. The groups were habituated to form part of the visitor attractions and these were within the proposed site. Although no Chimpanzee was recorded during the site visit, other species of primates recorded included; Olive baboon *Papio anubis*, Black and White Colobus *Colobus guereza* and the Vervet monkey *Chlorocebus pygerythrus*.

#### Species of conservation concern

During the site visit, no mammal species of conservation concern was recorded. However, the Chimpanzee *Pan troglodytes*, a globally and nationally Critically Endangered species is known to exist within the proposed VIC site.

### 5.10.2.2 Birds

The forest reserve is home to a host of different bird species ranging from Forest Dependent species (FF), through Forest visitors (F) and generalists (ff). Among the species studied in the forest is the Nahan's Francolin *Ptilopachus nahani*, a globally threatened Galliform. During the ESIA stage, some of the species recorded included; Speckled Mousebird *Colius striatus*, Yellow-whiskered Greenbul *Eurillas latirostris*, Ross's Turaco *Musophaga rossae*, White-browed Robin chat *Cossypha heuglini*, Common Bulbul *Pycnonotus barbatus*, Black and White Casqued Hornbill *Bycanistes subcylindricus*, Yellow-fronted Canary *Crithagra mozambica* and Banded Prinia *Prinia bairdii*.

#### Species of conservation concern

Although well known for species such as Nahan's Francolin *Ptilopachus nahani*, there were no records of threatened species within the environs of the proposed VIC site.

## 5.11 Site specific baseline data

Baseline data onsite was acquired during field trips made to the project area and surrounding communities.

### 5.11.1 Ambient Noise

From the baseline noise fourteen (14) measurements were carried out within the project site. The results from the baseline noise measurements recorded are presented in table 5.9 and figure 5.2.

Table 5.9: Baseline noise level results from the proposed site

| Station | Coordinate                | Max Noise(dB) | Min Noise(dB) | Average Noise(dB) |
|---------|---------------------------|---------------|---------------|-------------------|
| 1       | 36N 329534 m E 189512 m N | 73.2          | 54.5          | 60.8              |
| 2       | 36N 329568 m E 189477 m N | 74.4          | 50.8          | 59.3              |
| 3       | 36N 329596 m E 189556 m N | 75.6          | 46.3          | 57.3              |
| 4       | 36N 329604 m E 189533 m N | 76.5          | 46.7          | 57.5              |
| 5       | 36N 329618 m E 189501 m N | 77.7          | 47.3          | 60.8              |
| 6       | 36N 329665 m E 189523 m N | 79.5          | 49.8          | 60.8              |
| 7       | 36N 329665 m E 189523 m N | 79.6          | 46.8          | 55.9              |
| 8       | 36N 329669 m E 189505 m N | 81.9          | 49.6          | 62.2              |
| 9       | 36N 329697 m E 189602 m N | 83.8          | 53.3          | 64.1              |
| 10      | 36N 329697 m E 189602 m N | 84.1          | 50.0          | 60.2              |
| 11      | 36N 329712 m E 189603 m N | 90.2          | 51.1          | 67.3              |
| 12      | 36N 329724 m E 189555 m N | 91.7          | 49.6          | 63.5              |
| 13      | 36N 329734 m E 189609 m N | 94.2          | 51.9          | 66.3              |
| 14      | 36N 329748 m E 189612 m N | 95.2          | 45.1          | 61.8              |
| 15      | 36N 329748 m E 189612 m N | 95.3          | 44.7          | 61.0              |



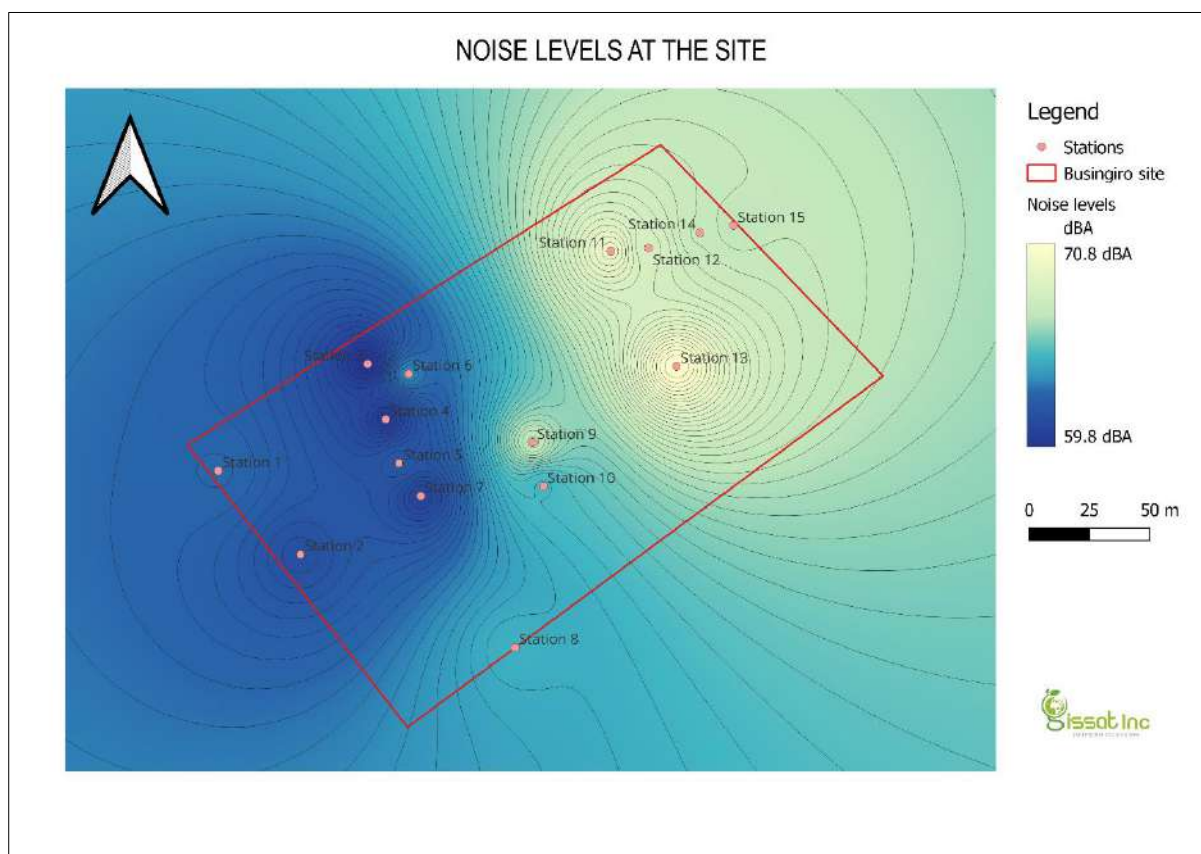


Figure 5.2: Noise measurements taken during day time

### 5.11.2 Ambient Air quality

From the active air sampling method described, the results of the baseline ambient air quality at the project site and the surroundings is presented in table 5.10. Note that Uganda does not have national standards for PM<sub>10</sub> and PM<sub>2.5</sub>, thus a comparison with the Draft National Air Quality Standards and IFC/WHO Air Quality Guidelines was completed to make inferences on the ambient air quality in the Project area. The permissible levels as per the East African Standard Air Quality Specification, EAS 751: 2021 were considered. The existing quality of the environment serves as an index for assessing the pollution load and the assimilative capacity of the area. The ambient air quality parameters are given in table 5.10 and figure 5.3 and 5.4 below.

Table 5.10: Ambient air quality

| Station | Coordinate                | PM <sub>2.5</sub> | PM <sub>10</sub> | PM <sub>1</sub> | HCHO  | TVOC  | TEMP | HUMIDITY |
|---------|---------------------------|-------------------|------------------|-----------------|-------|-------|------|----------|
| 1       | 36N 329534 m E 189512 m N | 2                 | 1                | 1               | 0.002 | 0.012 | 26   | 62       |
| 2       | 36N 329568 m E 189477 m N | 2                 | 1                | 2               | 0.006 | 0.025 | 26   | 61       |
| 3       | 36N 329596 m E 189556 m N | 4                 | 3                | 2               | 0.007 | 0.029 | 26   | 60       |
| 4       | 36N 329604 m E 189533 m N | 4                 | 2                | 4               | 0.008 | 0.034 | 26   | 62       |
| 5       | 36N 329618 m E 189501 m N | 4                 | 3                | 3               | 0.012 | 0.05  | 26   | 62       |
| 6       | 36N 329665 m E 189523 m N | 2                 | 1                | 2               | 0.01  | 0.045 | 25   | 62       |
| 7       | 36N 329665 m E 189523 m N | 2                 | 1                | 2               | 0.006 | 0.025 | 26   | 61       |
| 8       | 36N 329669 m E 189505 m N | 1                 | 2                | 1               | 0.007 | 0.028 | 26   | 62       |
| 9       | 36N 329697 m E 189602 m N | 3                 | 1                | 2               | 0.009 | 0.042 | 26   | 63       |
| 10      | 36N 329697 m E 189602 m N | 2                 | 1                | 2               | 0.01  | 0.037 | 25   | 62       |
| 11      | 36N 329712 m E 189603 m N | 2                 | 1                | 1               | 0.009 | 0.042 | 26   | 62       |
| 12      | 36N 329724 m E 189555 m N | 4                 | 3                | 3               | 0.001 | 0.046 | 26   | 62       |

| Station | Coordinate                | PM <sub>2.5</sub> | PM <sub>10</sub> | PM <sub>1</sub> | HCHO  | TVOC  | TEMP | HUMIDITY |
|---------|---------------------------|-------------------|------------------|-----------------|-------|-------|------|----------|
| 13      | 36N 329734 m E 189609 m N | 3                 | 2                | 2               | 0.014 | 0.057 | 26   | 60       |
| 14      | 36N 329748 m E 189612 m N | 2                 | 1                | 1               | 0.002 | 0.039 | 25   | 62       |
| 15      | 36N 329748 m E 189612 m N | 2                 | 1                | 2               | 0.005 | 0.019 | 26   | 61       |

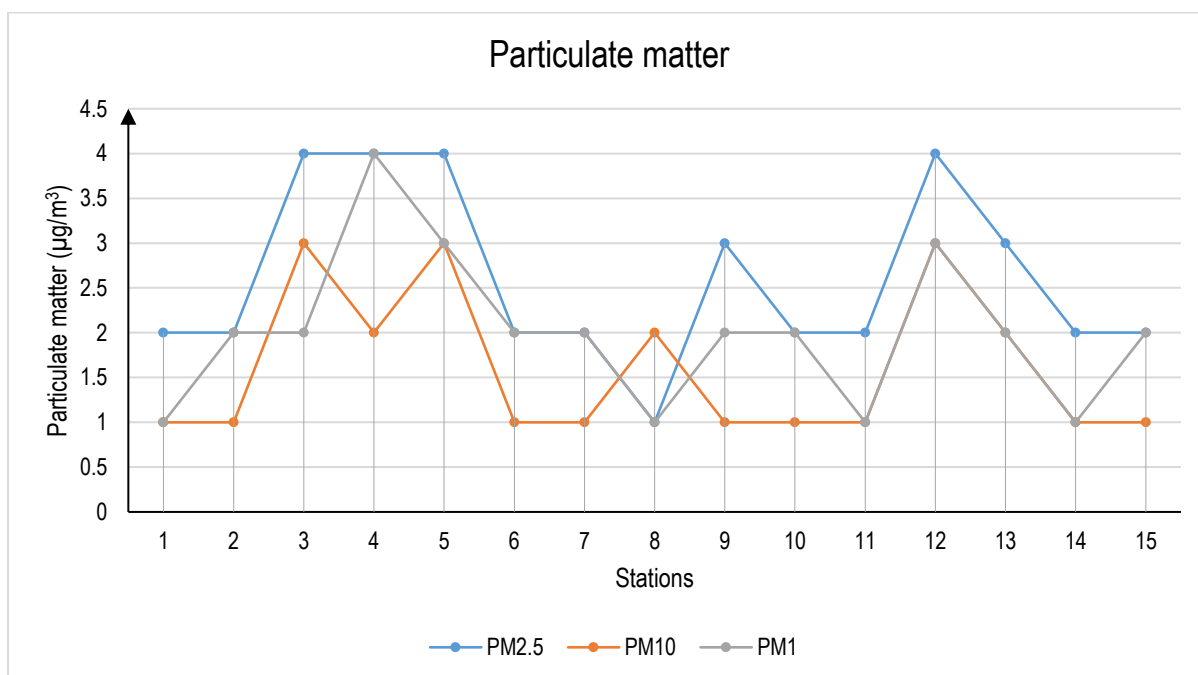


Figure 5.3: Particulate matter

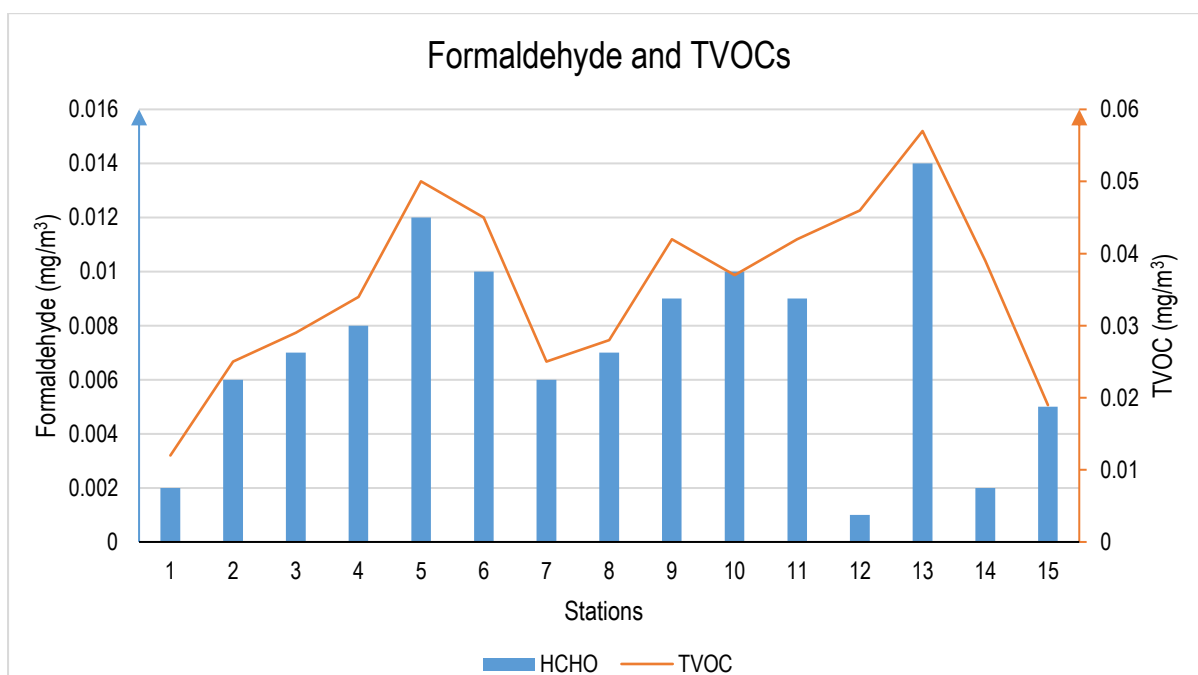


Figure 5.4: Formaldehyde and Total Volatile Organic Compounds

### 5.11.3 Water quality

For this study, water quality samples were picked from a bore hole located in Akiimi 'B' Village. The values of water quality parameters such as pH, Turbidity, conductivity from the sample collected were found to be within the recommended limits of National Standards for Natural portable water and WHO standards. The concentrations of 2 heavy metals (Magnesium and Calcium), were also measured and found to be well below the standard maximum



concentrations. Absence of coliforms indicates that there is no pollution of the water source. Subsequent water quality monitoring should be done during civil works to corroborate results with the baseline findings.

Table 5.11: Water analysis results

| Location                 | Akiimi 'B' Village Kihungya Sub County Buliisa District |           |
|--------------------------|---------------------------------------------------------|-----------|
| Coordinates              | 36N 329815.40 189703.17                                 |           |
| Parameter                | Value                                                   | Max limit |
| Colour (TCU)             | 2                                                       | 300       |
| TDS (Mg/L or ppm)        | 98                                                      | 1200      |
| TSS                      | 0.2                                                     | 100       |
| PH                       | 6.8                                                     | 8.0       |
| Conductivity $\mu$ s/cm  | 194                                                     | 500       |
| Lead (mg/L or ppm)       | 0.00                                                    | 0.1       |
| Nickel (mg/L or ppm)     | 0.00                                                    | 1.0       |
| Magnesium (mg/L or ppm)  | 1.23                                                    | 100       |
| Sodium (mg/L or ppm)     | 12.3                                                    | 100       |
| Turbidity (NTU)          | 1                                                       | 300       |
| Calcium (mg/L or ppm)    | 1.21                                                    | 100       |
| Chromium (mg/L or ppm)   | 0.11                                                    | 1.00      |
| Iron (mg/L or ppm)       | 0.04                                                    | 10.0      |
| Nitrates (mg/L or ppm)   | 0.05                                                    | 20.0      |
| Chlorides (mg/L or ppm)  | 12.3                                                    | 500       |
| Sulphates (mg/L or ppm)  | 12.3                                                    | 500       |
| Coliforms (C.F.U./100ml) | 0                                                       | 0         |

#### 5.11.4 Soil analysis

A soil sample was collected from the site and analysed against a wide range of physical and chemical parameters. This was done to establish the threshold values of the existing parameters therein. Results from the soil analysis are presented in table 5.12. Figure 5.5 presents the concentration levels of trace elements and heavy metals.

Table 5.12: Soil analysis results

| Location                                                   | Akiimi 'B' Village (36N 329717.53mE 189661.04mN) |      | Standards of the National Cooperative Soil Survey (NCSS) |
|------------------------------------------------------------|--------------------------------------------------|------|----------------------------------------------------------|
| Macro routine analysis                                     | PH                                               | 5.9  |                                                          |
|                                                            | Organic Matter (%age)                            | 1.35 |                                                          |
|                                                            | Nitrogen (%age)                                  | 0.09 |                                                          |
|                                                            | Average Phosphorus (ppm)                         | 9.88 |                                                          |
|                                                            | Potassium (cmoles/kg)                            | 0.87 |                                                          |
|                                                            | Sodium ((cmoles/kg)                              | 0.22 |                                                          |
|                                                            | Calcium (cmoles/kg)                              | 6.66 |                                                          |
|                                                            | Magnesium (cmoles/kg)                            | 2.35 |                                                          |
| Trace elements, heavy metals and oil & greases (ppm(mg/kg) | Copper                                           | 1.35 | 0.1-3.0                                                  |
|                                                            | Zinc                                             | 19.6 | 1-40                                                     |
|                                                            | Iron                                             | 98.6 | 50-1000                                                  |
|                                                            | Manganese                                        | 12.3 | 5-500                                                    |
|                                                            | Chromium                                         | 6.35 | 0.1-20.0                                                 |
|                                                            | Co                                               | 0.00 |                                                          |
|                                                            | Nickle                                           | 0.00 | 0.05-5.0                                                 |
|                                                            | Lead                                             | 0.00 | 0.2-2.0                                                  |
|                                                            | Cadmium                                          | 0.00 | 0.03-0.3                                                 |
|                                                            | Oils and grease                                  | 0.00 |                                                          |

|                                 |      |                      |  |
|---------------------------------|------|----------------------|--|
| Soil texture classification (%) | Sand | 60.0                 |  |
|                                 | Clay | 29.0                 |  |
|                                 | Silt | 11.0                 |  |
| Classification                  |      | Sandy Clay loam soil |  |

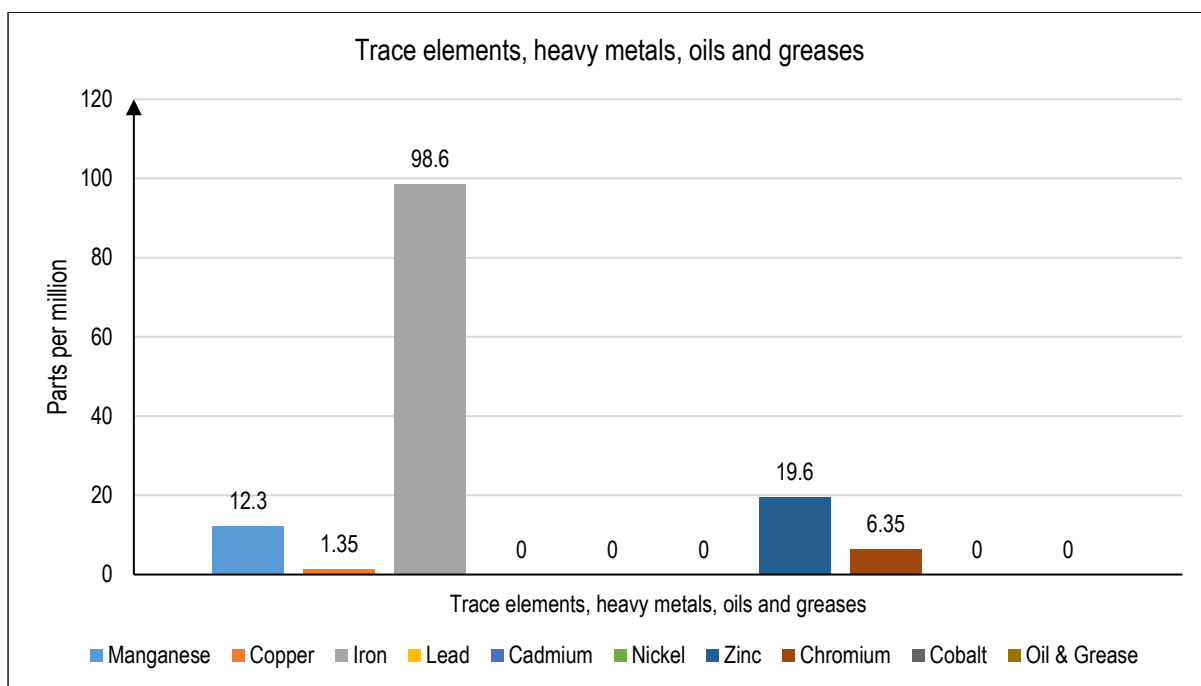


Figure 5.5: Trace elements, heavy metals, oils and greases

## **6.0: ANALYSIS OF ALTERNATIVES**

### **6.1 Introduction**

This chapter discusses and analyses alternatives to the proposed action and considers other practicable strategies that will promote the elimination of the negative environmental impacts identified. Section 15 (1) of the National Environment (Environmental and Social Assessment) Regulations, 2020 clearly states, *“Upon approval of the terms of reference, the developer shall undertake an environmental and social impact study to— ... (i) provide an analysis of alternatives including a detailed justification for the alternative selected, to enable informed decision-making regarding the project.”* In conformity to this section, and to enable the selection of the ideal development with minimal environmental disturbance, an analysis of alternatives to the proposed action is given in this report.

This chapter briefly refers to the consideration of alternatives and to decisions that have, to a large extent, defined the project design. The analysis of alternatives described in this chapter is structured to follow a ‘narrowing approach’ involving a series of logical steps, starting with the high-level alternatives (including those determined by third parties) followed by a description of more detailed alternatives considered as part of the project. For the planned project, alternatives considered include:

- a) *The option of not implementing the project.*
- b) *The proposed project activity;*
- c) *The alternative options for siting the VICs; and*
- d) *The option of establishing digital means of disseminating information to the visitors*

The objective of this chapter is to outline how the project represents an optimized design that is technically and financially feasible whilst minimizing overall environmental and social impacts. The assessment of impacts that will arise as the result of the project, along with the identification of appropriate mitigation measures are contained in this report. A number of alternatives were considered for this project with the purpose of ensuring that the best option that could achieve the project intended objectives with feasible costing while protecting the environment is selected. The consideration was based on options chosen by the design team in consultation with the relevant stakeholders. The alternative of not carrying out the proposed project was also considered to demonstrate environmental conditions without the project. It goes on to describe the high-level strategic options initially considered and progressively focuses on the more detailed project-specific alternatives considered as part of the engineering and design process.

Alternatives analysed herein considered all possible means by which the purpose and need of the proposed project could be accomplished. The determination of whether the site or activity (including different construction methods etc.) or both are appropriate was informed by the specific circumstances of the activity and its environment.

### **6.2 Alternative 1: “No Action” Alternative**

This alternative implies that the proponent would continue to operate under the current arrangement for tourism promotion and will not establish the proposed VIC. The selection of the “No Action” alternative would mean the discontinuation of project designs and result in the site being retained in its existing form. Not implementing the project would mean that the proponent would maintain the visitor management arrangements and retain the existing avenues for cultural tourism and community engagement. Not implementing the proposed VICs would also inhibit the proponent’s growth strategy and the evolution of the NFA tourism sector into a modern, robust and more efficient one. In consideration of the above demerits, this alternative was dropped for alternative 2.

### **6.3 Alternative 2: “The Proposed Development”**

This alternative considers the development of the VICs as proposed by the proponent, and as outlined in the ESIA document. This option has received unequivocal support from the different stakeholders i.e., the communities, conservation and eco-tourism groups, cultural institutions, local governments as well as the different government MDAs responsible for development in the country. Therefore, based on consultations, the stakeholders were supportive towards the project development. This is due to the positive benefits anticipated by the communities and other stakeholders. Under the proposed development alternative, the Proponent will be issued with an ESIA Certificate. In issuing the ESIA Certificate, NEMA will approve the Proponent's proposed development provided all environmental measures are complied with during the construction, operation and decommissioning phases.

### **6.4 Alternative 3: Digital Visitor Information Centre**

A virtual visitor information centre can be set up on the proponent's digital platforms such as the website and mobile applications. The virtual VIC will serve the same roles as the proposed VIC with features such as a front desk manned remotely by information clerks; e-payment provisions for bookings and purchases; and multimedia content such as documentaries, 360-degree images, music, narrations among others.

The Virtual VIC will also feature interactive elements such as Virtual Reality (VR) and Augmented Reality (AR) to allow the users to see the CFR's attractions such as wildlife species and the exhibits at the VICs such as crafts and artefacts in an immersive setting.

The benefits of a virtual VIC are that viewers can experience the CFR's attractions, access information and make bookings without travelling to the physical location, which means they aren't limited by available flights, travel logistics, time zones, safety concerns, and whether the destinations are open.

A virtual VIC would also have more reach than a physical VIC through the interconnectivity and global reach of the worldwide web and the zero travel costs involved. Any individual with access to the internet may at any time access the services of the VIC. Furthermore, visitors who experience CFR attractions through the interactive elements of the virtual VIC are likely to visit the physical location in the future. The experience of the Virtual VIC can easily be shared widely by the users and the proponent across online platforms.

The implementation cost of a Virtual VIC would be significantly high in consideration of the technical expertise, hardware and software requirements. The virtual VIC has limitations in the real world and for it to be effective, it must be complemented by a physical VIC. The Virtual VIC is also vulnerable to cyber-attacks and unforeseen technical issues that may cause it to be offline for extended periods of time. The functionality of a Virtual VIC is highly dependent on many variables such as internet connection, the actions of mobile network operators among others; this limits the control the proponent may have over the effectiveness of the virtual VIC.

A Virtual VIC would also exclude the human-to-human interaction which is very important in information dissemination and the leisure sector. Virtual experiences also do not match up to physical experiences of the wild destinations and cultural activities.

### **6.5 Alternative 4: Establishing the VIC in the major towns around the PA**

Tourist Information Centres (TIC) are the most important visitor service facility in a community. They are important because they frequently provide the initial contact with most tourists who visit a community, and because they have the opportunity and the responsibility for creating the first impressions a tourist will perceive. Establishment of TICs in and near the host community, provides visitors with complete information on the area. On the same wavelength, integrating the part of the community that benefits from tourism with the part that lacks a relationship with tourism is critical to fostering open dialogue and mutual benefits among

different divisions of an area. Other factors that guided the establishment of the VIC within the Central Forest Reserves other than major cities like Masindi include but not limited to:

- (i) To maximize the contribution of tourism to the economic prosperity of the host destination, including the proportion of visitor spending that is retained locally
- (ii) Strengthening the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race, disability or in other ways.
- (iii) Seeking a widespread and fair distribution of economic and social benefits from tourism throughout the recipient community, including improving opportunities, income and services available to the poor.
- (iv) To engage and empower local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders
- (v) Enhancing the historic heritage, authentic culture, traditions and distinctiveness of host communities.
- (vi) Engaging and empowering local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders.
- (vii) Minimizing the use of scarce and non-renewable resources in the development and operation of tourism facilities and services.
- (viii) Provision of a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, disability or in other ways.

## **6.6 Alternative 5: Design alternatives**

A “fit” design as detailed in sections 2.4 – 2.6 of Cap two is intended to achieve sustainability and quality of life for the environment and the communities that will have daily interaction with the VIC. The proposed Budongo VIC will become a part of the existing ecological and cultural realms. It is also vital to ensure the indigenous communities not only approve of it, but also are regarded as entities that should not be compromised.

One of the responsibilities of the proposed VIC is to create a destination for people to experience while allowing the traditional customs and practices of the indigenous populations to continue. The proposed visitor facility also strives not only to sustain and conserve the existing ecological processes, but enhance them, if possible. Furthermore, sustaining and conserving the environment shall be achieved by allowing ecosystems to naturally grow and prosper.

“The concept of sustainable construction of the VIC shall incorporate and integrate a variety of strategies during the design, construction and operation of the VIC. The use of green building materials and products as shown in figure 2.4 for the Budongo VIC represents one important strategy in the design of the VIC. Some of the benefits offered from green building materials include:

- (i) Reduced maintenance / replacement costs over the life of the building
- (ii) Energy conservation
- (iii) Improved occupant health and productivity
- (iv) Lower costs associated with changing space configurations
- (v) Greater design flexibility

## **6.7 Alternative 6 Location alternatives**

Following an extensive site selection process as elaborated in below, two other locations were identified however they didn’t offer all the benefits of the proposed site at a minimal capital investment. The proposed site was identified as the most suitable location for the proposed development



### 6.7.1 Site alternative options

Achieving a sustainable building requires a commitment from developing the initial Facility and Operational Requirements (F&OR) documents through construction detailing and commissioning. Initial decisions, such as the building's location, general massing, and configuration profoundly affect the building's environmental impact and energy performance. Well defined sustainable goals guide the entire spectrum of decision-making throughout the design and construction process. Informed site selection and analysis maximizes identification of optimal spaces / sites that do meet the functional and operational needs of the proposed facility – visitor information centre. With an eye toward sustainability and achieving visitor satisfaction, the selection of the individual sites was described in terms of their:

- Primary functions of the VIC;
- Occupancy and time of use;
- Daylight potential and electric light requirements;
- Indoor environmental quality standards; and
- Safety and security.

The attributes for the site that guided the site selection process is detailed in the table below.

Table 6.1: Attributes of each site considered for the proposed VIC

| No   | Proposed VIC | Site Attribute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
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|      |              | Preferred Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Alternative one                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Alternative two |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
|      | Budongo CFR  | <div><div><div>(i) The preferred site is at the Busingiro Tourist site.</div><div>(ii) It's easily accessible along the Masindi-Biiso Road which passes through the Budongo CFR.</div><div>(iii) Allows for increased protection in Busingiro and Royal Mile</div><div>(iv) It's close to the Royal Mile which is an Important Bird Area (IBA)</div><div>(v) It will improve visibility of Busingiro and Royal Mile as tourist destinations</div><div>(vi) There are plans for a Community of Chimpanzees to be habituated under the IFPA-CD project</div><div>(vii) It's closer to communities than other sites enhancing socio-economic benefits from the project.</div><div>(viii) There is a proposed road linking the 2 sites and possibly beyond, from Busingiro to the Royal Mile, and possibly to Kaniyo-Pabidi, which will make it even easier for tourists to move with no inconveniencies and access the activities at different sites</div></div></div> | <div><div>The alternative site considered is at coordinate 1.825587°,31.694144° in Kasenyi Bokwe village approximately 4.7km South of the Kichumbanyobo gate along the Paraa – Masindi Road. The site is adjacent to the Ama Ply facility on the border of the Budongo forest reserve. The site was not considered basing on the following aspects:<br/>Site is not easily accessible.</div><div>Encroachment from commercial activity in Kasenyi Bokwe<br/>Risk of falling old trees</div><div><table><tr><th>Zone</th><th>Easting</th><th>Northing</th></tr><tr><td>36N</td><td>354653 m E</td><td>201797 m N</td></tr><tr><td>36N</td><td>354708 m E</td><td>201713 m N</td></tr><tr><td>36N</td><td>354702 m E</td><td>201670 m N</td></tr><tr><td>36N</td><td>354638 m E</td><td>201634 m N</td></tr><tr><td>36N</td><td>354610 m E</td><td>201681 m N</td></tr><tr><td>36N</td><td>354629 m E</td><td>201748 m N</td></tr></table></div></div> | Zone            | Easting | Northing | 36N | 354653 m E | 201797 m N | 36N | 354708 m E | 201713 m N | 36N | 354702 m E | 201670 m N | 36N | 354638 m E | 201634 m N | 36N | 354610 m E | 201681 m N | 36N | 354629 m E | 201748 m N | <div><div><div>(i) The second alternative is the current location of the Budongo Eco Lodge in Kaniyo Pabidi at coordinate 1.918396°, 31.719384°; approximately 7.4km North of the Kichumbanyobo gate. The proposition is to relocate the Budongo Eco Lodge 2km further north from its current location to coordinate 1.933294°, 31.711614°.</div><div>(ii) Site is close to existing forest activities i.e., primate tracking and habituation</div><div>(iii) This alternative is not financially feasible</div><div>(iv) NFA does not have full control over access to this site (due to the presence of the UWA-controlled Kichumbanyobo Gate south of the site)</div><div>(v) Stop over at the Kichumbanyobo gate presents risk of abandonment as tourists will be inconvenienced by two stop overs less than 8km apart</div></div><div><table><tr><th>Zone</th><th>Easting</th><th>Northing</th></tr><tr><td>36N</td><td>357474 m E</td><td>212134 m N</td></tr><tr><td>36N</td><td>357579 m E</td><td>212130 m N</td></tr><tr><td>36N</td><td>357597 m E</td><td>212019 m N</td></tr><tr><td>36N</td><td>357509 m E</td><td>211999 m N</td></tr></table></div></div> | Zone | Easting | Northing | 36N | 357474 m E | 212134 m N | 36N | 357579 m E | 212130 m N | 36N | 357597 m E | 212019 m N | 36N | 357509 m E | 211999 m N |
| Zone | Easting      | Northing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 354653 m E   | 201797 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 354708 m E   | 201713 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 354702 m E   | 201670 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 354638 m E   | 201634 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 354610 m E   | 201681 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 354629 m E   | 201748 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| Zone | Easting      | Northing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 357474 m E   | 212134 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 357579 m E   | 212130 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 357597 m E   | 212019 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |
| 36N  | 357509 m E   | 211999 m N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |         |          |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |     |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |         |          |     |            |            |     |            |            |     |            |            |     |            |            |



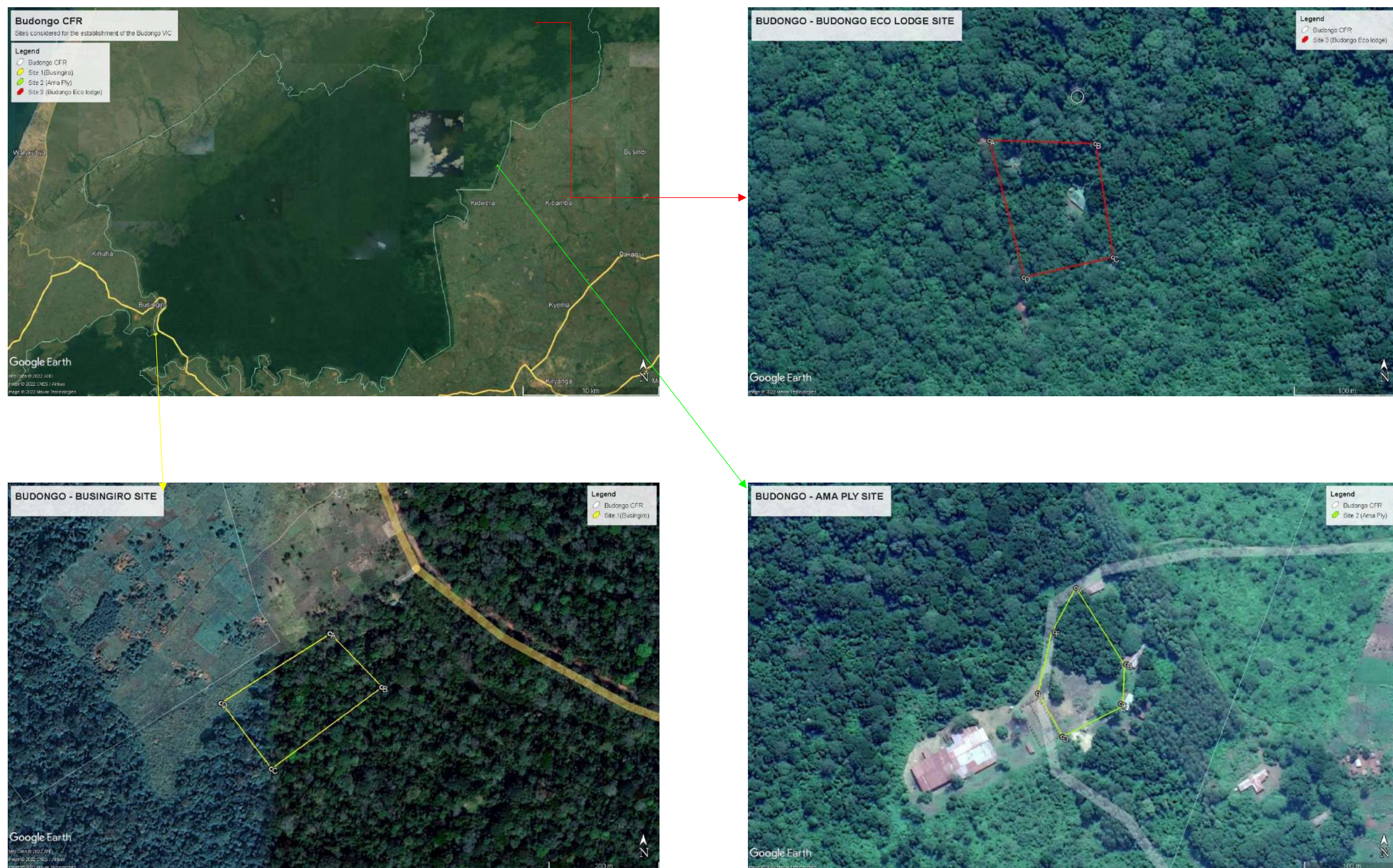


Figure 6.1: Overview of the sites considered for the proposed Budongo VIC



## 7.0 PUBLIC PARTICIPATION PROCESS AND DISCLOSURE

### 7.1 Overview

Public participation is the involvement of all parties who potentially have an interest in a development or project, or may be affected by it. The principal objective of public participation in an Environmental and Social Impact Assessment (ESIA) process is to inform the relevant stakeholders and enrich decision-making. Public consultation is an integral part of the ESIA process that ensures that the views (on the proposed development) of the community members and other stakeholders are heard and taken into consideration. As provided for in the existing environmental laws and regulations, such as the National Environmental Act No.5 of 2019 and the National Environment (Environmental and Social Assessment) Regulations, 2020; individuals, groups and institutions that were considered to possess a vested interest in the implementation and operation of the proposed VIC were involved in the preparation of this report.

Disclosure refers to the provision of relevant and adequate project information to enable stakeholders to understand the risks, impact and opportunities of the project. The views of the identified stakeholders are then considered, responded to and incorporated into the decision-making process. According to the NEMA EIA guidelines, public consultation is viewed as a critical tool for raising awareness of project impacts and gaining agreement on management and technical approaches to maximize benefits and reduce negative consequences.

Furthermore, the tourism sector recognises that the benefits of visitor activity reach beyond industries that directly service visitors such as attractions, accommodation, tour companies and transport providers to retail, food production and service providers and other industries involved indirectly. The various stakeholders and their roles in developing the tourism sector are outlined in figure 7.1 below.



Figure 7.1: Stakeholders pertinent to the project

## 7.2 Consultation objectives

Public consultation and disclosure is a cornerstone of the approach to planning and implementation of developmental projects such as the proposed VIC. Effective dialogue and exchange amongst the full range of stakeholders is a critical element to the success of the ESIA, the project planning processes, and the subsequent realization of project objectives. Stakeholder engagement will be used as a tool for two-way communication between the proponent (including its project managers/team, consultants and contractors) and the public during all phases of project development. The proponent shall commit to active communication with all affected communities, organizations, groups and individuals with an interest in the project.

Stakeholder consultations to support the ESIA process aims to achieve the following objectives:

- a) Introducing the project to the stakeholders;
- b) Gaining their views, concerns and values;
- c) Taking account of public inputs in decision making;
- d) Obtaining local knowledge;
- e) Increasing public confidence;
- f) Improving transparency and accountability in decision-making; and
- g) Reducing conflict.

## 7.3 Envisaged benefits

The benefits of the public consultation exercises include:

- Provision of opportunities to foresee and/or resolve potential obstacles, constraints and conflicts;
- Means to identify and address potential negative social and environmental impacts as envisaged by stakeholders;
- Opportunities to generate social learning and innovations based on local field experiences;
- Strengthened working relations between stakeholders; Government Ministries, Departments and Agencies (NEMA, NFA, UWA and MTWA), cultural institutions, Collaborative Forest Management (CFM) groups and relevant district local governments.

Consultations were initiated with a selection of key stakeholders at the national, district and local level for this ESIA study. In the context of this project, stakeholder consultation was;

- key to generating a good understanding of the project;
- key to affected communities participating in the formulation and refinement of the project implementation;
- essential to understanding local expectations throughout the life of the project;
- required to develop effective mitigation measures and management plans;
- an essential tool for optimizing local benefits that can be delivered through the project; and

For this assessment, consultations involved meetings that were held at the national, district and community levels. The meetings aimed to provide background information about the proposed project and to solicit input from the stakeholders about the rationale and potential impacts of the project.

## 7.4 Methodology

The methodology for stakeholder engagement entailed:

- Stakeholder analysis to determine relevant stakeholders and their interests.
- Identification of suitable modes of contact (e.g., community meetings, face-to-face interviews, virtual meetings etc.)

- Development of a consultation log and record of key issues raised. These were synthesized and utilized in impact prediction and mitigation measure recommendations.

#### 7.4.1 Data collection

Both primary and secondary data collection methods were employed to garner sufficient data for both the baseline and impact assessment studies.

##### 7.4.1.1 Collection of secondary data

Secondary data was obtained by reviewing the following relevant documents

- Statistical Abstracts for the subject districts.
- NEMA's State of Environment reports.
- Budongo Central Forest Reserve general management plan
- Other relevant literature

##### 7.4.1.2 Collection of primary data

Collection of primary data involved engaging with several key stakeholders using participatory approaches that promote information disclosure and dialogue upholding international best practices. The following approaches were used to gather information as guided by the study objectives:

- Key Informant Interviews (KIIs) to obtain stakeholders' views and concerns about the proposed VIC and specifically in the proposed project area.
- Focus Group Discussions (FGDs) held with communities within the proposed project areas to solicit their concerns and expectations in a bid to estimate the degree of project success and identify the anticipated challenges and conflicts.
- Electronic forms were shared with tour operators (through the Association of Uganda Tour Operators) with structured questionnaires to allow them to air out their views in relation to the proposed project.

Key stakeholders that were identified through a stakeholder analysis exercise are categorized in table 7.1 below.

Table 7.1: Stakeholder categories

| Category                             | Stakeholder                                                                                                                                                                                                                                                       | Connection to the project                                                                                                                                                                                                                                                                                     |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Government/<br>National              | <ul style="list-style-type: none"> <li>- National Environment Management Authority</li> <li>- Ministry of Tourism, Wildlife and Antiquities</li> <li>- National Forestry Authority</li> <li>- Ministry of Water and Environment</li> </ul>                        | National government bodies are of primary importance in terms of establishing policy, granting permits or other approvals for the project, and monitoring and enforcing compliance with the Ugandan law throughout all stages of the project life cycle.                                                      |
| District and<br>Local<br>Authorities | <ul style="list-style-type: none"> <li>- Buliisa District Local Government</li> </ul>                                                                                                                                                                             | Several district and local authorities are mandated to oversee the development and operation of the proposed project and therefore need to be informed of progress and plans in their areas to factor in the project activities during their policy formulation and other duties.                             |
| Private<br>partners                  | <ul style="list-style-type: none"> <li>- Concessionaires</li> <li>- Uganda Tour Operators Association</li> <li>- Uganda Safari Guides Association</li> <li>- Uganda Tourism Association</li> <li>- Eco-tourism and conservation groups</li> <li>- NGOs</li> </ul> | Private organizations play a critical role in tourism by filling gaps in the service industry; through providing services in hospitality, transportation, scheduling and entertainment. Private organizations are a fundamental component of tourism through their aggressive marketing of tourism sites. The |



| Category  | Stakeholder                                                                                                                                                                             | Connection to the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                                                                                                                                                                                         | <p>tourism promotion efforts by the concessionaires and tour operators are complemented by conservation initiatives implemented by NGOs and Conservation groups.</p> <p>In consideration of the parallel nature of the objectives of the VIC and the roles of the private partners, it is pertinent to engage with them to establish the best avenues through which they may participate in the project.</p>                                                                                                                           |
| Community | <ul style="list-style-type: none"> <li>- Cultural institutions</li> <li>- Local leaders</li> <li>- Collaborative Forest Management (CFM) groups</li> <li>- Community members</li> </ul> | <p>Cultural institutions preserve and protect the history, sites, articles and beliefs that the people revere and unite around. Cultural institutions and local communities possess deep knowledge of the local natural resources and vital socio-economic dynamics.</p> <p>These groups will be consulted to introduce the project to them, seek guidance on the incorporation of the cultural elements into the VIC and identify any anticipated conflicts between the project and the local community or cultural institutions.</p> |

## 7.5 Summary of issues raised

The main issues raised during the consultation meetings are summarised in table 7.2. In general, the main reaction of the stakeholders was positive in terms of the development that can take place in these areas, if implemented. Consultation records are included in this report under appendix D.

Table 7.2: Summary of issues raised

| Agency                                                                                                                                                                                                                                                                                                                                                    | Key issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NFA, CFMs, Local leaders, Community members</b><br><br>29 <sup>th</sup> June 2022 at St. John Bosco Primary School (36N 329744.43 m E 189928.50 m N)                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>NFA should create avenues through which the CFM groups can participate in project implementation. This can be through the provision of space and time for exhibitions, dances, poems and musical performances</li> <li>The VIC should have interactive spaces where visitors can wind down, engage in conversation and enjoy the Budongo forest environment</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Buliisa District Local Government</b><br><br>30 <sup>th</sup> of May 2022 at the Buliisa District Local Government Headquarters (36N 324030.68 m E 232632.99 m N)<br><br>Mr Tibasima Gilbert, District Vice Chairperson<br>Mr Tumusiime Rogers – District Environment Officer<br>Mr Barugahara Benard Atwooki - District Community Development Officer | <ul style="list-style-type: none"> <li>The establishment of the VIC is obliged to have an environmental/ conservation/ tourism focal person</li> <li>Technical guidance to protect the environment and natural resources must be sought from an expert before the establishment of the VIC</li> <li>An ESIA must be conducted for the VIC to ensure project activities do not interfere with wildlife within the CFR</li> <li>The Proponent must adopt the measures to ensure construction and landscaping activities are not a source of invasive species within the CFR</li> <li>The VIC should promote local content and offer fairly priced crafts; this will enhance gains made by local tourists to the facility</li> <li>With the increase in cases of human-wildlife conflicts, considerations should be made to ensure the safety of personnel and property at the VIC.</li> <li>The Proponent should consider naming the VIC after historically significant persons, events or locations; this will increase project acceptance among the local tourists and the indigenous communities.</li> <li>Information relating to the history of the human-wildlife conflicts in the area should be disseminated at the VIC; this will increase awareness of the ongoing challenges and improve dialogue on the recommended way forward.</li> <li>The history and heritage of indigenous communities such as the Batyawa, Bagungu, and the Bakibiro should be included as part of the cultural tourism products at the VIC.</li> <li>The construction workers should be sensitized to desist from social vices and criminal activities</li> </ul> |
| <b>National Forestry Authority</b><br><br>6 <sup>th</sup> June, 2022 at NFA Headquarters – Bugolobi<br><br>Stuart Maniraguha – Director Plantations                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>VIC is supposed to provide information on eco-tourism, historical background and conservation education for potential visitors. The facility needs to achieve the objectives of sustainable tourism.</li> <li>The design team must follow land use planning guidelines when setting up the VIC (eco-tourism planning).</li> <li>All proposed plans must be issued to the DLGs for approval by the concerned district officials (Engineer, Physical Planner, public Health Officer and a certificate of occupancy issued).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Agency                                                                                                                                                                                                                                                                                                                                                                           | Key issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Tom Rukundo – Director Natural Forests<br/>Sylvia Tumusiime – Eco-Tourism Officer<br/>Rashid Sekiito – Landuse / GIS Specialist</p>                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Uganda Wildlife Authority – Directorate of Tourism and Business Services</b></p> <p>20<sup>th</sup> May, 2022 at UWA Headquarters – Kamwokya</p> <p>Ms Dorcus Twesigomwe – Manager – Business Development<br/>Mr Paul Asiimwe</p>                                                                                                                                          | <ul style="list-style-type: none"> <li>• The quality of products to be supplied (offered) being of inferior quality</li> <li>• Over staying in the park (long durations) which interferes with the natural habitat cover within the affected Parks.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>Uganda Wildlife Authority - Research, Monitoring, Environment Impact Assessment</b></p> <p>17<sup>th</sup> June, 2022 at UWA Headquarters – Kamwokya</p> <p>Mr Aggrey Rwetsiba – Senior Research and Monitoring Coordinator<br/>Mr Justine Naamara – Manager EIA and Oil Monitoring/ Board Member IAIA<br/>Ms Florence Kyalimpa – Warden Environment Impact Assessment</p> | <ul style="list-style-type: none"> <li>• Electric fences, trenches, Fireline's, vuvuzelas and other sound horns are used in fire management within the PAs. Communities are given a small token fee for maintenance work within the park.</li> <li>• Recruitment of rangers is mostly from the host communities so these people get a chance to participate in conservation work to protect the PAs.</li> <li>• Need for periodical surveys and ranger-based data to be used in improved management of the PAs. This will also help address anthropogenic impacts in these critical ecosystems.</li> <li>• Monitoring and research helps other users to present information-based decisions / uses.</li> <li>• The VICs using WIFI may be able to livestream and promote conservation and tourism. Digital marketing is one of the avenues to promote sustainable management of these PAs. Telecom infrastructure must fit within the general management plan of the PAs in order to balance development with conservation.</li> <li>• Meaningful visitor experiences attract high end lodges e.g., Space for Giants are partnering with UWA to give out concessions within MFNP to set up world-class conservation lodges.</li> </ul> |
| <p><b>National Environment Management Authority</b></p> <p>17<sup>th</sup> June, 2022 at NEMA Headquarters – Kampala</p> <p>Dr. Akankwasah Barirega – Executive Director<br/>Mr Waisswa Ayazika – Director - Environmental Monitoring and Compliance</p>                                                                                                                         | <ul style="list-style-type: none"> <li>• The rapidly expanding demand for tourism development associated with protected areas emphasizes the need to provide clear guidance that will contribute towards sustainable tourism consistent with the primary conservation objectives of protected areas.</li> <li>• Tourism (VICs) provides a crucial and unique way of fostering visitors' connection with protected area values, making it a potentially positive force for conservation.</li> <li>• VICs are one-stop points where visitors arrive to get “appetite” to experience the PAs. They are information points that can showcase historical, cultural information among others. When they are established at the gates or near gates to the PAs, this makes a lot of sense and helps the visitors benefit more from their experience.</li> <li>• Host communities can be involved in the VIC operation through local performances; sale of culture; support conservation; outsource the curio shop at the facility to the local communities inter alia.</li> </ul>                                                                                                                                                             |

| Agency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Key issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• The VICs should provide an opportunity for giving feedback to allow for improvement according to the needs of visitors to ensure satisfaction. Comments from visitors should be analysed to ensure that any raised concerns are addressed.</li> <li>• Materials to be chosen for site design and construction must be based on sources that minimise damage and exhibit properties such as durability, recyclability, availability and sustainability</li> <li>• Need to use environmental education and interpretation programmes to emotionally engage visitors, and connect them with the values the area is protecting.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>Ministry of Tourism, Wildlife and Antiquities (Department of Museums and Monuments)</b></p> <p>4<sup>th</sup> November, 2022 at the Uganda National Museum, Kira Road</p> <p>Ms Nyiracyiza Jackline Besigye – Ag. Commissioner<br/>Mr Asiimwe Raymond – Senior Conservation Officer</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• If construction takes place and archaeological sites are exposed, it should immediately be reported to the department of museums and monuments so that an investigation and evaluation of the finds can be made by the archaeologists.</li> <li>• The ESIA should recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.</li> <li>• For the construction phase, project development should commit to: <ul style="list-style-type: none"> <li>i. avoid disturbing sites of heritage importance; and</li> <li>ii. avoid disturbing burial sites.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p><b>Ministry of Tourism, Wildlife and Antiquities - Department of Wildlife Conservation</b></p> <p>11<sup>th</sup> September, 2022 at MTWA, Rwenzori Towers</p> <p>Mr Baluku Joward – Senior Wildlife Officer – 0776165072 – <a href="mailto:joward.baluku@tourism.go.ug">joward.baluku@tourism.go.ug</a><br/>Mr Kijjambu Charles – Wildlife Officer – 0787307430 – <a href="mailto:charles.kijjambu@tourism.go.ug">charles.kijjambu@tourism.go.ug</a><br/>Mr Stephen Fred Okiror – Ag. Principal Wildlife Officer – 0772931963 – <a href="mailto:sfokiror@gmail.com">sfokiror@gmail.com</a><br/>Mr Micheal Mutebi – Wildlife Officer – 0758468731 – <a href="mailto:michealmutebi256@gmail.com">michealmutebi256@gmail.com</a></p> | <ul style="list-style-type: none"> <li>• Review of the Tourism Act to streamline mandates of various Government MDAs in tourism development and wildlife conservation</li> <li>• The development of a management plan for wildlife outside protected areas</li> <li>• Establishing the National Wildlife Crime Coordination Taskforce (NWCCT) comprised of UWA, UPF, FIA, Interpol, UPDF, Customs, and NFA</li> <li>• Diversifying tourism products by adopting religious tourism, dark tourism and cultural tourism</li> <li>• Building capacity among sector players through training and support, for example, through the Uganda Crafts and Souvenir Development Project</li> <li>• Putting in place avenues to establish sport hunting on private land</li> <li>• Supporting the establishment of ranches and mini zoos by the private sector</li> <li>• Implementing the Uganda Wildlife (Compensation Scheme) Regulations 2022 No.64, and the Uganda Wildlife (Revenue Sharing) Regulations 2022 No.65 were gazetted on 05 August 2022</li> <li>• Engaging in Transboundary conservation programs such as the Great Virunga Transboundary Collaboration (GVTC) and Mount Elgon Regional Ecosystem Conservation Programme (MERECAP)</li> <li>• MTWA has enhanced the operations and revised the curriculum at the Uganda Hotel and Tourism Training Institute (UHTTI) and Uganda Wildlife Training Institute (UWTI)</li> </ul> |



| Agency                                                                                                                                                                                                                                                                     | Key issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Building the capacity of UWEC to exercise its mandate of implementing conservation education programs across the country</li> <li>• The VICs should be operated as a business model which generates revenue. This will allow them to become self-sustaining and increase their longevity.</li> <li>• Rapid inquiry on the location and condition of existing VICs in and around the protected areas</li> </ul>                                                                                                                                                                                                                                                |
| <p><b>Ministry of Gender, Labour and Social Development - Department of Culture and Family Affairs</b></p> <p>14<sup>th</sup> November 2022, Gender, Labour and Development House</p> <p>Ms Ruth Muguta Tusaasirwe, Commissioner Cultural Affairs</p>                      | <ul style="list-style-type: none"> <li>• Gaps in funding: These are manifested by shortages of essential training requirements due to poor funding, there are shortages of skilled staff. The monitoring and evaluation process is also slowed down.</li> <li>• Dying cultural activities: These are mostly spear headed by the community who copy the modern culture. This is through the use of the internet. The religion also discourages some cultural practices which makes preservation hard.</li> <li>• Addressing poor coordination within various Ministries that are in the cultural heritage sector: This makes work difficult because each ministry has a different framework.</li> </ul> |
| <p><b>International Union for Conservation of Nature (IUCN)</b></p> <p>17<sup>th</sup> November 2022 at IUCN – Uganda Offices</p> <p>Mr James Omoding – Senior Programmes Officer</p>                                                                                      | <ul style="list-style-type: none"> <li>• Enhancing PA governance through increased research into the challenges facing PAs, avenues for collaboration and biodiversity conservation</li> <li>• GOU and the private sector should fill the existing gap in quality accommodation services; these should address all income groups to increase the number of participants and maximize the gains from the tourism sector</li> <li>• Utilising the funds from revenue sharing (20%) to establish quality tourism facilities by host communities that can generate revenue</li> </ul>                                                                                                                      |
| <p><b>Association of Uganda Tour Operators</b></p> <p>11<sup>th</sup> September 2022 at AUTO Headquarters</p> <p>Mr Albert Kasozi – Chief Executive Officer<br/>Ms Nancy Okwong – Public Relations Officer – 0772183898<br/>Mr Jackson Sebugwawo – Executive Assistant</p> | <ul style="list-style-type: none"> <li>• The design of the VIC should, as much as possible, align with the unique character of the protected area where it is established</li> <li>• Tour operators and guides should be engaged throughout the implementation of the project. This will allow the tour operators to understand the potential benefits and embrace the VICs.</li> <li>• Tour guides should be engaged as part of the VIC project, this will ensure guides do not share information contrary to that in the VICs. This may be done by the Uganda Safari Guides Association (USAGA)</li> </ul>                                                                                           |
| <p><b>Association of Uganda Tour Operators</b></p> <p>11<sup>th</sup> September, 2022 at USAGA – UTA offices in Nakawa</p>                                                                                                                                                 | <ul style="list-style-type: none"> <li>• The proposed VICs must act as information banks, to allow for the archiving and retrieval of tourism-related information.</li> <li>• NFA should collaborate with tour operators to ensure the success of the revenue generating components of the VIC. This will make the project self-sustaining and give it longevity.</li> </ul>                                                                                                                                                                                                                                                                                                                           |

| Agency                                                                                                                                                                                                                                                                                                                     | Key issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Mr Herbert Byaruhanga – President (UTA) & General Secretary (USAGA)                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Comprehensive capacity building initiatives should be instituted for tour guides to enhance their skills and knowledge base. These initiatives will consolidate the benefits of the VICs since tour guides are often the first points of contacts with tourists in the parks and a crucial source of information and contribute immensely to visitor experience</li> <li>• NFA should involve guides during product development; this is because guides are an important avenue for gathering feedback from tourists on their experiences, expectations and possible areas for improvement.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><b>Private Tour Operators</b></p> <p>Google form: <a href="https://forms.gle/YdmEwTLSUY8DTQuY7">https://forms.gle/YdmEwTLSUY8DTQuY7</a></p> <p>Tour Operators</p>                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Provide skilled, trained and informed staff and involve private stakeholders</li> <li>• Provide maps to visitors</li> <li>• Limited information at the VICs about communities especially in written format</li> <li>• The VICs cover only specific regions leaving out other tourism destinations in the country such as the Karamoja sub-region</li> <li>• Renovation and redesigning the VICs to attract even more visitors</li> <li>• Misinformation provided by the VICs implies the need for more VICs spread across</li> <li>• Poor sanitation and housekeeping at some of the VICs</li> <li>• Acquire and share more accurate information</li> <li>• Encourage private companies to engage and partner with VICs</li> <li>• Redesign the structures with modern facilities to attract even more visitors</li> <li>• Conducting training workshops</li> <li>• Sub-contracting with the operation offices</li> <li>• Provide information and share ideas to attract more tourists</li> </ul> |
| <p><b>Ministry of Water and Environment - Department of Environment Support Services</b></p> <p>14<sup>th</sup> March 2023 at the Ministry of Water and Environment - Department of Environment Support Services</p> <p>Ministry of Water and Environment representatives<br/>Uganda Wildlife Authority representative</p> | <ul style="list-style-type: none"> <li>• For cases where the existing water supply infrastructure at the various VIC sites needs to be upgraded or there is a need to sink new boreholes, the proponents should apply for the necessary permits from the responsible lead agencies. This should also be done for all project structural plans and architectural drawings.</li> <li>• Clearly define the site selection criteria utilized by UWA and the National Forestry Authority (NFA) in prioritizing the VIC sites. This should clearly be outlined under the analysis of alternatives chapter. Project construction activities and the location of VICs within the selected PAs should not hinder the movement of wild animals or trails or impact fragile ecosystems. Minimize the requirements for landscaping.</li> <li>• The ESIA must critically examine the impacts and propose feasible mitigation measures to address them</li> </ul>                                                                                        |
| <b>Ministry of Water and Environment - Department of Environment Support Services</b>                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• Some of the project selected areas are prone to flooding. The river is also known to shift course which can impact on the project components. The design team should carry out a flood risk assessment to determine</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Agency                                                                                                                                                                                                              | Key issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <p>21<sup>st</sup> March 2023 at the Ministry of Water and Environment – Level I – Nile Boardroom</p> <p>Directorate of Water Resources Management (DWRM) staff</p> <p>Uganda Wildlife Authority representative</p> | <p>the flood risks for both fluvial and pluvial resources occurring within the identified project sites. Preferably a model of a 100-year flood event can be considered.</p> <ul style="list-style-type: none"> <li>• The designs of the proposed Visitor Information Centers should be bench marked against international standards for such facilities and other contemporary visitor information facilities in the neighboring countries like Kenya and Rwanda.</li> <li>• The project only targets PAs within the Albertine landscape and is only for establishment of VICs and not accommodation facilities.</li> <li>• Sustainable designs for all access routes and drainage should be adopted at all the proposed VICs to mitigate on risk of erosion leading to contamination of water bodies.</li> <li>• It was observed however that most components and infrastructure proposed will as much as possible be fitted within the existing footprint at all the selected sites. There will be minimum deviations from what is existing e.g. parking areas, access roads, water supply etc.</li> <li>• Harvesting of rain water as proposed by the design team is highly recommended, however, it is important to determine that the identified sources are sufficient and sustainable in the long term.</li> <li>• The capacity of the identified systems to manage the supply and demand and determination of the best supply option is based on the target demand (users) and whether the abstraction is from a surface or underground water source. This can only be done following an assessment of the characteristics of the identified source.</li> <li>• Water abstraction both from surface and underground sources requires permission from the Directorate of Water Resources especially where there is use of motorized pumps.</li> <li>• Need to engage qualified professionals to determine the project water use requirements (Hydrologists, Hydro-geologists, Water Resources Engineers, etc. The DWRM has a database of licensed hydro-geologists and should be consulted to get the certified specialists. The ESIA team should have a certified hydrologist and/or hydro-geologist to cater for water resources requirements of the project.</li> <li>• For cases where the existing water supply infrastructure at the various VIC sites needs to be upgraded or there is need to sink new boreholes, the proponents should apply for the necessary permits from the Directorate. For any construction near rivers, the contractors should apply for construction permits from the Directorate Water Resources Management.</li> <li>• During construction, there could be oil and diesel spills, hazardous chemical spills, fluids including paint and solvent spillages. This however shall be mitigated by routinely checking machinery and vehicles for leakages, training staff to use construction equipment correctly and identify spills &amp; leaks in the early stages among others. Filling of generators to be done in bunded areas and spills cleaned immediately.</li> </ul> |

## **7.6 Grievance redress mechanism**

### **7.6.1 Overview**

The GRM is designed to act as recourse for situations in which some stakeholders may have a concern about the project's potential impacts on them. Ultimately the purpose of the GRM is to find a win-win solution and in case the GRM fails, the parties to a grievance may resort to the formal courts at any stage of the grievance resolution process. It is intended to complement, not replace, formal legal channels for managing grievances.

The primary aim of the Grievance Redress Mechanism (GRM) within IFPA-CD is to proactively detect and prevent grievances before they arise. Furthermore, it seeks to effectively mitigate the consequences of grievances when they do occur and prevent their escalation.

### **7.6.2 Specific objectives**

By implementing the enhanced practices throughout the project lifecycle, the GRM shall serve as an effective, equitable, and adaptive tool for addressing grievances in development projects, aligning with the World Bank's commitment to responsible and sustainable development. Its specific objectives include:

- To receive and resolve project related grievances in a timely, appropriate and efficient manner;
- To build trust among project staff and communities;
- To promote community empowerment and participation in project decisions that affect them;
- To provide feedback mechanisms to project affected persons on resolution of their complaints.

The World Bank, in its commitment to sustainable development on a global scale, has guidelines for Grievance Redress Mechanisms (GRMs) linked with its financed projects. These directives act as a foundational framework, guaranteeing that GRMs are structured and executed to handle the apprehensions, conflicts, and grievances of involved stakeholders. This approach advocates for transparency, equity, and responsibility in the execution of development projects.

### **7.6.3 GRM core principles**

The GRM for the proposed VIC in Budongo has been designed according to the following internationally accepted principles for the design of GRM:

#### **1. Accessibility and Inclusivity:**

This principle involves not only providing diverse channels for submitting grievances but also ensuring that these channels are well-publicized and easily navigable. Accessibility can be done through mobile applications, toll-free hotlines, community meetings, and even partnerships with local civil society organizations to assist in grievance submission. Inclusivity should extend to marginalized groups, such as women, minorities, and people with disabilities, by addressing their unique needs and providing dedicated support services.

#### **2. Transparency and Communication:**

Transparency goes beyond simply providing information; it also entails active communication. Regular updates should be shared with stakeholders about the progress of grievance resolution, ensuring that they are informed at every stage of the process. Transparency also involves publishing reports summarizing grievance trends and resolutions, which can be made available to the public. Additionally, creating user-friendly grievance submission forms and accessible contact points can facilitate effective communication.



### **3. Timely Responsiveness:**

In addition to prompt acknowledgment and initiation of resolution processes, timely responsiveness can be further emphasized through the establishment of service level agreements (SLAs). These SLAs can outline specific timeframes for different stages of grievance handling, providing clear expectations for both grievants and those responsible for resolution. The GRM should also include escalation mechanisms to address grievances that require immediate attention.

### **4. Impartiality and Fairness:**

Impartiality and fairness should be underpinned by strict codes of conduct and ethics for those involved in the GRM. Ensuring that decision-makers are well-trained and maintain neutrality is crucial. Additionally, the mechanism should incorporate third-party mediators or neutral persons to handle particularly complex or sensitive grievances, further reinforcing impartiality.

### **5. Accountability and Oversight:**

To strengthen accountability, a designated oversight body should be established, consisting of independent individuals or organizations responsible for monitoring the GRM's operations. This oversight body should have the authority to investigate cases where there are allegations of misconduct within the GRM, guaranteeing a checks-and-balances system.

### **6. Feedback Loops and Remedies:**

Creating comprehensive feedback mechanisms involves soliciting input from grievants on their satisfaction with the resolution process and their suggestions for improvement. Remedies should not only address individual grievances but also aim to rectify systemic issues. This can include revising project plans, implementing additional community development initiatives, or revisiting policies that may have contributed to grievances.

### **7. Cultural Sensitivity and Community Engagement:**

Cultural sensitivity can be further emphasized through community-driven approaches in the GRM. This might involve involving community leaders in grievance resolution processes, conducting awareness campaigns in local languages, and actively seeking input from indigenous or minority groups to tailor the GRM to their specific needs and values.

### **8. Data Management and Learning:**

Efficient data management can be leveraged for predictive analytics to anticipate potential grievances and proactively address them. It can also help identify trends, hotspots, and areas for improvement. Data should be anonymized and securely stored, and regular reports on the GRM's performance should be generated to support evidence-based decision-making.

### **9. Continuous Improvement and Adaptation:**

An integral aspect of continuous improvement is the incorporation of lessons learned into project planning and execution. Regular reviews and evaluations should not only assess the effectiveness of the GRM but also explore innovative technologies and methodologies to enhance its efficiency and reach.

#### **7.6.4 Disclosure**

The GRM recognizes that Stakeholders need to be informed about the existence of the GRM, its structures and how it operates including mechanisms for channelling grievances. Information, Education and Communication (IEC) materials shall be developed to disseminate information to various stakeholders so that they are provided with information they require on GRC mandate, objectives and operational principles for effective delivery of their functions. The GRM will be disclosed in the project area as much as possible as well as on the MWE's and World Bank websites.

#### 7.6.4.1 GRM for GBV victims and other workers

Gender-based violence, including sexual exploitation and abuse, is a prevalent global challenge and manifestations likely exist in every environment where the World Bank operates. Violence against women and children—and sometimes even against men—contributes to enduring physical and mental harm, while undercutting the ability of survivors, and often their families, to engage in meaningful and productive lives. Finding solutions to reduce and respond to GBV is a critical development imperative, with implications for the productivity, agency and well-being of individuals and communities.

Identifying and understanding the risk to women and children, as well as to other vulnerable populations, of sexual exploitation and abuse and GBV is critical yet challenging. Risk factors are myriad and cut across multiple spheres including individual, relationship, community, institutional and policy levels. Development projects, depending on their scope, can exacerbate existing risks or can create new ones. Project-related risk factors may include the size and scale of a project, the scale of labor influx, the extent to which a community has capacity to absorb labor influx or requires separate camp facilities, the inflow of income to workers which can exacerbate already existing inequities between workers and community members, and the geographic location of project activities.

The GRM structures outlined below pertain specifically to victims of Gender-Based Violence. However, in the context of the proposed project, where these victims are part of the workforce, they report incidents to contractors and supervising consultants who have established specialized procedures for handling such reports. This focused reporting approach is necessitated by the urgency of these cases, allowing for a more streamlined process and swift response, thus minimizing administrative complexities and ensuring a prompt resolution of these critical issues.

#### 7.6.5 The GRM Structures

The IFPA-CD Project GRM provides for four level structures in order to ensure grievances emanating from all stakeholders are captured and resolved. The roles and responsibilities of the GRC are presented in Table M-1 below.

- Level 1: Village level Grievance Redress Committee (VGRC): This will be the lowest unit upon which all grievances will be channelled and handled before escalating unresolved grievances to higher levels. The committee will comprise of 7 members at most.
- Level 2: The Sub County level GRC: This will be established to deal with grievances unsettled at the village level and will comprise of 7 members at maximum.
- Level 3: District level GRC: This will be established to deal with any grievances unsettled at the sub county levels. The GRC at the district will comprise of 7 members.
- Level 4: The National Level GRC shall be housed at MWE with members from MTWA, UWA, NFA and OPM and will handle all appeals not resolved at district level.

Table 7.3: Roles and responsibilities of GRCs

| GRC                  | Roles and responsibilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Village level GRC    | <ul style="list-style-type: none"> <li>- Point of contact for beneficiaries and community to file or follow up on grievances.</li> <li>- Sensitize community on rights and responsibilities and channels for registering complaints.</li> <li>- Follow up on complaints registered in the complaints boxes directing as appropriate Log complaints received appropriately.</li> <li>- Compile all complaints registered and forward to Kihungya Sub - County for review and solving for those that might have not been resolved at community level.</li> </ul> |
| Sub county level GRC | <ul style="list-style-type: none"> <li>- Sensitize Akiimi B GRCs and community members on rights and responsibilities and channels for registering complaints.</li> <li>- Follow up on complaints directed to the Sub County and see that they are resolved.</li> </ul>                                                                                                                                                                                                                                                                                        |

| GRC                | Roles and responsibilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <ul style="list-style-type: none"> <li>- Ensure complaints registered are properly logged and received appropriately.</li> <li>- Ensure documentation specifically the log book, registers, forms etc. are properly filed and stored.</li> <li>- Forward unresolved complaints which may require district level solving.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| District Level GRC | <ul style="list-style-type: none"> <li>- Sensitize Kihungya Sub - County GRC on rights and responsibilities and channels for registering a complaint.</li> <li>- Follow up on complaints that have been directed to the district level and see that they are resolved.</li> <li>- Conduct quarterly review meetings on Kihungya Sub - County GRC reports.</li> <li>- Forward unresolved complaints which may require higher level solving to national level GRC</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| National Level GRC | <ul style="list-style-type: none"> <li>- Ensure grievance redress processes are developed and functional.</li> <li>- Sensitize GRCs at all levels on their roles and responsibilities</li> <li>- Ensure complaints registers are up to date</li> <li>- Follow up on complaints that have been directed to the national level.</li> <li>- Monitor implementation of resolutions made by GRCs at all levels.</li> <li>- Share best practices and general guidance to the IFPA-CD project.</li> <li>- Conduct sensitization and awareness outreach to relevant stakeholders.</li> <li>- Maintain all records of grievances and redress.</li> <li>- Analyze common grievances, lessons learning to inform effective program implementation and mitigation measures in future</li> </ul>                                                                                                                                                                                   |
| The World Bank     | <p>The GRS is the World Bank's easy way to provide PAPs and communities an avenue to bring their complaints directly to the attention of Bank Management. The Project-level GRM will remain the primary tool to raise and address grievances in Bank-supported operations except issues that cannot be resolved at the Project level. The GRS facilitates corporate review and resolution of grievances by screening and registering complaints and referring them to the responsible Task Teams/Managers.</p> <p><b>World Bank Grievance Redress Contacts</b><br/> email: <a href="mailto:grievances@worldbank.org">grievances@worldbank.org</a>;<br/> By fax: +12026147313<br/> By mail: The World Bank, Grievance Redress Service,<br/> MSN MC 10-1018, 1818 H St NW, Washington,<br/> DC 20433, USA and/or<br/> Through the World Bank Uganda Country Office in Kampala – Rwenzori House, 1 Lumumba Avenue, P.O. Box 4463, Kampala (U); Tel: +256 414 3022 00</p> |

#### 7.6.5.1 Grievance Resolution Hierarchy and Management Dynamics

While the Project aims to resolve the majority of individual, group, and community grievances by direct resolution at individual or group levels, a hierarchical grievance resolution mechanism should be developed as follows:

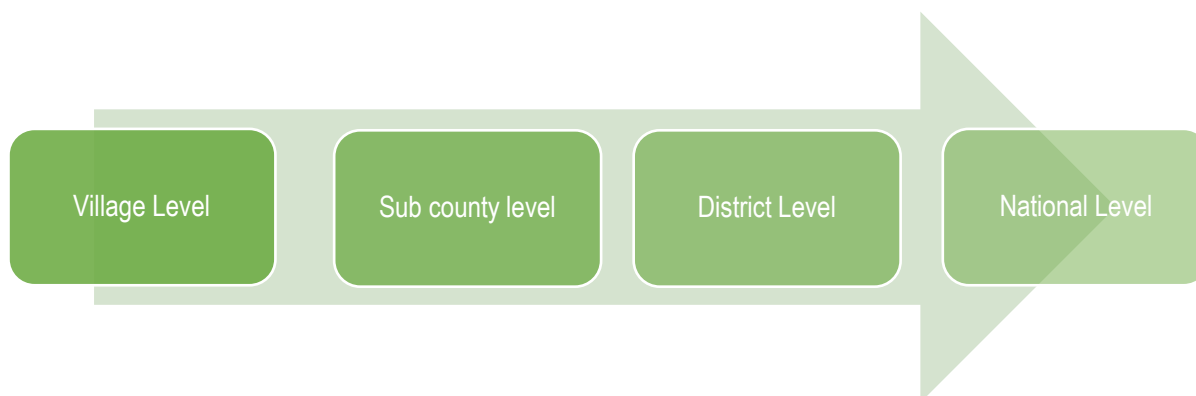


Figure 7:1 Grievance resolution hierarchy

#### 7.6.5.2 The GRM Process

The GRM process will involve the following steps:

1. Receiving, Acknowledging and Recording Grievances: All grievances shall be received, acknowledged and recorded at village level.
2. Sorting and categorization: Acknowledgement of grievances received will be followed by sorting and categorizing it for appropriate action. The analysis and categorization will be based on a set criterion.
3. Verification and resolution: Verification of the grievances logged at village level will be done by the GRC to establish whether it is genuine or not and to ascertain its authenticity. The merit of grievances should be judged objectively against GRM principles.
4. Giving feedback: Feedback refers to the process of informing the complainant, all GRM users and the public at large about the result of the grievances investigated and resolved as well as the actions taken. Once a grievance has been resolved, the GRC will provide feedback to the complainant.
5. Safe handling of grievance records: The grievance forms and the grievance log register shall be kept in a safe place that is only accessible by the secretary to the GRC. The grievance records shall be archived at the end of the project and be subjected to the government data disposal guidelines.
6. Anonymous grievances: A grievance received anonymously needs to be assessed to identify whether it is substantial or not and if found substantial, actions shall be taken to resolve it. This may involve holding meetings with community members to disclose the resolution of the GRC.
7. Right to Appeal: A complainant who is not satisfied with the response received despite having had the opportunity to request for further clarification or feedback, he/she has the right to make formal communication to the Social Risk Management Specialist.

#### 7.6.5.3 Grievance Prevention

Grievance prevention is key and shall form part of the GRM implementation. The following measures shall be put in place to prevent grievances from occurring;

1. Identify risk areas that are likely to cause grievances and possible mitigation measures.
2. Provide sufficient and timely information to the community and other stakeholders. Many complaints arise as a result of lack of information or insufficient information. Therefore, providing accurate and adequate information about the project and its activities and implementation schedule shall be done regularly. Avenues for information dissemination shall be in form of radio talk shows, Information and Education Materials, and trainings.
3. Conduct meaningful community and stakeholder engagements. Throughout the project implementation, the project shall continue sharing information, progress reports, providing opportunity to community members to raise their concerns,

responding to their issues in a timely manner, as well as receiving feedback on interventions.

4. Build capacity for the project staff. The project staff shall be equipped with information about the project such as project design, project activity implementation schedules, and institutional arrangements. They shall also have basic skills like effective communication, community dynamics, negotiation and conflict resolution. Building trust and maintaining good rapport by providing information on the project and responding to community needs will help solve issues before they become grievances.

#### **7.6.5.4 Grievance Logging.**

Local communication channels should be made for logging complaints, which can verbally or in writing by project-affected individuals, groups, institutions, or third parties. The complainants will contact GRC members, preferably the secretary, via phone or in person. Within 48 hours, the complaint will be registered with any supporting information. The GRC will convene a meeting to address received grievances within 7 days. If a grievance falls within the GRC's mandate, it will be resolved; otherwise, it will be referred to the appropriate institution. The village-level GRC will provide feedback on the resolution to the complainant. In cases of referrals, the GRC's role is minimal, mainly directing the complainant to the respective institution. All complaints, regardless of their origin, will be recorded in the grievance register and Complaints Logbook by the GRC

The Grievance Log contains a record of the person responsible for an individual complaint, and records dates for the following events:

- Date grievance was reported;
- Date Grievance Log updated;
- Date proposed corrective action sent to complainant;
- Date grievance was followed up and closed out;
- Date close-out information was sent to complainant.

The proposed Grievance Management Form (Log and Action Form) is presented in Appendix M.

#### **7.6.5.5 Track, document, evaluate and report results.**

The GRCs have a responsibility of tracking and monitoring the process of grievance redress and the implementation of the decisions made. They also have a duty to give regular feedback to the complainants about the grievance redress process. Evaluation procedures will also be put in place to assess the overall effectiveness of GRMs.

#### **7.6.5.6 Timelines for grievance handling**

Prompt handling of complaints is encouraged as they are received, and or addressed and records shall be kept. Where possible, complaints shall be handled instantly especially in cases where complaints are logged in through walk-ins and the toll-free option. However, in cases where complaints have been logged through written format i.e. suggestion boxes or complaint logs, periodic analyses shall be undertaken and the corresponding timelines are elaborated below.

- The village GRC will interrogate the complainant in the language conversant by the complainant and complete a Grievance Registration Form which will be signed by the chairperson of the GRC and the complainant. This will then be logged in the grievance log/register provided. The complainant shall expect a response from the GRC within seven (7) days of filing the complaint. If the issue is not resolved, the GRC will forward the complaint to the GRC at the Sub- County;
- The GRC at the Sub- County will be given a fourteen (14) day notice to hold a meeting. Two days after the meeting, the sub-county GRC may call the complainant and village GRC for discussions and resolution. The resolution will be presented to the complainant in written form within the same day of the meeting. If there is no resolution



to the grievance, the GRC at the Sub County shall then refer the matter to the GRC at the District

- The GRC at the District will be given a fourteen (14) day notice to hold a meeting. Two days after the meeting, the GRC will call the complainant and Sub County GRC for discussions and resolution. The resolution will be presented to the complainant in written form within the same day of the meeting;
- If there is no resolution to the grievance, the GRC at the district shall then refer the matter to the National level GRC

#### **7.6.5.7 Referral system.**

The Ugandan laws allow any aggrieved person the right to access justice through systematic administrative and judicial system. If the complainant remains dissatisfied with any of the structured levels of the grievance mechanism, he or she has a right of appeal to any legal authority.

In case of any referrals, the committee will receive a complaint, record it and provide written referrals within fourteen (14) days to the next level of structure. Copies of these referrals shall be kept in record file. Effort shall be made to follow-up on how the resolution of the project related complaints referred are being handled.

#### **7.6.5.8 Monitoring and reporting in GRM**

Grievances shall be captured for monitoring and reporting using the Grievance Registration Form, logbooks and reporting templates. The Grievance Registration Form shall be filled for each grievance case relevant to the construction and operation of the VIC by GRM parties at District, Sub-County and village level where the grievance was logged.

Buliisa District Focal Persons will coordinate GRM activities with members of GRC at district, Sub- County, and village levels on a weekly basis to update GRC's database.

The District Focal Person (DFP) will coordinate the monitoring process. The DFPs will provide monthly reports on the status of handling and management of grievances within their respective districts. The respective reports will reflect a consolidated picture of the status of grievance handling at the district.

## **8.0 ANALYSIS OF POTENTIAL IMPACTS**

### **8.1 Introduction**

The purpose of this section is to identify the major environmental and social issues of concern and indicate their relative importance to the design of the project and the intended activities. The main objective is to determine whether any environmental considerations need to be considered in reviewing the application for the environmental permit and whether there is any environmental reason why the project should not proceed as proposed. Assessment of impacts depends on the nature and magnitude of the activity being undertaken and also on the type of pollution control measures that are envisaged as part of the project proposal. As indicated, the proposed project is the establishment of a functional Visitor Information Centre in Budongo CFR to boost tourism (both local and foreign) by enhancing the visitor experience and disseminating well-curated information on the available tourism products. The potential impacts of the proposed project are identified and assessed based on the nature and magnitude of the various activities associated with the different stages of establishment of the VIC (i.e., construction, operation and decommissioning). It also identifies alternative approaches and/or mitigation measures that need to be implemented to address the negative impacts and actions to enhance the potential benefits.

The section is further intended to among others:

- Identify the major environmental and social issues of concern; and
- Indicate their relative importance to the design of the project and the intended activities, taking full consideration of the effectiveness and acceptability of any proposed mitigation measures in the protected area context.

For the environmental aspects likely to be impacted by this development, a description of the main impacts and the proposed mitigation measures have been described for both the natural and the socio-economic environment. A detailed assessment of the impact of the VIC during the periods of construction, operation and closure is given. Measures have been proposed to minimize negative impacts and to prevent any risk to the population in the area and workers on the site.

### **8.1 Methodology for Impact Assessment**

#### **8.1.1 Methods and Materials used for Identifying Project Impacts**

Both positive and negative impacts were identified using the following methods:

- Stakeholder consultation
- Review of the risks arising from the project and the range of environmental consequences that could arise under upset conditions.
- Review of the possible impact-causing aspects of the project.
- Review of impact assessments done for similar projects, particularly those in this area.
- Technical inputs (professional judgement) from environmental specialists on the EIA team.
- Regulatory criteria governing aspects of the environment likely to be impacted.
- The sensitivity of valued environmental components (VECs) that are likely to be impacted.

#### **8.1.2 Cumulative Impacts**

Cumulative impacts and reversibility were also identified and assessed. Cumulative adverse impacts are defined as adverse environmental impacts that arise from several activities impacting the same environmental receptor. The causes of these impacts may be from various project activities or partly from project-related activities (internal aggregations) and pre-existing conditions (external factors). External activities form part of the baseline conditions and are considered in the examination of the existing conditions as well as a divergence from the baseline that might be expected to arise from project implementation. In this way, the

impact of the project on the surrounding area especially as it relates to the cumulative impacts of this project with any existing developments was included.

Expected impacts were determined based on anticipated interactions between project activities and major environmental and social sensitivities. A checklist of likely environmental and social impacts is given in table 8.1.

Table 8.1: Checklist of project's potential impacts

| No         | Environmental/ Social Aspect                                                                           | Construction | Operation         | Decommissioning |
|------------|--------------------------------------------------------------------------------------------------------|--------------|-------------------|-----------------|
| 1.         | The potential for tourism development in forest reserves                                               |              | ✓                 |                 |
| 2.         | Economic gains                                                                                         | ✓            | ✓                 | ✓               |
| 3.         | Benefit sharing through community livelihood support (through CFM) and corporate social responsibility |              | ✓                 |                 |
| 4.         | Loss of habitat                                                                                        | ✓            | ✓                 | ✓               |
| 5.         | Introduction of invasive species                                                                       | ✓            | ✓                 | ✓               |
| 6.         | Impact of waste on ecology                                                                             | ✓            | ✓                 | ✓               |
| 7.         | Impact of noise on ecology                                                                             | ✓            | ✓                 | ✓               |
| 8.         | Spread of diseases                                                                                     | ✓            | ✓                 | ✓               |
| 9.         | Physical hazards                                                                                       | ✓            | ✓                 | ✓               |
| 10.        | Ergonomic hazards                                                                                      | ✓            | ✓                 | ✓               |
| 11.        | Security risks                                                                                         | ✓            | ✓                 | ✓               |
| 12.        | Fire risks                                                                                             | ✓            | ✓                 | ✓               |
| 13.        | Chemical hazards                                                                                       | ✓            |                   |                 |
| 14.        | Vibration                                                                                              | ✓            |                   |                 |
| 15.        | Air pollution                                                                                          | ✓            | ✓                 | ✓               |
| 16.        | Water pollution                                                                                        | ✓            | ✓                 | ✓               |
| 17.        | Climate change                                                                                         | ✓            | ✓                 | ✓               |
| 18.        | Oil and fuel spills                                                                                    | ✓            | ✓                 | ✓               |
| 19.        | Solid waste generation                                                                                 | ✓            | ✓                 | ✓               |
| 20.        | Loss of Vegetation                                                                                     | ✓            | ✓                 | ✓               |
| 21.        | Water conservation                                                                                     | ✓            | ✓                 |                 |
| 22.        | Energy conservation                                                                                    | ✓            | ✓                 | ✓               |
| 23.        | Development and enhancement of cultural tourism                                                        |              | ✓                 |                 |
| 24.        | Preservation of cultural heritage and artefacts                                                        |              | ✓                 |                 |
| 25.        | Disruption to social cohesion and loss of cultural identity                                            | ✓            | ✓                 | ✓               |
| <b>KEY</b> |                                                                                                        |              |                   |                 |
|            |                                                                                                        | ✓            | Denotes an Impact |                 |

Appropriate mitigation measures were then designed to avoid, minimize or compensate for the adverse environmental and social impacts and inform the Environment and Social Management Plans. After the rating of each impact, the determination of mitigation measures followed (*refer to chapter 9 on ESMP*). Only moderate and major impacts were considered for impact mitigation. Continuous improvement practices will address low impacts. The positive impacts shall be monitored and enhanced when expedient.

## 8.2 Impacts from the construction phase

### 8.2.1 Economic spill over

As part of the construction phase, the contractors are expected to mobilize machinery and a workforce, establish a campsite and commence excavation and construction works. This will create an increase in demand for goods and services such as food, accommodation, medical services and hospitality among others in the neighbouring community. This will in turn lead to increased earnings from local businesses and encourage the establishment of new ones to meet the increase in demand.

**Duration:** This impact is expected to be immediate throughout the construction phase

**Extent:** The economic spill over will mainly be restricted to the local area

**Magnitude:** This impact is expected to be moderate

**Probability:** The probability that there will be an economic spill over within the local area is high

**Potential Significance:** The significance of the impact is expected to be moderate

| Nature: Economic spill over                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Without enhancement | With enhancement |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Local (2)           | Local (2)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Immediate (1)       | Immediate (1)    |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Moderate (6)        | High (8)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | High (4)            | High (4)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Moderate (36)       | Moderate (44)    |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Positive            | Positive         |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Irreversible        | Irreversible     |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | No                  | No               |
| <b>Can impacts be enhanced?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                 |                  |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>Engaging reliable local businesses on a contractual basis such as restaurants to provide catering services and health centres to provide medical services among others will enhance the gains these businesses can make and also guarantee quality in services provided to staff.</li> <li>Educating and reiterating to staff members and construction crews on discipline and acceptable social etiquette when interfacing with local businesses to avoid instances of theft, defaulting on credit advanced among other social vices</li> </ol> |                     |                  |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |                  |
| <b>Residual impacts:</b> The large number of workers required will provide a ready market for various commodities, leading to several business opportunities for small-scale traders. Ultimately, the area may realise the development of Small and Medium Enterprises (SMEs) within Busingiro, Akiimi B and Udukuru.                                                                                                                                                                                                                                                                                       |                     |                  |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.2 Technological transfer

The project is expected to utilize modern methods in the design and construction of the proposed VIC incorporating bioclimatic architectural elements such as enhanced natural ventilation and passive cooling. The structures shall also utilize prefabricated parts and employ construction materials that showcase the unique architectural identity of the local area. This is different from the conventional construction methods of undertaking all joinery and roofing work on site and relying solely on the widely accepted construction materials such as bricks.

The final structure shall conform to and surpass the regulatory requirements and standards. This exposure will broaden the experience, expertise and perspective of the construction workers on excavation techniques, occupational health and safety, environmental management and project implementation. The newly gained ideas and skills may then be used by the workforce on future projects in the country.

**Duration:** This impact is expected to be medium term

**Extent:** The extent will be national as ideas and skills gained are implemented on other projects countrywide

**Magnitude:** The impact is expected to be low but can be enhanced to

**Probability:** This probability of this occurring is high

**Potential Significance:** This impact will be moderately significant with the potential to be enhanced

| Nature: Technological transfer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Without enhancement | With enhancement |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | National (5)        | National (5)     |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Medium-term (3)     | Medium-term (3)  |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Low (4)             | Moderate (6)     |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | High (4)            | High (4)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Moderate (48)       | Moderate (56)    |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Positive            | Positive         |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Irreversible        | Irreversible     |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No                  | No               |
| <b>Can impacts be enhanced?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                 |                  |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. Establishing training and capacity-building programs for professional and semi-skilled workers to learn and broaden their skill sets with techniques, machinery and protocols at the site</li> <li>2. Documenting the establishment of the VIC right from the inception stage by way of reports, documentaries and any other such form that can be made publicly available to scholars, and enthusiasts in architecture, design or construction.</li> </ol> |                     |                  |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                  |
| <b>Residual impacts:</b> <ol style="list-style-type: none"> <li>1. Skills gained by the construction crew and other professionals will be used to improve the quality of work they do in the future leading to enhanced earnings and customer satisfaction</li> <li>2. Future projects of a similar nature and scale may benchmark against the VIC to pick up valuable lessons in environmental management, occupational health and safety, project planning and stakeholder engagement</li> </ol>                        |                     |                  |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.3 Introduction of invasive species

Through landscaping, increased movement and other human-facilitated introductions, species may be introduced at the VIC sites that could eventually become overpopulated and alter the ecology or landscape of the project area. Native species may also become invasive species as a result of disruptions to existing food webs for example the decline in the number of predators leading to a spike in the population of prey (usually herbivore) species.

**Duration:** This impact will be immediate

**Extent:** The extent will be local but can be restricted to the site

**Magnitude:** The magnitude of this impact is very high considering the broadness of the ecological impact of invasive species

**Probability:** The probability of occurrence is low

**Potential Significance:** The significance of this impact is moderate but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Introduction of invasive species |                    |                 |
|------------------------------------------|--------------------|-----------------|
|                                          | Without mitigation | With mitigation |
| <b>Extent</b>                            | Local (2)          | Site (1)        |
| <b>Duration</b>                          | Immediate (1)      | Immediate (1)   |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Very high (10) | Low (4)      |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Medium (3)     | Low (2)      |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Moderate (39)  | Low (12)     |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Negative       | Negative     |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Irreversible   | Irreversible |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes            | Yes          |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes            |              |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All vehicles should be thoroughly cleaned before accessing the site.</li> <li>2. Manual control of invasive species shall be implemented at the site.</li> <li>3. Establish a monitoring and information system for invasive species to support planning and management.</li> <li>4. Landscaping and establishment of the arboretum shall use indigenous species</li> <li>5. The proponent shall enhance ongoing programs to combat invasive species within the CFR</li> </ol> |                |              |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |              |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |              |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

#### 8.2.4 Impact of particulate, fugitive and vehicular exhaust emissions

The movement of vehicles and other non-road mobile machinery (NRMM) and excavation works are expected to generate dust emissions at the site. However, hauling off and disposal of excavation spoil and debris will generate fugitive emissions along the roads and at the disposal site. The emissions associated with the construction phase that causes the greatest concern are particulate matter (PM10).

Dust emissions can have devastating impacts from affecting respiratory health to climate change. Particulate matter, depending on the fineness or coarseness can aggravate the eyes, skin, and lungs. When dust enters the respiratory system, its abrasive action can irritate the lining of the bronchi and lungs. Particulates that have adsorbed toxic compounds have the potential of introducing said compounds into the body when they are inhaled. Personnel with heart or lung diseases like coronary artery disease, congestive heart failure, and asthma or chronic obstructive pulmonary disease (COPD) face a greater risk because fine particles can aggravate these conditions. Older persons too are more likely to be hospitalized and die from exposure to excessive particles. Short-term exposure has also been known to cause acute bronchitis, arrhythmias, heart attacks, asthma attacks and increased susceptibility to respiratory infections (Bureau of Air Quality, 2010).

Duration: The impact is expected to be immediate

Extent: The impact will mainly be restricted to the construction site

Magnitude: The magnitude of this impact is expected to be high

Probability: The probability of occurrence for this impact is definite if mitigation measures are not put in place

Potential Significance: The significance of this impact is expected to be moderate

| Nature: Impact of particulate, fugitive and vehicular exhaust emissions |                    |                 |
|-------------------------------------------------------------------------|--------------------|-----------------|
|                                                                         | Without mitigation | With mitigation |
| <b>Extent</b>                                                           | Local (2)          | Site (1)        |
| <b>Duration</b>                                                         | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                        | High (8)           | Low (4)         |
| <b>Probability</b>                                                      | Definite (5)       | Medium (3)      |
| <b>Significance*</b>                                                    | Moderate (55)      | Low (18)        |
| <b>Status (positive or negative)</b>                                    | Negative           | Negative        |
| <b>Reversibility</b>                                                    | Reversible         | Reversible      |
| <b>Irreplaceable loss of resources?</b>                                 | Yes                | No              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Scheduling construction activities for periods when wind speeds are low</li> <li>2. Employing dust suppression techniques like water sprinkling at the site</li> <li>3. Fencing the site to reduce wind-induced re-entrainment of dust particles</li> <li>4. Covering trucks hauling debris and excavation spoil to curtail dust emissions during transportation</li> <li>5. Selecting an appropriate disposal site such as to limit the distance travelled and disruption to the receptor communities</li> </ol> |     |
| <b>Cumulative impacts:</b> The impact on air quality of the immediate project's area of influence may be exacerbated by other activities in the area like the ongoing construction of the Biso - Masindi Road                                                                                                                                                                                                                                                                                                                                                                  |     |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

## 8.2.5 Occupational Health and Safety risks

Construction workers and supervisors at the site will face several hazards that pose risks to life and property. The hazard expected at the site may be categorized as:

- **Safety hazards**

These are anticipated to be the most common hazards during the construction phase. Safety hazards are unsafe conditions that can cause illness, injury or death. They include working from roofs, on ladders and other elevated areas; unguarded machinery and moving parts that can come into contact with the worker; electrical hazards from bare wires, and improper wiring; confined spaces; hazards associated with the use of machinery for example forklifts.

- **Ergonomic hazards**

These are hazards that occur when the nature of work, body positions and working conditions put a strain on the body. These include frequent lifting of heavy items; poor posture; incorrectly adjusted workstations and chairs; awkward and repetitive movement; vibration; temperature; frequent use of excessive force. Exposure to ergonomic hazards can cause musculoskeletal disorders (MSDs) which are cumulative and chronic injuries to the muscles, tendons, ligaments, nerves, joints and blood vessels.

Vibrations, particularly Hand-arm vibration (HAV) and Whole-body vibration (WBV), are ergonomic hazards of great concern. Depending on the length of time and magnitude of exposure, HAV can lead to Hand-Arm Vibration Syndrome (HAVS) and Carpal Tunnel Syndrome (CTS). WBV has been known to aggravate back injuries and increased health risks to the nervous system, particularly the spine.

Heavy lifting is also another ergonomic hazard anticipated to be prevalent at the site during the construction phase. Repetitive heavy lifting has been associated with spinal injuries such as herniated discs and fatal Spontaneous Coronary Artery Dissection (SCAD) in extreme cases.

- **Chemical hazards**

Workers at the site will also be exposed to chemical hazards in various forms i.e., solid, liquid and gaseous forms. A hazardous chemical is any substance that can be classified as a physical hazard, health hazard, asphyxiant, combustible dust, pyrophoric gas or any other hazard. Chemicals such as explosives, flammables, oxidizers, organic peroxides and gases under pressure can pose physical hazards. Other substances on-site may also pose hazardous effects such as acute toxicity, skin and eye irritation, carcinogenicity, reproductive toxicity, germ cell mutagenicity and specific target organ toxicity.

- **Physical hazards**

Physical hazards are simply any environmental factors that can harm the body without touching or necessarily making contact. These include noise, high exposure to sunlight/UV rays, extreme temperature conditions and radiation among others.

Noise, from NRMM, vehicular movement, demolition works and human activity at the site is anticipated to pose the greatest hazard to the health and well-being of workers on-site and the community at large. Exposure to excessive noise without protection can result in temporary to permanent Noise-Induced Hearing Loss (NIHL). It can also become a nuisance for staff and visitors alike. Long-term exposure to excessive noise levels has been identified as an important risk factor for coronary heart disease (Hoffman, et al., 2006). Noise pollution has also been associated with sleep disturbance, stress, fatigue, hysteria and depression in both humans and animals (Thomas Münzel, et al., 2018).

- **Biological hazards**

Biological hazards are organisms or substances they produce, that pose a threat to human health. These include pathogens, fungi, poisonous plants, venomous snakes and insects. Biological hazards may affect the body by way of infection, intoxication, allergic reactions and death. The common routes of ingestion, inhalation and dermal contact.

Improper sanitation at the campsite characterised by inadequate sanitary facilities, absence of clean water, and poor personal hygiene are all factors that can foster the spread of pathogens and diarrheal diseases. Considering the site is within a central forest reserve, a natural habitat for venomous animal species, the workers face a risk of being bitten by venomous snakes or insects. Without immediate intervention, a venomous snake bite can have fatal consequences.

- **Psychological hazards**

Lack of inclusivity, discrimination, harsh working conditions, unfavourable shifts, low wages and substance abuse among other mental health stressors increases risks to one's psychological well-being. Anxiety, depression and stress can have negative impacts on one's health.

There are compositional and contextual drivers that place construction workers at great risk of suffering mental health issues. Considering compositional factors such as age, gender and socioeconomic position, construction workers are at a high risk. Construction workers in Uganda are largely young men with a low socioeconomic position making them less likely to speak up when they are distressed and at great risk to suffer from stress and depression.

There are several contextual drivers for poor mental health attributed to the nature of construction work in the country such as informal work arrangements, gaps in social protection, absence of job security, high mobility, limited job control and regular periods of underemployment and unemployment. These characteristics are all strong predictors of poor mental health (King & Lamontagne, 2021). Furthermore, construction sites are highly masculine environments that foster dangerous dominant masculine norms which are known risk factors for poor mental health such as not seeking help (Tania L. King, 2020).

Duration: This impact will be immediate during the construction phase

Extent: The impact will be restricted mainly to the sites where site preparation activities are taking place

Magnitude: The magnitude of the Occupational Health and Safety risks is very high considering the consequences can be fatal

Probability: Occupational Health and Safety risks are inherent parts of construction work and their probability of occurrence is definite

**Potential Significance:** The significance of this impact is high but can be reduced to moderate with the implementation of the proposed mitigation measures

| <b>Nature: Occupational Health and Safety risks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                           |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Without mitigation</b> | <b>With mitigation</b> |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Site (1)                  | Site (1)               |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Immediate (1)             | Immediate (1)          |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Very high (10)            | Moderate (6)           |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Definite (5)              | Definite (5)           |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | High (60)                 | Moderate (40)          |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Negative                  | Negative               |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Irreversible              | Irreversible           |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes                       | Yes                    |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                       |                        |
| <b>Mitigation:</b> <ul style="list-style-type: none"> <li>(i) All excavation work and lifting shall be supervised by a competent person and operatives doing the work shall be given clear instructions;</li> <li>(ii) Sides of excavations shall be thoroughly inspected: <ul style="list-style-type: none"> <li>- daily, before each shift and after an interruption in work of more than one day;</li> <li>- after an unexpected fall to the ground;</li> <li>- after substantial damage to supports;</li> <li>- after heavy rain;</li> <li>- when boulder formations are encountered.</li> </ul> </li> <li>(iii) Sides of excavations where workers are exposed to danger from moving ground shall be made safe by sloping, shoring, portable shields or other effective means;</li> <li>(iv) A suitable housekeeping programme shall be established and continuously implemented at the site and it shall include provisions for: <ul style="list-style-type: none"> <li>- the proper storage of materials and equipment;</li> <li>- the removal of scrap, waste and debris at appropriate intervals</li> </ul> </li> <li>(v) Loose materials which are not required for use shall not be placed or allowed to accumulate on the site to obstruct means of access to and egress from workspaces and passageways.</li> <li>(vi) Where necessary to prevent danger, guys, stays or supports shall be used or other effective precautions shall be taken to prevent the collapse of structures or parts of structures that are under construction</li> <li>(vii) As far as practicable, guardrails and toe boards in accordance with national laws and regulations shall be provided to protect workers from falling from elevated workspaces. Wherever the guard rails and toe-boards cannot be provided: <ul style="list-style-type: none"> <li>- adequate safety nets or safety sheets shall be erected and maintained, or</li> <li>- adequate safety harnesses shall be provided and used.</li> </ul> </li> <li>(viii) The site shall be hoarded off to prevent the entry of unauthorised persons. Visitors shall not be allowed access to the construction site unless accompanied by or authorised by a competent person and provided with the appropriate protective equipment.</li> <li>(ix) All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> <li>- avoid the risk of fire;</li> <li>- quickly and efficiently control any outbreak of fire;</li> <li>- bring about a quick and safe evacuation of persons</li> </ul> </li> <li>(x) Smoking shall be prohibited and "NO SMOKING" notices shall be prominently displayed in all appropriate locations within the subject site. Additionally, smoking zones shall be gazetted for those who intend to smoke.</li> <li>(xi) Provision of appropriate PPE to all workers.</li> <li>(xii) All contractors must adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</li> </ul> |                           |                        |
| <b>Cumulative impacts:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |                        |
| <b>Residual impacts:</b> Loss of lives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |                        |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.6 Solid waste generation

During the construction phase, the expected major solid waste streams will include plastics, wood, packaging, domestic waste, sanitary waste, and hazardous waste. Each waste type generated at the site shall be handled considering the specific risks it poses to public health and the environment. Improper management of solid waste attracts vermin and vectors and fosters the spread of diseases at the site and the community at large. Poorly handled sanitary waste and lack of clean water can promote the spread of diarrheal diseases such as cholera and dysentery in the campsites. Waste piles are unsightly and generate foul odours which are a nuisance to the public; legal action can be taken against the proponent for failure to manage the collection and disposal of waste generated onsite.

Furthermore, poorly discarded solid waste materials, particularly packaging for food, may create a choking hazard in wild animals and foster the spread of zoonotic diseases. Feeding from poorly disposed waste may increase animal presence at the VIC exacerbating the risks of human-wildlife interaction such as aggressive behaviour and road kills among others.

Duration: This impact will be immediate during the construction phase

Extent: The impact will occur locally but can be restricted to the site

Magnitude: The magnitude of this impact will be high

Probability: There is a high probability that this impact will occur

Potential Significance: This impact will be moderate with the potential to be reduced to low

| Nature: Solid waste generation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | High (8)           | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | High (4)           | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Moderate (44)      | Low (12)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Reversible         | Reversible      |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                | No              |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements</li> <li>2. Recycle construction materials from the existing structures where possible</li> <li>3. Establish adequate gender-segregated sanitary facilities for all workers and visitors to the site</li> <li>4. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site</li> <li>5. Hire a licensed hazardous waste handler to remove and dispose of hazardous waste materials</li> <li>6. Train construction workers on proper waste management practices</li> <li>7. Cover trucks ferrying debris from the site to mitigate spillages during transportation</li> <li>8. Site stockpiles of debris away from stormwater paths</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |
| <b>Residual impacts:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.7 Climate change impacts

Construction activities, machinery and equipment produce GHG emissions, including methane, nitrous oxide, and carbon dioxide from different stages. The emission of carbon dioxide and other greenhouse gases to the environment is considered a primary factor in causing global warming and thus climate change. Other Greenhouse Gas emissions expected



from the VICs will include Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>) and Carbon Monoxide (CO).

These emissions also pose climate change risks either through accelerating global warming or facilitating the formation of smog and acid rain. For example, soot or black carbon, a by-product of incomplete combustion has a 20-year Global Warming Potential (GWP) of 4,470, and a 100-year GWP of 1,055–2,240 while Fossil fuel soot, as a result of mixing with cooling aerosols and particulate matter, has a lower 20-year GWP of 2,530, and a 100-year GWP of 840–1,280.

SO<sub>x</sub> and NO<sub>x</sub> undergo atmospheric oxidation and hydrolysis to form acidic precipitation which has devastating effects on terrestrial flora and fauna. Acid rain alters the pH in the biosphere on which it falls generally making the conditions more acidic and less ideal for certain key ecological functions such as crop germination, breeding and feeding from occurring; disrupting food webs and breeding habits.

Duration: This is an immediate impact during the construction phase

Extent: The extent of this impact is local but can be restricted to the site

Magnitude: The magnitude of this impact is high

Probability: The probability of this occurring is high

Potential Significance: The significance of this impact is moderate but can be reduced to low with the implementation of the proposed mitigation measures

| Nature: Climate change impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Local (2)          | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Immediate (1)      | Immediate (1)   |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | High (8)           | Low (4)         |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | High (4)           | Medium (3)      |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Moderate (44)      | Low (18)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                | Yes             |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                 |                 |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>2. Open incineration of waste at the site shall be strictly prohibited</li> <li>3. All plastic waste generated at the site shall be collected in such a manner as to allow it to be recycled</li> <li>4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.8 Visual impacts

Clearing vegetation and excavation works will deteriorate the visual appeal of the site. The loss of trees and other plant species cannot be undone until the landscaping is done. Deposition of eroded material, spillage of debris and excavation spoil around the project site will degrade the visual appeal of the site. Potential receptors include the tourists, NFA staff and other personnel within the project area.

Duration: This impact will be immediate during the construction phase

Extent: The impact will be restricted to the site

**Magnitude:** This impact is expected to be moderate

**Probability:** This probability of this impact occurring is definite

**Potential Significance:** This impact will be moderate with the potential to be reduced to low

| Nature: Visual impacts                                                                                                                                                                                                                                                                |                    |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                       | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                | Site (1)           | Site (1)        |
| Duration                                                                                                                                                                                                                                                                              | Immediate (1)      | Immediate (1)   |
| Magnitude                                                                                                                                                                                                                                                                             | Moderate (6)       | Low (4)         |
| Probability                                                                                                                                                                                                                                                                           | Definite (5)       | Definite (5)    |
| Significance*                                                                                                                                                                                                                                                                         | Moderate (40)      | Low (30)        |
| Status (positive or negative)                                                                                                                                                                                                                                                         | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                         | Reversible         | Reversible      |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                      | No                 | No              |
| Can impacts be mitigated?                                                                                                                                                                                                                                                             | Yes                |                 |
| Mitigation:                                                                                                                                                                                                                                                                           |                    |                 |
| 1. Completely fence off the site during the site preparation phase<br>2. Start landscaping and replanting ornamental trees as soon as it is reasonable to restore the visual appeal of the site<br>3. Schedule excavation works for January to March when the visitor numbers are low |                    |                 |
| Cumulative impacts: The visual impacts will be exacerbated by the ongoing construction works of the Biso – Masindi Road                                                                                                                                                               |                    |                 |
| Residual impacts: None                                                                                                                                                                                                                                                                |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

## 8.2.9 Impacts on water resources

Potential water pollution risks may result from spillage of oil, adhesives, chemicals etc.; improper waste disposal of construction materials; inadequate sanitation facilities onsite; wastewater from the construction activities; waste oil from maintenance and servicing activities. These may end up in surface water resources by erosion or groundwater reserves through seepage.

**Duration:** This impact will be immediate

**Extent:** The impact will be restricted to the local area

**Magnitude:** This impact will be moderate

**Probability:** There is a low probability this will occur during the site preparation phase

**Potential Significance:** This impact will be moderate with the potential to be reduced to low

| Nature: Impacts on water resources                                                                                                                                                                                          |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                             | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                      | Local (2)          | Local (2)       |
| Duration                                                                                                                                                                                                                    | Immediate (1)      | Immediate (1)   |
| Magnitude                                                                                                                                                                                                                   | High (8)           | Minor (2)       |
| Probability                                                                                                                                                                                                                 | Medium (3)         | Low (2)         |
| Significance*                                                                                                                                                                                                               | Moderate (33)      | Low (10)        |
| Status (positive or negative)                                                                                                                                                                                               | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                               | Reversible         | Reversible      |
| Irreplaceable loss of resources?                                                                                                                                                                                            | No                 | No              |
| Can impacts be mitigated?                                                                                                                                                                                                   | Yes                |                 |
| Mitigation:                                                                                                                                                                                                                 |                    |                 |
| 1. The contractor shall put in place waste collection bins around the site; these shall easily identifiable by shape, colour and size to allow for the segregation of waste into recyclables, hazardous and non-recyclable. |                    |                 |

|                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|
| 2. All stock piles of materials or waste shall be situated away from paths of stormwater                  |
| 3. The drainage channels around the construction site shall be desilted regularly                         |
| 4. The contractor shall maintain emergency spill kits at the site in the event of a significant oil spill |
| <b>Cumulative impacts:</b> None                                                                           |
| <b>Residual impacts:</b> None                                                                             |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.10 Fire hazards

During the construction phase, there is a risk of fire outbreaks. The presence of large volumes of fuel and hydraulic fluid for NRMM; acetylene gas for cutting and welding; piles of combustible materials like plywood, soft boards, thatch and papyrus; damaged electricity cables and fixings are all factors that could contribute to a fire incident during the construction phase. Fire could be accidental or as a result of arson. The major causes of fire include charcoal stoves, electrical short circuits, negligence and arson. All these causes can be expected during the construction phase, especially at the campsite.

During construction, restricted access and egress to the site, confined spaces, excavation trenches, uneven ground, NRMM, absence of an established fire hydrant and unguarded openings would make it difficult for emergency crews to extinguish major fires and rescue stranded workers.

Fire incidents destroy property, cause injury and, in some cases, death. The major cause of fatalities and injuries during fires is the rapid reduction in ambient oxygen levels. During fires, oxygen is depleted by combustion and displacement by other toxic compounds. When oxygen levels are below 10%, one suffers from unconsciousness and possibly cardiac arrest. Carbon monoxide, which is a major by-product of incomplete combustion during fires, is very toxic when inhaled; it replaces oxygen in the bloodstream impairing cognitive and muscle function. Hydrogen cyanide released from the burning of plastic impairs cellular respiration. Phosgene from the combustion of vinyl materials causes itchy eyes at low levels while it causes pulmonary oedema and death at high levels.

Duration: This impact will be immediate

Extent: The extent will be local but can be restricted to the site

Magnitude: The magnitude of this impact is very high considering the possible consequences

Probability: The probability of occurrence is medium

Potential Significance: The significance of this impact is moderate but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Fire hazards                                                                                                                                                                                                                                      |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                           | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                             | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                           | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                          | Very high (10)     | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                        | Medium (3)         | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                      | Moderate (39)      | Low (12)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                      | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                      | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                   | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                          | Yes                |                 |
| <b>Mitigation:</b>                                                                                                                                                                                                                                        |                    |                 |
| 1. A fire action plan shall be established at the site. It shall include means of reporting fires; evacuation procedures; procedures for workers who remain to shut down critical operations; and a means of accounting for all workers after evacuation. |                    |                 |

|                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. All workers on site shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid. |
| 3. Emergency contacts shall be conspicuously displayed within all sections of the site                                                                                    |
| 4. A legible site map indicating evacuation routes and assembly points shall be displayed within all sections of the site.                                                |
| 5. A high-pressure water line shall be established at the site for use by emergency services in the event of major fires                                                  |
| 6. All workers shall at all times wear high-visibility clothing                                                                                                           |
| 7. All combustible materials including waste shall be kept away from fuel, acetylene gas storage                                                                          |
| 8. A smoking area away from fuel and other combustible material shall be established. "No smoking" shall be displayed in areas where smoking is prohibited                |
| <b>Cumulative impacts:</b> Fires generate smoke and large volumes of particulate matter, deteriorating ambient air quality over a large area                              |
| <b>Residual impacts:</b> A fire outbreak at the site may lead to the loss of lives of construction workers and property                                                   |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.11 Impacts of an increase in traffic

Vehicular movement on Biso – Masindi Road is expected to increase during the construction phase as the proponent mobilizes machinery and materials to start the construction phase. The increase in traffic will also be a result of trucks ferrying construction materials and debris from the site. This will increase the risk of traffic-related accidents on the roads around the site if not properly managed. An increase in vehicular movement also deteriorates air quality with an increase in fugitive dust and diesel engine emissions. Other impacts associated with an increase in traffic include noise from engines, revving, hooting, and human activity.

Duration: the impact will be immediate

Extent: This impact will be limited to the local areas around the project site and the disposal site

Magnitude: This impact is expected to be moderate

Probability: The probability that this impact will occur is definite

Potential Significance: Given the nature of the work, this impact will be moderate.

| Nature: Impacts of an increase in traffic                                                                                                                             |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                       | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                         | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                       | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                      | High (8)           | Low (4)         |
| <b>Probability</b>                                                                                                                                                    | Definite (5)       | Definite (5)    |
| <b>Significance*</b>                                                                                                                                                  | Moderate (55)      | Moderate (35)   |
| <b>Status (positive or negative)</b>                                                                                                                                  | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                  | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                               | No                 | No              |
| <b>Can impacts be mitigated?</b>                                                                                                                                      | Yes                |                 |
| <b>Mitigation:</b>                                                                                                                                                    |                    |                 |
| 1. Inform and sensitize the community in advance of the anticipated impacts on traffic and roadways during the construction phase.                                    |                    |                 |
| 2. Transport of construction materials shall be scheduled for off-peak traffic hours. This will reduce the risk of traffic flow disruptions on Biso – Masindi Road.   |                    |                 |
| 3. Appropriate traffic warning signs shall be placed along Biso – Masindi Road to inform road users of trucks turning ahead and instruct them to reduce speed.        |                    |                 |
| 4. Loading of transportation trucks shall be within the permissible limits (guidelines) for Uganda National Roads Authority (UNRA) axle loads for the targeted roads. |                    |                 |
| 5. Debris and excavation shall be properly covered during transportation from the site to prevent spillage during transportation                                      |                    |                 |

|                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. The trucks shall be parked on the proposed site until they are offloaded.<br>7. Heavy equipment shall be transported early morning (12 am – 5 am) with proper pilotage.<br>8. The use of flagmen shall be employed to regulate traffic flow.<br>9. Training and sensitization of personnel (drivers) in road safety and traffic regulations shall also be done by road contractors. |
| <b>Cumulative impacts:</b> <ol style="list-style-type: none"> <li>Noise from increased traffic will worsen the noise problem from demolition activities at the site</li> <li>An increase in fugitive dust emissions and diesel exhaust fumes will further degrade air quality around the project area</li> </ol>                                                                       |
| <b>Residual impacts:</b>                                                                                                                                                                                                                                                                                                                                                               |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.12 Noise and vibration impacts at the construction site and from construction traffic

Noise levels measured at the site were between 95.3 dBA and 44.7 dBA averaging at about 64 dBA as shown in table 5.9. These tranquil conditions, prevalent around the project area, will be disrupted by the increase in vehicular movement, use of heavy machinery, human activity, demolition and excavation works. Noise levels generated by NRMM range from 80 to 130 dBA with power tools averaging at about 115 dBA. Common noise levels generated by a range of equipment used in demolition, excavation and construction are given in table 8.2.

Table 8.2: Common noise levels generated by a range of equipment used in demolition, excavation and construction

| Equipment                                              | Sound level at Operator (dBA) |         |
|--------------------------------------------------------|-------------------------------|---------|
|                                                        | Average                       | Range   |
| Dozer, Dumpers                                         | 96                            | 89-103  |
| Front end loaders                                      | 88                            | 85-91   |
| Excavators                                             | 87                            | 86-90   |
| Backhoes                                               | 86.5                          | 79-89   |
| Scrapers                                               | 96                            | 84-102  |
| Mobile cranes                                          | 100                           | 97-102  |
| Compressors                                            | 79                            | 62-92   |
| Compactors                                             | 90                            | 79-93   |
| Pavers                                                 | 101                           | 100-102 |
| Bar benders                                            | 95                            | 94-96   |
| Pneumatic breakers                                     | 106                           | 94-111  |
| Hydraulic breakers                                     | 95.5                          | 90-100  |
| Graders, trucks, generators, concrete pumps and mixers | <85                           |         |
| Saws                                                   | <85                           |         |
| Poker vibrators                                        | 94.5                          | 87-98   |
| Pile drivers (diesel & pneumatic)                      | 98                            | 82-105  |
| Pile drivers (gravity, bored)                          | 82.5                          | 62-91   |

Source: (Eaton, 2000)

The National Environment (Noise Standards and Control) Regulations, 2003 and the National Institute for Occupational Safety and Health (USA) establish 85 dBA as the threshold exposure limit for 8 hours. The World Bank EHS on noise recommends that the one-hour  $L_{Aeq}$  shall not exceed 55 dBA. From all perspectives, the anticipated noise levels during the construction phase will exceed the safety limits and warrant appropriate mitigation to address the associated occupational health and safety impacts. Noise control is also crucial to safeguard the fauna species identified at the site.

The most common impact of exposure to excessive noise is Noise-Induced Hearing Loss (NIHL), which is a result of physical damage to the eardrum and the sensitive hair cells in the



inner ear. Noise pollution is also linked to several adverse effects on Autonomic Nervous System and the Cardiovascular system. Lower levels of noise that disturb sleep, communication and other activities often lead to emotional and cognitive annoyance (Babisch, 2011); over time, the resulting chronic stress reaction leads to cardiovascular risks such as hypertension, increased glucose levels, blood viscosity, lipids and activation of blood coagulation. Noise has also been linked to stress cardiomyopathy (Takotsubo syndrome), a condition caused by excessive stress hormone release. High levels of environmental noise are also known to cause depression and anxiety in both humans and animals (Thomas Münzel, et al., 2018). Children are more sensitive to the effects of noise pollution such as hearing impairment and psychological effects.

Noise generally affects an organism's sense of detecting and interpreting sound signals; a crucial sense for survival for several animal species. Anthropogenic noise affects animals that use distinctive calls to warn others of danger, attract mates, or identify their offspring or packs in a crowd. Noise also interferes with mating in animals with distinct mating calls; navigation in nocturnal species; and foraging and hunting among the predatory species.

**Duration:** This impact is expected to be immediate during the construction phase

**Extent:** The extent of the increase in environmental noise will be local but can be restricted to the site

**Magnitude:** The magnitude of this impact is very high given the adverse health consequences and the sensitivity of the project site

**Probability:** The probability of occurrence is definite

**Potential Significance:** The significance of the anticipated impacts of noise is high.

| Nature: Noise and vibration impacts at the construction site and from construction traffic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Very high (10)     | Moderate (6)    |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Definite (5)       | Definite (5)    |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | High (65)          | Moderate (35)   |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All construction and excavation shall be restricted to the day-time only</li> <li>2. The proponent shall acquire a licence to emit noise above permissible noise levels per the National Environment (Noise Standards and Control) Regulations, 2003; and comply with the conditions provided therein</li> <li>3. Equipment with the lowest noise rating shall be used where feasible</li> <li>4. NRMM such as generators shall be fitted with mufflers, enclosures and any other damping material to reduce their noise emission</li> <li>5. All machinery used on site shall be promptly serviced and maintained. Maintenance of old equipment can reduce noise levels by 50%</li> <li>6. Sound-absorbing barriers like plywood shall be erected around the site and noise equipment</li> <li>7. Noisy NRMM shall be sited away from the occupied structures adjacent to the site</li> <li>8. All NRMM and vehicles shall be shut down when not in use</li> <li>9. All workers shall be provided with the appropriate PPE such as earmuffs or plugs to protect them from noise levels above 85 dBA</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> This impact may be exacerbated by the ongoing construction of the Biso – Masindi road                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.13 Impacts related to population influx

Construction activities are expected to employ 100-200 people in different jobs from truck drivers, machine operators, supervisors, carpenters, welders, plumbers, and casual labourers. Highly specialized labour may also be imported from different countries. This is in addition to the entrepreneurial individuals that will come to the project area to supply food and other hospitality services to the workers at the site. This will increase the population around the project site and adjacent communities.

A rapid increase in population in the community comes with several adverse impacts such as an increase in crime rate, the spread of diseases, and other social vices. The spread of highly-infectious diseases such as COVID-19 and Ebola is closely linked to an increase in the movement and interaction of individuals from different places.

**Duration:** This impact will be immediate

**Extent:** The impacts of an increase in the population will be local, particularly with the spread of highly-infectious diseases.

**Magnitude:** The magnitude of this impact will be moderate

**Probability:** The probability that this impact will occur is definite

**Potential Significance:** This impact will be moderate but can be reduced to low with the implementation of mitigation measures

| Nature: Impacts related to population influx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Moderate (6)       | Minor (2)       |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Definite (5)       | Medium (3)      |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Moderate (45)      | Low (15)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Reversible         | Reversible      |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No                 | No              |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall put in place measures to prevent the spread of highly-infectious diseases such as COVID-19 and Ebola as guided by the Health Authorities including encouraging vaccination</li> <li>2. Workers shall undergo training on social ethics and safe sex practices to curtail the spread of HIV/AIDS and other STDs</li> <li>3. A grievance redress mechanism shall be established to amicably resolve any grievances between the community and workers on site</li> <li>4. To the greatest extent possible, able and willing workers from the local area shall be hired to maximize the benefits accrued by the host community from project implementation</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> Failure to implement preventive measures at the site may lead to the rampant spread of highly-infectious diseases in the community                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |
| <b>Residual impacts:</b> Cultural conflict and tension associated with the interaction between the workers and local communities, due to different cultural norms, practices and beliefs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.14 Loss of vegetation and terrestrial habitat alteration

Clearing of vegetation and other construction activities may lead to loss of habitat for fauna species including primates, rodents, arthropods and other mammalian species. Other aspects of the construction and operation phase such as noise, vibrations, waste management and human-wildlife interactions may make habitats less suitable for feeding and breeding by altering the environmental characteristics of these areas.

Several tree species currently occupy the space where the proposed building will be constructed. These will include *Celtis africana*, *Maesopsis eminii*, *Cola gingatea*, *Markhamea lutea*, *Ficus sp*, *Voacanga thouarsii* and *Toona sinensis*. It should be noted that were no species of conservation concern recorded at the site are listed as reserved species in the National Forestry and Tree Planting Regulations, 2016. However, the flora on site acts as an important source of food for a variety of animal species within the project area. These tree species also support epiphytes that depend on them for sustenance as a source of water and nutrients. Mature tree species on-site that are not listed as reserved species act as habitats and breeding grounds for avifauna; Speckled Mousebird *Colius striatus*, Yellow-whiskered Greenbul *Eurillas latirostris*, Ross's Turaco *Musophaga rossae*, White-browed Robin chat *Cossypha heuglini*, Common Bulbul *Pycnonotus barbatus*, Black and White Casqued Hornbill *Bycanistes subcylindricus*, Yellow-fronted Canary *Crithagra mozambica* and Banded Prinia *Prinia bairdii* that are normally sited around the forest reserve are known to perch on trees within the project area.

The ecological impact assessment however, has revealed that the projected loss in vegetation will not significantly impact the species richness within the project area as the species in question are not endangered and are prevalent within the Budongo CFR.

**Duration:** This impact will be immediate during the construction phase

**Extent:** The impact will be at the site level

**Magnitude:** The magnitude will be low considering the project is designed to minimize the number of trees to be felled and the individual trees lost are prevalent within the Budongo CFR

**Probability:** The probability that this impact will occur is definite

**Potential Significance:** This impact will be moderate but can be reduced to low with the implementation of mitigation measures

| Nature: Loss of vegetation and terrestrial habitat alteration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Moderate (6)       | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Definite (5)       | Definite (5)    |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Moderate (45)      | Low (30)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall implement biodiversity offsets or other compensation mechanisms per section 115 of the National Environment Act, 2019; this shall fully compensate for the loss in biodiversity as a result of project implementation.</li> <li>2. Where applicable, mechanized vegetation removal shall be replaced with hand techniques, where the plant is removed with the root system intact, for replanting after construction;</li> <li>3. Vegetation translocation and relocation techniques shall be used as necessary. Vegetation cover, such as indigenous plant species topsoil or overburden suitable for sustaining growth after construction will be removed in separate operations and segregated for later use during landscaping;</li> <li>4. Mature tree species within the proposed project site shall be spared as far as is practical to minimize vegetation loss to crops that are easy to re-vegetate in other areas;</li> <li>5. Native trees will be replanted along the project corridor giving priority to preferred species for bird nesting, feeding, community use and provision of canopy or shade.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> As more activities (developments) take precedence in the area, it is anticipated that more native/crop plant species are likely to be lost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |

**Residual impacts:** None

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.15 Poaching

During the construction phase, there is a risk for the workers and/or criminals to involve themselves in the illegal hunting or capturing of wild animals within the forest reserve. Several reasons may lead one to poach including commercial gain, consumption, trophies, pleasure, and thrill in killing wildlife, one may also participate in poaching because they disagree with certain hunting regulations, claim a traditional right to hunt, or have negative dispositions toward legal authority. Poaching can lead to a myriad of detrimental environmental impacts including:

- Reduction of animal populations and possible extinction
- Defaunation of forests disrupting seed predation and dispersal cycles
- Reduction in the effective size of the protected area
- Emergence and spread of zoonotic diseases such as Ebola, SARS etc.
- Negative publicity for the forest reserve as a tourism destination

Duration: This impact will be immediate during the construction phase

Extent: The impact will be at a local level

Magnitude: The magnitude will be very high considering the conservation status and the fragility of the ecosystems within the Budongo CFR

Probability: The probability that this impact will occur is definite in the absence of appropriate mitigation measures

Potential Significance: This impact will be high but can be reduced to low with the strict implementation of mitigation measures

| Nature: Poaching                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Very high (10)     | Minor (2)       |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Definite (5)       | Improbable (1)  |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High (65)          | Low (4)         |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Implement strict control over firearms and other weapons to prevent them from falling into the hands of poachers.</li> <li>2. Employ additional security personnel and rangers during the construction phase to monitor the area. The presence of trained rangers and law enforcement officers in these areas help to deter poachers and respond to threats promptly.</li> <li>3. Clearly mark the construction site boundaries with visible signage indicating that the area is protected and any unauthorized entry is prohibited. In addition to this, install temporary fencing around the site to restrict access and prevent wildlife disturbance.</li> <li>4. Collaborate with local community members to conduct regular patrols around the construction site, reporting any suspicious activities. Establish a system for construction workers and supervisors to report any unusual or suspicious activities to relevant authorities.</li> <li>5. Train and educate construction workers about the importance of wildlife conservation, the risks of poaching, and how to identify and report suspicious behaviour. Conduct regular security briefings for construction workers, emphasizing the zero-tolerance policy for engaging in illegal activities, including poaching</li> </ol> |                    |                 |

|                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. Clearly define and restrict access to sensitive areas within the construction site, such as potential wildlife corridors, to prevent any potential interference with animal movements.                                                                                         |
| 7. Collaborate with local law enforcement agencies to ensure regular patrols and responses to any reported incidents. Work closely with Budongo Central Forest Reserve sector management to share information and coordinate anti-poaching efforts during the construction phase. |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                   |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                     |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.16 Animal abuse

Animal species at the site including reptiles and primates among others may be subjected to acts of cruelty by the construction workers. These may include vehicle strikes, poisoning, stoning and beating among other forms of active aggression. These may be a result of fear, violent attitude towards the animals, cultural or religious beliefs, reckless driving and self-defence. This may lead to death or injury to the animals, destruction of property and machinery, injury to the workers, and negative publicity towards the forest reserve.

**Duration:** This impact will be immediate during the construction phase

**Extent:** The impact will be at a local level

**Magnitude:** The magnitude will be very high considering the conservation status and the fragility of the ecosystems within the Budongo CFR

**Probability:** The probability that this impact will occur is definite

**Potential Significance:** This impact will be high but can be reduced to low with the implementation of mitigation measures

| Nature: Animal abuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Very high (10)     | Minor (2)       |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Definite (5)       | Improbable (1)  |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | High (65)          | Low (4)         |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                |                 |
| <b>Mitigation:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |
| 1. Appropriate signage shall be put up at the VICs instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the CFR (for example speed limits and no hooting)<br>2. The construction workers shall undergo an induction to educate them on the importance of wildlife species and response actions when attacked by a problem animal<br>3. A game ranger shall be retained at the site at all times to handle problem animals<br>4. All incidences of attacks on animals or workers shall be reported to the proponent<br>5. Fully stocked first aid kits equipped with anti-venom and anti-rabies vaccines shall be kept at the site |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.2.17 Illegal logging

The involvement of communities within the project area in activities like charcoal burning and logging leads to the destruction of the ecosystem. These activities involve the cutting of trees used for fencing posts, construction, firewood, lumbering (sawing timber for sale), tree bark



stripping for medicine and herbs and charcoal burning. Cutting of trees which is rampant in the project region results in the alteration of plant community structures in terms of species diversity, distribution of different species and plant density. Possible disruption of essential ecological processes is associated with accelerated and irreplaceable depletion of genes, populations, species and ecosystems.

Selective cutting of trees for charcoal burning results in the simplification of the habitat linked with the observed thinning of woodlands. For instance, a tree species can support many plant and animal species on an obligatory basis. Charcoal burning if not controlled (regulated) may lead to deforestation and environmental degradation, therefore, disrupting the rich biodiversity ecosystem. Nearly all charcoal consumed in Uganda and elsewhere in sub-Saharan Africa is made from local indigenous tree species. Forestry or trees are endowed with important ecological benefits including soil erosion control, catchment protection and wildlife conservation (O'Keefe, 1979). Due to the accelerated and irreplaceable depletion of genes, populations, species and ecosystems associated with charcoal burning, wildlife habitats may be affected negatively leading to a decline in trophy animals. Charcoal being a bulky product also causes damage to the already poor existing access roads within the project areas, by the heavy goods vehicles used in transportation, creating potholes.

Collection and extraction of plant resources such as thatch grass may probably have a minimal detrimental impact if it is regulated. However, tree cutting for poles and firewood and burning for charcoal and timber may change land cover patterns in the area. All these activities impact the vegetation pattern of the area.

Logging and charcoal burning leads to the shrinking of habitats for wildlife. In addition, the population of wildlife will decline due to the increase in subsistence poaching. This will increase as the loggers and charcoal burners continue to kill wildlife to sustain their livelihoods while undertaking logging and charcoal burning. Important species like the shea nut butter tree are being cut due to the good quality of charcoal they produce. Several sections of the CFR have been put under pressure for firewood and building poles. Logging and charcoal burning continue to encroach into wildlife habitats. If this is left unchecked most of the wildlife habitat in the CFR will continue to be destroyed.

**Duration:** This impact will be immediate during the construction phase

**Extent:** The impact will be at a local level

**Magnitude:** The magnitude will be very high considering the conservation status and the fragility of the ecosystems within the Budongo CFR

**Potential Significance:** This impact will be high but can be reduced to low with the implementation of mitigation measures

| Nature: Illegal logging                                                                                                            |                    |                 |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                    | Without mitigation | With mitigation |
| Extent                                                                                                                             | Local (2)          | Site (1)        |
| Duration                                                                                                                           | Immediate (1)      | Immediate (1)   |
| Magnitude                                                                                                                          | Very high (10)     | Minor (2)       |
| Probability                                                                                                                        | Definite (5)       | Improbable (1)  |
| Significance*                                                                                                                      | High (65)          | Low (4)         |
| Status (positive or negative)                                                                                                      | Negative           | Negative        |
| Reversibility                                                                                                                      | Irreversible       | Irreversible    |
| Irreplaceable loss of resources?                                                                                                   | Yes                | Yes             |
| Can impacts be mitigated?                                                                                                          | Yes                |                 |
| Mitigation:                                                                                                                        |                    |                 |
| 1. The timber used in the construction of the VIC shall be sourced from licensed timber dealers indicating the source of the trees |                    |                 |

|                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. The proponent shall use the VIC as an avenue to create environmental awareness and education to communities about environmental protection and the dangers arising from illegal activities to improve the existing situation within the CFR. |
| 3. The proponent shall fast-track tree planting and conservation education in the project districts in close collaboration with other partners including sensitizing communities about accruing benefits.                                       |
| 4. The proponent in collaboration with District leaders, NEMA, and Sub- County leaders needs to regulate charcoal burning and logging. Scouts/rangers need to be increased to monitor and stop illegal activities.                              |
| 5. The proponent shall establish habitat monitoring systems to support programmes aimed at rehabilitating the CFRs                                                                                                                              |
| 6. The government may consider the provision of solar products at subsidized rates to minimize the cutting of trees for charcoal and firewood                                                                                                   |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                   |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

## 8.3 Impacts from the operation phase

### 8.3.1 Tourism boost

The VIC will boost tourism in the Central Forest Reserve through the dissemination of well-curated information on the tourism products available and showcasing the species richness and cultural heritage of the communities within that area. This will bridge a critical gap in the tourism sector and allow more people to appreciate and participate in the tourism activities available within the Central Forest Reserve. The VIC will also boost local tourism, particularly through engagement with transient visitors who have been alienated under NFA's current tourism promotion arrangement

The economic contribution of VIC is driven by its influence on travel and spending behaviour. The VIC will play a critical role in promoting local businesses, events and community services to visitors. Through the information shared and the skilful sales and advice provided in person and online, the VIC will have a positive impact on the overall visitor experience and unlock visitor spending, facilitating a flow on effect through increased visitor expenditure and stay duration. The facilitation by the VIC is both direct and indirect:

- Directly facilitated where visitors purchase services and goods at the VIC
- Indirectly facilitated -where visitors are made aware of services and goods while at the VIC, but purchase elsewhere, contributing expenditure into local economies

The economic and social impacts highlight the VIC's capacity to provide a return on investment and enable the proponent to establish a more robust financial case for continued investment in VICs in other protected areas.

Duration: The impact will be long-term, throughout the operational phase

Extent: The boost in tourism will be largely local

Magnitude: The magnitude of the tourism boost is expected to be high

Probability: There is a high probability that the VICs will result in a boost in the tourism sector

Potential Significance: This impact will be low but can be enhanced to moderate

| Nature: Tourism boost                |                     |                  |
|--------------------------------------|---------------------|------------------|
|                                      | Without enhancement | With enhancement |
| <b>Extent</b>                        | Site (1)            | Local (2)        |
| <b>Duration</b>                      | Long-term (4)       | Long-term (4)    |
| <b>Magnitude</b>                     | Moderate (6)        | High (8)         |
| <b>Probability</b>                   | Medium (3)          | High (4)         |
| <b>Significance*</b>                 | Low (33)            | Moderate (56)    |
| <b>Status (positive or negative)</b> | Positive            | Positive         |
| <b>Reversibility</b>                 | Irreversible        | Irreversible     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | None | None |
| Can impacts be enhanced?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes  |      |
| Enhancement:<br><div><div>1.</div><div>The operation of the VIC shall be consolidated by other tourism promotion initiatives including aggressive marketing and diversification of the tourism products offered within the CFR</div></div> <div><div>2.</div><div>The proponent shall consistently engage the relevant stakeholders to obtain feedback and suggestions on possible areas for improvement regarding the operation of the VIC. Stakeholders may include communities, tourists, private operators and other government agencies</div></div> |      |      |
| Cumulative impacts: The tourism boost resulting from the operation of the VIC will consolidate ongoing efforts by the proponent to develop the eco-tourism sector                                                                                                                                                                                                                                                                                                                                                                                        |      |      |
| Residual impacts: None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |      |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.2 Enhanced visitor experience

The VIC will significantly enhance the visitor experience by providing an inclusive space where a person can unwind, plan, make reservations, gain information, refresh, get entertained, make inquiries, receive assistance, interact and share experiences. The VIC will also be an important avenue for the Authority to garner feedback and identify areas for improvement in the eco-tourism sector.

Duration: The impact will be Long-term, throughout the operational phase

Extent: The enhanced visitor experience will be largely restricted to the site

Magnitude: The magnitude of the tourism boost is expected to be very high

Probability: The proposed VIC will definitely enhance the visitor experience within the Budongo CFR

Potential Significance: This impact will be moderate but can be enhanced to high

| Nature: Enhanced visitor experience                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Moderate (55)       | High (75)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| Can impacts be enhanced?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes                 |                  |
| Enhancement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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|                     |                  |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.3 Socio-economic benefits

The spill over effect of the tourism boost in adjacent communities will enhance the incomes of individuals and businesses that participate in tourism through the provision of services such

as accommodation, meals, entertainment, community walks and goods such as crafts and artefacts. This is especially the case for the towns and communities where tourism forms a major part of the local economy and contributes significantly to livelihoods and community welfare. Socio-economic benefits associated with the project shall range from contribution to the local and national economy, infrastructure improvement and provision of employment opportunities. The project will highly benefit the communities through;

- Support to the development of the apiculture value chain within CFM groups, including the provision of inputs and training of the communities on beekeeping, value addition, and business skills
- Support to communities for the establishment of commercial tree nurseries, using mixed tree and fruit species; and
- Promotion and support to craft-making projects among women groups, including training of women groups on craft-making and business skills and provision them with craft inputs.

Furthermore, the boost in tourism will create opportunities for businesses in tourism and conservation in the communities adjacent to the protected areas. These will include transport, hotels, campsites, restaurants and shops, among others.

**Duration:** The impact will be long-term, throughout the operational phase

**Extent:** The socio-economic boost will be mainly local

**Magnitude:** The socio-economic benefits are expected to be high

**Probability:** The probability that the local communities will benefit from the VIC is high

**Potential Significance:** This impact will be moderate but can be enhanced to high

| Nature: Socio-economic benefits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Without enhancement | With enhancement |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Local (2)           | District (3)     |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Long-term (4)       | Long-term (4)    |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Moderate (6)        | High (8)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Medium (3)          | High (4)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Moderate (36)       | High (60)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Positive            | Positive         |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Irreversible        | Irreversible     |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | None                | None             |
| <b>Can impacts be enhanced?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                 |                  |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. The proponent shall provide technical and/or financial support to the local communities through the CFMs; this will enhance the quality of the services provided by the community to the tourism industry</li> <li>2. The proponent shall engage with the local communities (leaders, vulnerable groups and community-based organizations) to evaluate the impact of the tourism boost on the local communities; this engagement shall inform the formulation of practical and acceptable enhancement or mitigation measures</li> <li>3. Local business that are found to be reliable and willing shall engaged on a contractual basis to provide goods or services to the VIC; this will significantly enhance the returns made by the local businesses</li> </ol> |                     |                  |
| <b>Cumulative impacts:</b> The operation of the VIC will enhance the benefits enjoyed by communities through community livelihood support (CFMs) and corporate social responsibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                  |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                  |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.4 Security risks

The increase in the population at the project site, the presence of cash at hand, foreign exchange, luggage and other valuables may lead to an increase in incidences of crime at the

VIC. The VIC will be operating on the concept of Universal Access meaning everyone will be welcome regardless of their intentions; this creates a major security risk.

Duration: The impact will be Long-term

Extent: The impact will be mainly restricted to the site

Magnitude: The magnitude of this impact is moderate

Probability: The probability of security risks manifesting at the VIC is medium

Potential Significance: This impact will be moderate but can be minimized to low

| Nature: Security risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Local (2)          | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Long-term (4)      | Long-term (4)   |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Moderate (6)       | Low (4)         |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Medium (3)         | Low (2)         |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Moderate (36)      | Low (18)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Irreversible       | Irreversible    |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | None               | None            |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A security checkpoint shall be established at the entrance to the VIC where vehicles will be searched and persons may be asked to identify themselves before accessing the VIC</li> <li>2. Signage instructing all personnel to safeguard their personal belongings at all times shall be displayed within all sections of the VIC</li> <li>3. The VIC will be kept under CCTV surveillance, 24/7; the CCTV system shall have remote access capabilities</li> <li>4. The proponent shall provide ample security at the VIC to tackle any threats to life and property</li> <li>5. The security personnel at the VIC shall be instructed to use desist from unlawful acts such as torture, excessive force, extortion, etc.</li> <li>6. The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals</li> <li>7. The proponent shall adhere to any guidance issued by security organs i.e. Uganda Police Force, Interpol, UPDF etc.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.5 Occupational Safety and Health risks

OSH risks are an inherent part of the operation phase. These can lead to injuries or fatalities if they are not eliminated, minimized or controlled. OSH hazards likely to face employees during the operation phase include uneven surfaces, sharp objects, excessive noise, particulate matter, wildlife, extreme temperatures, stress, depression and pathogens among others.

Duration: This is a long-term impact as long as the VIC remains in operation

Extent: These risks are majorly restricted to the site

Magnitude: The magnitude of these risks is very high

Probability: Health and Safety risks are an inherent part of the operation phase and their probability of occurrence is definite

Potential Significance: The significance is high but can be reduced to moderate with the implementation of mitigation measures



| Nature: Occupational Safety and Health risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Site (1)           | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Long-term (4)      | Long-term (4)   |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Very High (10)     | Low (4)         |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Definite (5)       | Definite (5)    |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High (75)          | Moderate (45)   |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Irreversible       | Irreversible    |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                | Yes             |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Restriction of exposure by, for example, re-organizing tasks to build in rest periods or other breaks from work. This will allow workers to rest in an area where the environment is comfortable and, if necessary, to replace bodily fluids to combat dehydration or cold. If work rates cause excessive sweating, workers may need more frequent rest breaks and a facility for changing into dry clothing;</li> <li>2. Medical pre-selection of employees to ensure that they are fit to work in these environments;</li> <li>3. Lighting should be sufficient to enable people to work and move about safely. If necessary, local lighting shall be provided at individual workstations and places of particular risk such as crossing points on traffic routes. Lighting and light fittings shall not create any hazards;</li> <li>4. Workrooms shall have enough free space to allow people to move about with ease;</li> <li>5. The workplace, and certain equipment, devices and systems shall be maintained in efficient working order (efficient for health, safety and welfare)</li> <li>6. There shall be sufficient traffic routes, of sufficient width and headroom, allowing people and vehicles to circulate safely and with ease</li> <li>7. Set appropriate speed limits, and make sure they, and any other traffic rules, are obeyed;</li> <li>8. Windows, transparent or translucent surfaces in walls, partitions, doors and gates shall, where necessary for reasons of health and safety, be made of safety material or be protected against breakage;</li> <li>9. Cleaning and the removal of waste shall be carried out as necessary by an effective method. Waste shall be stored in suitable receptacles.;</li> <li>10. Doors and gates shall be suitably constructed and fitted with safety devices if necessary;</li> <li>11. Suitable and sufficient sanitary conveniences and washing facilities shall be provided at readily accessible places; and</li> <li>12. An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, shall be provided</li> <li>13. The employees at the VIC shall be provided with the appropriate PPE considering the hazards they are occupationally exposed to</li> <li>14. All sections of the VIC shall be fitted with legible hazard and safety signage indicating the nature of hazards present, safety protocols in place and the location of emergency exits and assembly points</li> <li>15. A fully stocked first aid box shall be maintained at the site at all times</li> <li>16. All employees shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> Employees may be cumulatively exposed to multiple occupational Health and Safety hazards for example vibrations can aggravate existing musculoskeletal disorders from other hazards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |
| <b>Residual impacts:</b> Occupational accidents and diseases cause dreadful human pain and suffering, as well as important economic losses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.6 Fire risks

The use of materials such as wood and thatch and the presence of fuel, cloth, crafts from sisal, papyrus, cardboard and other combustible materials will lead to a significant risk of a fire outbreak at the VICs. Fires lead to injuries, damage to property and loss of lives in the extreme.

Fires also lead to acute air pollution with the emission of particulate matter, soot, carbon monoxide and phosgene.

**Duration:** This is a long-term impact

**Extent:** The extent will be local but can be limited to the site

**Magnitude:** The magnitude of this impact is very high considering the potentially fatal consequences

**Probability:** The probability of occurrence is medium

**Potential Significance:** This impact is moderate with the potential to be low

| Nature: Fire risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Long-term (4)      | Long-term (4)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Very high (10)     | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Medium (3)         | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Moderate (48)      | Low (18)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A fire action plan shall be established at the VIC per the general management plan. It shall include means of reporting fires; evacuation procedures; procedures for staff who remain to shut down critical operations or utilities; and a means of accounting for all occupants after evacuation.</li> <li>2. All staff shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid.</li> <li>3. Emergency contacts shall be conspicuously displayed within all sections of the VIC</li> <li>4. Legible maps indicating evacuation routes and assembly points shall be displayed within all sections of the VIC.</li> <li>5. Firefighting systems proportionate to the risk of a fire outbreak shall be installed at the VIC, these may include smoke detectors, alarms, extinguishers, hoses and fire hydrants</li> <li>6. All combustible materials including waste shall be kept away from fuel, sources of heat and ignition</li> <li>7. A smoking area away from fuel and other combustible material shall be established. "NO SMOKING" signs shall be displayed in areas where smoking is prohibited</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> Fires generate smoke and large volumes of particulate matter, deteriorating ambient air quality over a large area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |
| <b>Residual impacts:</b> A fire outbreak at the VIC may lead to loss of life and property                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.7 Community Health and Safety

Solid waste generation, the population influx, wastewater generation and the human-wildlife interaction are likely to foster the spread of diseases among staff onsite, the visitors and the general community. The rapid increase in population will exert more pressure on the medical services within the area, increasing the time of waiting at medical facilities and possibly, temporary shortages in essential drugs. Social vices catalysed by the influence of money and leisure may also promote the spread of sexually transmitted diseases within the local community. The increased interaction between people from different areas may also increase the risk of spreading highly infectious diseases such as Ebola and COVID-19.

An increase in human-wildlife interaction may also foster the emergence and spread of zoonoses. These may include Rabies, West Nile fever, Lyme disease, Hantavirus Pulmonary Syndrome (HPS), Histoplasmosis and Mange among others

**Duration:** This impact will be long-term

**Extent:** The community health and safety risks will be local.

**Magnitude:** The magnitude of this impact will be moderate

**Probability:** The probability that this impact will occur is medium

**Potential Significance:** This impact will be moderate but can be reduced to low with the implementation of mitigation measures

| Nature: Community Health and Safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Long-term (4)      | Long-term (4)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Moderate (6)       | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Medium (3)         | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Moderate (36)      | Low (18)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | None               | None            |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall put in place measures to prevent the spread of highly-infectious diseases (such as Ebola and COVID-19) as recommended by the Health Authorities</li> <li>2. The proponent shall create awareness of HIV/AIDS and other STDs among the employees; this can be achieved through having Reproductive Health Talks and signage</li> <li>3. The proponent shall institute good sanitation practices and encourage employees to strictly observe good personal hygiene</li> <li>4. The proponent shall encourage employees to get rabies pre-exposure vaccination</li> <li>5. Visitors and workers shall avoid physical contact with the animal species as much as possible; unless the physical contact is sanctioned by the proponent</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.8 Solid waste generation

Operations at the VIC will lead to the generation of solid waste. These include food waste, plastics and other refuse materials. If these wastes are improperly managed, they may cause unsanitary conditions and facilitate the spread of diseases. The waste could potentially end up in the surface waterways.

Leachate from decomposing (un-cleared) dumpsters is a major source of pollution both for ground and surface water sources. Improper management of waste and disposal can cause public health risks due to environmental pollution: impaired air quality, stormwater contamination of water courses and infections when people rummage through improperly dumped waste or raw waste stockpiles.

Poorly discarded solid waste materials, particularly packaging for food, create a choking hazard in wild animals and foster the spread of zoonotic diseases. Feeding from poorly disposed of waste may increase animal presence at the VIC exacerbating the risks of human-wildlife interaction such as aggressive behaviour and road kills among others.

**Duration:** This impact will be Long-term, as long as the VIC is in operation

**Extent:** The extent of the impact will be local but can be restricted to the site

**Magnitude:** The magnitude of the impact will be high

**Probability:** There is a high probability that this impact will occur

**Potential Significance:** The significance of this impact is moderate but can be reduced to low

| Nature: Solid waste generation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Local (2)          | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Long-term (4)      | Long-term (4)   |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | High (8)           | Low (4)         |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | High (4)           | Low (2)         |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Moderate (56)      | Low (18)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reversible         | Reversible      |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes                | No              |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements</li> <li>2. Well-labelled bins shall be placed at all sections of the building, these will aid in the segregation of waste</li> <li>3. Legible signage showing where each type of waste shall be disposed of shall be put up in all sections of the VIC</li> <li>4. The waste receptacles shall have well-secured lids to prevent animals from accessing the discarded materials</li> <li>5. Medical waste from the clinic and the administration of first aid shall be segregated from the clinic and disposed of by a licensed medical waste handler</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.9 Climate Change Related impacts

Climate change can have significant impacts on the proposed Visitor Information Centre (VIC) in Budongo Central Forest Reserve. Similarly, the VIC can also contribute to climate change through their activities and the influence it exerts on visitor behaviour.

#### 8.3.9.1 Impacts on Climate Change

The emission of carbon dioxide and other greenhouse gases to the environment is considered a primary factor in causing global warming and thus climate change. Other Greenhouse Gas emissions expected from the VIC will include Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>) and Carbon Monoxide (CO). Furthermore, the increase in the demand for cold refreshments and internal HVAC systems will create the need for use of refrigeration units that often operate on GHGs.

Extent: This impact will occur at a local level

Duration: The impact will be Long-term

Magnitude: The potential magnitude of this impact will be moderate

Probability: There is a high probability that this impact may occur.

Potential significance: With the implementation of the suggested mitigation measures, the significance can be reduced from moderate to low.

| Nature: Impacts on Climate Change |                    |                 |
|-----------------------------------|--------------------|-----------------|
|                                   | Without mitigation | With mitigation |
| Extent                            | Local (2)          | Site (1)        |
| Duration                          | Long-term (4)      | Long-term (4)   |
| Magnitude                         | Moderate (6)       | Low (4)         |
| Probability                       | High (4)           | Low (2)         |
| Significance*                     | Moderate (48)      | Low (16)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Negative     | Negative     |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Irreversible | Irreversible |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No           | No           |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes          |              |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>2. Recycling of non-biodegradable waste other than open incineration shall be encouraged to reduce the release of greenhouse gases and particulate matter.</li> <li>3. All plastic waste generated at the VIC shall be collected in such a manner as to allow it to be recycled</li> <li>4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site</li> </ol> |              |              |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |              |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.9.2 Climate change impact on the project

Climate change shall exert significant impacts on the visitor information centre, which serves as vital gateways to the diverse and magnificent natural attractions at Budongo Central Forest Reserve. One of the foremost challenges is the vulnerability of the centres' infrastructure to climate-related hazards. As extreme weather events, floods, and storms become more frequent and intense, visitor information centres are at risk of damage, hindering their ability to cater to tourists effectively. To mitigate this, climate-resilient infrastructure and disaster preparedness measures shall be prioritized to ensure the continuity of crucial visitor services.

Climate change may alter tourism patterns, affecting visitor numbers and preferences. Changes in weather conditions and seasonal characteristics may lead to shifts in tourist destinations, impacting the flow of visitors and necessitating adaptive strategies at information centres. The centre shall remain responsive to the changing dynamics of tourism, providing updated information and guidance to help tourists make informed decisions in an evolving climate. The proposed control and mitigation strategies can be found in appendix H section 2.1.3.

The ecological impacts of climate change on Uganda's attractions also have repercussions for visitor experiences. Altered ecosystems, such as shifts in wildlife behaviour, require continuous monitoring and adaptive messaging at the information centres. Tourists shall be equipped with the knowledge to engage with the environment responsibly and sustainably.

Beyond the centres' role in catering to tourists, climate change also affects the livelihoods of local communities surrounding these tourist destinations. Reduced agricultural productivity and disruptions in water availability can indirectly influence the quality of services provided at the visitor information centre. Engaging local communities in climate resilience and sustainable tourism initiatives is essential to maintain the support systems required for the centres to fulfil their critical functions.,

Budongo Central Forest Reserve and the proposed Visitor Information Centre are vulnerable to changes in temperature, precipitation, humidity, and wind that affect the flora, fauna. The identified climate change threats include more intense and hotter dry seasons, changing seasonality, increased flooding, less rainfall, windstorms, and increased water vapor in the air. These threats pose significant challenges to the park's biodiversity and ecosystem functioning, necessitating careful monitoring and conservation efforts to mitigate their adverse impacts.



It is expedient that the Park management adapt to the changing climate. Tables A.L.1 and A.L.2 in Appendix L clearly illustrate the climatic threats, and existing adaptive measures.

**Extent:** This impact of climate change will be local

**Duration:** The impact is long-term

**Magnitude:** The potential magnitude of this impact will be moderate but could be reduced to low with mitigation

**Probability:** There is a definite probability that this impact may occur.

**Potential significance:** With the implementation of the suggested mitigation measures, the significance can be reduced from High to moderate.

| Nature: Climate change impact on the project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Long term (4)      | Medium term (3) |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Moderate (6)       | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Definite (5)       | High (4)        |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High (60)          | Moderate (36)   |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No                 | No              |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall Incorporate climate resilient technology into building materials, drainage systems, and energy-efficient technologies to enhance the centres' capacity to withstand climate-related hazards.</li> <li>2. Encouraging responsible waste management (like recycling), reducing water consumption, and promoting sustainable energy sources (like solar electricity) will contribute to minimizing the centres' carbon footprint and overall environmental impact.</li> <li>3. Adopting sustainable landscaping practices that support native flora and fauna will enhance the resilience of the surrounding environment to climate change.</li> <li>4. Developing comprehensive disaster preparedness and response plans is crucial for addressing climate-related emergencies. Training staff in emergency procedures, conducting regular drills, and establishing communication networks with relevant authorities will enable visitor information centres to respond swiftly and effectively during extreme weather events or other climate-related disasters.</li> <li>5. To address changing tourism patterns and ecological impacts, the visitor information centre shall continually update their materials and educate tourists on climate-related risks and responsible practices. Providing information on weather forecasts, potential hazards, and guidelines for sustainable tourism will empower visitors to make informed decisions and minimize their impact on fragile environments.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.10 Impacts on air quality

Potential impacts on the air quality during the operation phase will be due to emissions from the vehicular activity and the use of biomass-based fuels. Significant emissions are anticipated in the parking lots, driveways and kitchen. Increased vehicular activity at the project site is expected to lead to a rise in concentrations of Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>), Carbon Monoxide (CO) and Lead (PB). These emissions can have significant cardiopulmonary and respiratory effects on the workers; the health effects may range from subtle biochemical and

physiological changes to difficulty in breathing, wheezing, coughing and aggravation of existing respiratory and cardiac conditions.

Duration: This impact will be Long-term

Extent: This impact will be majorly local

Magnitude: The magnitude of this impact is moderate

Probability: The probability of the ambient air quality being affected is high

Potential Significance: This impact will be moderate with the potential to be low

| Nature: Impacts on air quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Local (2)          | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Long-term (4)      | Long-term (4)   |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Moderate (6)       | Low (4)         |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High (4)           | Medium (3)      |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Moderate (48)      | Low (27)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Irreversible       | Reversible      |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No                 | No              |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                |                 |
| Mitigation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |
| <ol style="list-style-type: none"> <li>1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>2. Open incineration of waste at the VIC shall be strictly prohibited</li> <li>3. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated</li> <li>4. All vehicles and machines shall be shut down when not in use</li> <li>5. Solar, LPG gas or eco-friendly briquettes shall be used in the kitchen</li> <li>6. Cleaning operations that minimize the emission or resuspension of particulate matter shall be prioritized for example, the use of vacuuming over sweeping</li> </ol> |                    |                 |
| Cumulative impacts: None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |
| Residual impacts: None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.11 Loss of cultural identity

The local communities are prone to cultural assimilation and subsequent loss of cultural identity. The population influx and enhanced social interaction with the tourists, most of whom are likely to come from other parts of the world, with different cultures and beliefs may lead to progressive assimilation and loss of cultural identity within the local communities. Local communities may assimilate into alien cultures (foreign or local) that may allow them to profit from the boost in tourism. Misrepresentation, exaggeration and misinterpretation of the cultural heritage within the local community may also lead to dissatisfaction with the VIC and the proponent.

Duration: This impact will be Long-term

Extent: The loss of cultural identity will be local.

Magnitude: The magnitude of this impact will be moderate

Probability: The probability that this impact will occur is high

Potential Significance: This impact will be moderate but can be reduced to low with the implementation of mitigation measures

| Nature: Loss of cultural identity |                    |                 |
|-----------------------------------|--------------------|-----------------|
|                                   | Without mitigation | With mitigation |
| Extent                            | Local (2)          | Site (1)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Long-term (4) | Long-term (4) |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Moderate (6)  | Low (4)       |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | High (4)      | Medium (3)    |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Moderate (48) | Low (24)      |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Negative      | Negative      |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Reversible    | Reversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | None          | None          |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes           |               |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall engage the relevant stakeholders to identify how local cultural heritage may be incorporated into or affected by the VIC</li> <li>2. The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant</li> <li>3. The proponent shall implement a grievance redress mechanism to amicably resolve any adverse cultural impacts or any forms of misrepresentation</li> </ol> |               |               |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |               |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |               |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.12 Risk of Oil and fuel spills

The main source of oil spills at the VIC is expected to stem from the increased number of vehicles in the parking lots and driveways. This impact will be exacerbated during the peak season (June to September). Oil spills contaminate the ground on site and may be washed away into waterways by surface runoff or may leach into groundwater reservoirs. Oil spills are expected to be of major concern at VIC, adjacent to surface waterways and that where significant traffic is expected.

Duration: This is a long-term impact

Extent: The extent of this impact is local

Magnitude: The magnitude of this impact is moderate

Probability: The probability of this occurring is medium

Potential Significance: The significance of this impact is moderate but can be reduced to low

| Nature: Risk of Oil and fuel spills                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Long-term (4)      | Long-term (4)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Moderate (6)       | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Medium (3)         | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Moderate (36)      | Low (18)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Reversible         | Reversible      |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | None               | None            |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All wastewater and surface runoff shall be channelled through an oil interceptor before it is discharged into the receiving environment; this will be emptied by a licensed waste handler</li> <li>2. The proponent shall maintain spill kits at the VIC in the event of significant oil spills</li> <li>3. Contaminated soil from a significant oil spill shall be stored in a secure drum and disposed of by a licensed waste handler</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.13 Traffic disruption

The boost in the number of visitors expected as a result of the VIC will subsequently increase the number of vehicles moving in and out of the project area. Periods of gridlock may be expected during peak season at the VIC. This will increase the risks associated with traffic such as accidents, road kills and deterioration in air quality among others.

**Duration:** This is a long-term impact

**Extent:** The extent of this impact is local

**Magnitude:** The magnitude of this impact is moderate

**Probability:** The probability of this occurring is definite

**Potential Significance:** The significance of this impact is high particularly during the peak season

| Nature: Traffic disruption                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Local (2)          | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Long-term (4)      | Long-term (4)   |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Moderate (6)       | Low (4)         |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Definite (5)       | Low (2)         |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | High (60)          | Low (18)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Reversible         | Reversible      |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | None               | None            |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                |                 |
| Mitigation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |
| <ol style="list-style-type: none"> <li>1. The proponent shall establish appropriate signage indicating the routes that the vehicles shall use, reserved parking spots (like for emergency vehicles and the disabled) and the speed limit in force at the VIC's premises</li> <li>2. Appropriate signage shall be put up at the VICs instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the CFR (for example speed limits and no hooting)</li> <li>3. The proponent shall develop a traffic management plan to address the increase in traffic during the peak season</li> <li>4. The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals</li> </ol> |                    |                 |
| Cumulative impacts:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |
| Residual impacts:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.14 Tourism-related dependence

The local communities are known for their strong work ethic and their ability to adapt to changing circumstances. Agriculture is the primary occupation, with crops such as bananas, cassava, and millet being grown for subsistence and sale. In addition to farming, many locals engage in other trades such as fishing, cattle herding, and craft-making. Hard work and perseverance are highly valued traits, and success is seen as the result of one's own efforts.

The construction of a Visitor Information Center (VIC) in Budongo Central Forest Reserve can potentially lead to a loss of traditional values around work and self-sufficiency, which in turn can create a culture of dependence on begging. This is because the presence of a VIC can create a perception among some members of the community that the only viable means of generating income is through tourism-related activities, such as begging or selling souvenirs to visitors.

In some cases, this perception can lead to a shift away from traditional livelihoods and work practices that may have been more self-sufficient and sustainable in the long-term. This can contribute to a sense of disconnection from traditional values and practices, which can further undermine the community's ability to build resilience and adapt to changing circumstances.

Additionally, the perception of wealth associated with the presence of a VIC can create a sense of entitlement among some members of the community, leading to a loss of appreciation for the value of hard work and self-sufficiency. This can further reinforce the culture of dependence on begging, as individuals may come to rely on handouts rather than pursuing more sustainable and self-sufficient forms of income generation.

**Duration:** This impact will be immediate

**Extent:** The extent will be spread across the local community

**Magnitude:** The magnitude of this impact is low.

**Probability:** The probability of occurrence is

**Potential Significance:** The significance of this impact is low but can be reduced to considerably lower with the implementation of appropriate mitigation measures

| Nature: Tourism-related dependence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Longterm (4)       | Medium Term (3) |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | low (4)            | Minor (2)       |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Medium (3)         | Improbable (1)  |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Low (30)           | Low (7)         |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts.</li> <li>2. To avoid over-reliance on tourism-related activities, it is important to develop a diversified economy and promote alternative livelihoods that are compatible with the local communities' cultural and environmental values. This could include initiatives such as sustainable agriculture, small business development, and cultural tourism that promotes the Host community's traditional skills and knowledge and those of the local communities.</li> <li>3. Partnership and Collaboration: Partnering with local organizations that work with homeless individuals can create a collaborative approach to supporting those in need. This can be done by establishing relationships with these organizations and working together to create effective solutions.</li> <li>4. Referral Networks: Visitor information centers can establish referral networks with local organizations to ensure that individuals who are in need of assistance are connected with the appropriate resources.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.15 Marriage and sexual norms decay

Marriage is an important institution in Host community culture, and it is seen as a way to strengthen family ties and build alliances between different clans. Traditionally, marriages were arranged by parents and elders, and the bride's family was expected to provide a dowry to the groom's family. Polygamy was also common among wealthy men, although it has



become less common in recent years. Divorce was traditionally frowned upon, but it is becoming more common in modern times.

The Host community people's traditional marriage practices, just like majority of the other locals involves the payment of bride-price or dowry, which is a significant part of their cultural heritage. The local people's traditional marriage practices are already changing due to the influence of the outside world, including government policies and development projects. The Host community women are more likely to participate in the cash economy and the practice of polygamy is declining.

The establishment of visitor information centers could bring more outsiders into the local communities, which could have various impacts on their marriage norms. For instance, it could increase the demand for labor, leading to the migration of young local men and women to work in the visitor information centers. This could, in turn, affect their traditional marriage practices, as young men and women may have fewer opportunities to meet and marry within their community.

On the other hand, the establishment of visitor information centers could also create economic opportunities for the Locals people, leading to increased financial independence and greater flexibility in their marriage practices. For example, if the local women are employed in the visitor information centers, they may have more leverage in their marital relationships and may be able to negotiate better terms in the payment of bride-price or dowry.

The influx of visitors to the Central Forest Reserve could lead to increased interaction between the local people and those from outside their community. This could lead to changes in social norms and values, and may result in the adoption of new cultural practices related to marriage and sexuality. For example, exposure to visitors who have different attitudes towards gender roles and sexual behavior could lead to the locals re-evaluating their own beliefs and practices in these areas.

Duration: This impact will be permanent

Extent: The extent will be local.

Magnitude: The magnitude of this impact is high.

Probability: The probability of occurrence is low

Potential Significance: The significance of this impact is moderate but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Marriage and sexual norms decay                                                                                                                                                                                                                                                                                                                                                        |                    |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                  | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                | Permanent (5)      | Medium term (3) |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                               | High (8)           | Minor (2)       |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                             | Medium (3)         | Improbable (1)  |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                           | Moderate (45)      | Low (7)         |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                           | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                           | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                        | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                               | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> </ol> |                    |                 |

|                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Efforts could be made to provide educational and awareness-raising programs for visitors and staff about the cultural practices and beliefs of the Host community and other in indigenous groups, including those related to marriage and sexuality |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                        |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                          |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.16 Child rearing and family life

The host community place great importance on family and community, and family members are expected to support and care for each other. Traditionally, extended families lived together in large households, with each family member playing a specific role in maintaining the household and contributing to the family's welfare. Men were responsible for providing food and shelter, while women were responsible for cooking, cleaning, and caring for children.

The establishment of VICs in the Central Forest Reserve could potentially affect the Host community's family life in several ways. Firstly, increased tourism and the associated economic opportunities could potentially lead to changes in traditional family structures and dynamics. For example, access to money and resources may change the balance of power within families, or lead to changes in traditional gender roles and responsibilities.

Secondly, the establishment of VICs could potentially affect the community's traditional systems of child-rearing and education. The host community traditionally have a strong emphasis on oral tradition, with knowledge and skills passed down through generations via storytelling and experiential learning. However, the introduction of formal education systems and the influence of Western culture could potentially lead to a decline in the importance of traditional knowledge and practices in child-rearing and education.

**Duration:** This impact will be permanent

**Extent:** The extent will be local

**Magnitude:** The magnitude of this impact is moderate

**Probability:** The probability of occurrence is high

**Potential Significance:** The significance of this impact is moderate but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Child rearing and family life                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Permanent (5)      | Medium term (3) |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Moderate (6)       | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | High (4)           | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Moderate (52)      | Low (18)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Efforts could be made to ensure that economic opportunities generated by tourism are distributed in a way that is compatible with the locals', including the Host community's traditional values and practices.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.17 Power balance shift

The establishment of visitor information centers in Budongo Central Forest Reserve may result in power imbalances in the local community. This is because tourism development may reinforce existing power imbalances between local communities and external actors, such as tour operators, governments, and NGOs.

Another potential impact of the establishment of VICs is that it could change the balance of power within the Host community leadership structure. Increased tourism and the associated economic opportunities could potentially lead to changes in traditional systems of governance, with new sources of power emerging and potentially leading to conflicts and tensions within the community.

Additionally, the introduction of formal education systems and the influence of Western culture could potentially lead to changes in traditional systems of leadership and decision-making. For example, the younger generation of Host community who receive formal education may question the authority of traditional leaders, leading to conflicts and a weakening of traditional governance structures.

Furthermore, the establishment of VICs could potentially lead to conflicts between the locals and other communities or stakeholders involved in the management of the Forest Reserve. The establishment of VICs could potentially exacerbate tensions between the local community and technical personnel at the VIC's, particularly if the Host community feel excluded from decision-making processes or if their traditional knowledge and practices are not respected.

Duration: This impact will be permanent

Extent: The extent will be local but can be restricted to the site.

Magnitude: The magnitude of this impact is very high.

Probability: The probability of occurrence is High.

Potential Significance: The significance of this impact is high but can be reduced to low with the implementation of appropriate mitigation measures.

| Nature: Power balance shift                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Local (2)          | Local (2)       |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Permanent (5)      | Short term (2)  |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Very high (10)     | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | High (4)           | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | High (68)          | Low (16)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Efforts could be made to promote the importance of traditional leadership and governance systems. This could involve working with the Host community to integrate traditional systems of governance into formal decision-making processes, or supporting the development of programs that promote the importance of traditional knowledge</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |

**Residual impacts:** None

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.18 Healing systems

Traditional healing practices play an important role in Host community culture. Herbal medicine is commonly used to treat a variety of ailments, and traditional healers are highly respected members of the community. Spiritual beliefs also play a role in healing, and traditional healers often use prayer and ritual to help their patients. In addition to traditional healing practices, modern medicine is also widely available in Host community.

One potential impact of the establishment of VICs is that it could disrupt traditional systems of healing and medicine for the Host community. Increased tourism and associated development could potentially lead to habitat destruction and loss of traditional medicinal plants, affecting the Host community's ability to access the resources they need for their healing practices. Furthermore, the establishment of Western-style healthcare facilities and the influence of Western medicine could potentially lead to a decline in the importance of traditional healing practices.

Duration: This impact will be immediate

Extent: The extent will be local but can be restricted to the site

Magnitude: The magnitude of this impact is low

Probability: The probability of occurrence is medium

Potential Significance: The significance of this impact is low but can be made even lower with the implementation of appropriate mitigation measures

| Nature: Healing systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Local (2)          | Site (1)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Longterm (4)       | Longterm (4)    |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Low (4)            | Minor (2)       |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Low (2)            | Improbable (1)  |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Low (20)           | Low (7)         |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Irreversible       | Irreversible    |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                | Yes             |
| Can impacts be mitigated?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Involve the Host community in establishing herbal demonstration sites outside the Forest Reserve</li> <li>3. Efforts could also be made to promote sustainable use of medicinal plants and to support the conservation of traditional healing practices through protecting natural resources and encouraging collaboration between traditional and modern healers.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.19 Class division and conflict

One potential impact of the establishment of VICs is that it could lead to a divide between those Host community who benefit from tourism-related opportunities and those who do not. Increased tourism may bring economic opportunities for some members of the Host

community, but it could also create a divide between those who are able to access these opportunities and those who are not.

Furthermore, the establishment of VICs could potentially lead to conflicts between different social groups within the community and other communities. Those who are employed in the tourism sector or have businesses that cater to tourists may have higher incomes than those who do not. This could lead to resentment and jealousy between the two groups, creating a division within the community. For example, increased economic opportunities may lead to conflicts between traditional leaders and young working people who seek more modern and individualistic lifestyles contrary to the communal way of living. These tensions could potentially lead to a divide between different social groups within the community.

**Duration:** This impact will be immediate

**Extent:** The extent will be local but can be restricted to the site

**Magnitude:** The magnitude of this impact is very high considering the broadness of the ecological impact of invasive species

**Probability:** The probability of occurrence is low

**Potential Significance:** The significance of this impact is moderate but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Class division and conflict                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Longterm (4)       | Longterm (4)    |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Very high (10)     | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | High (4)           | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | High (64)          | Low (18)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. The local communities shall be fairly compensated for their participation in tourism initiatives, including revenue-sharing schemes and fair wages for employees.</li> <li>3. Efforts could also be made to ensure that economic opportunities are distributed fairly and that all members of the local community have access to these opportunities.</li> <li>4. Efforts could be made to promote cultural awareness and understanding between different social groups within the community and the other affected communities</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.20 Commercialization of Culture

The commercialization of Host community culture could potentially damage its original fabric and undermine its authenticity. The Host community have a unique cultural heritage that has been shaped by their traditional way of life, which includes their spiritual and social practices. However, the commercialization of their culture may lead to a distortion of their traditional practices, and may even lead to the loss of some of their cultural practices altogether.



One potential impact of commercialization is that it may lead to the commodification of Host community culture, whereby their traditions and practices are marketed and sold to tourists without due consideration for their cultural significance. This could lead to a loss of cultural authenticity, as well as a loss of control over how their culture is represented and shared with others.

Furthermore, the commercialization of Host community culture may lead to the loss of their traditional practices, as members of the community may shift away from their traditional way of life in order to cater to the demands of the tourism industry. This could lead to a decline in the importance of traditional practices and a loss of cultural heritage.

Duration: This impact will be permanent

Extent: The extent will be local but can be restricted to the site

Magnitude: The magnitude of this impact is very high

Probability: The probability of occurrence is high

Potential Significance: The significance of this impact is high but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Commercialisation of culture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Permanent (5)      | Medium term (3) |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Very high (10)     | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | High (4)           | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | High (68)          | Low (16)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Design and implement activities that take into account the need for integrating conservation friendly cultural values of the local people into PA management Planning and the management of the protected areas where possible</li> <li>3. The Proponent Shall respect the intellectual property rights of the creators and custodians of cultural products.</li> <li>4. Efforts could also be made to ensure that the commercialization of local culture is done in a responsible and sustainable manner like Cultural sensitivity training</li> <li>5. It is important to ensure that their cultural heritage is respected and protected. This could involve working with the locals to identify and protect important cultural practices and traditions</li> <li>6. Efforts could be made to empower the local community to control the representation and sharing of their cultural heritage.</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.21 Cultural preservation

This refers to the protection and promotion of a community's cultural heritage, including its language, customs, beliefs, practices, and artifacts. In the case of the community around Budongo Central Forest Reserve, a visitor information center can play a significant role in preserving and promoting their culture.

Through the visitor information center, tourists can learn about the Local community's unique way of life, history, and traditions. This can include exhibits on traditional crafts, music, dance, and storytelling. By educating tourists about the Host community culture, the visitor information center can increase awareness and appreciation for the community and their contributions to the region's cultural heritage.

Additionally, the visitor information center can work with the community to document and preserve their cultural heritage for future generations. This can involve collecting and archiving traditional stories, songs, and dances, as well as preserving traditional crafts and artifacts. By preserving the Host community culture, the visitor information center can help ensure that the community's unique identity and history are not lost over time.

**Duration:** This impact will be immediate

**Extent:** The extent will be local

**Magnitude:** The magnitude of this impact is very high

**Probability:** The probability of occurrence is high

**Potential Significance:** The significance of this impact is moderate and can be enhanced.

| Nature: Cultural Preservation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Without enhancement | With enhancement |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Local (2)           | Local (2)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Medium-term (3)     | Long-term (4)    |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | High (8)            | Very High (10)   |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | High (4)            | Definite (5)     |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Moderate (52)       | High (80)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Positive            | Positive         |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Irreversible        | Irreversible     |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No                  | No               |
| <b>Can impacts be enhanced?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                 |                  |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Mobilize and support the Host community to engage in tourism activities</li> <li>3. Documentation: Documenting cultural heritage through photography, videography, and written records can help ensure that it is preserved for future generations. This can also include the creation of archives or digital databases.</li> <li>4. Sustainable tourism practices that respect cultural heritage can help support its preservation. This can include visitor education programs, responsible tourism practices, and the development of tourism products that promote cultural heritage.</li> </ol> |                     |                  |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                  |
| <b>Residual impacts:</b> <ol style="list-style-type: none"> <li>1. Heritage tourism can have economic benefits. However, it is important to ensure that tourism activities are sustainable and do not cause harm to the cultural heritage being preserved.</li> <li>2. Preserving cultural heritage can provide valuable educational and research opportunities. For example, archaeological sites can provide insights into past societies and cultures.</li> <li>3. Cultural heritage sites often have significant environmental value as well, and preserving them can help protect ecosystems and biodiversity.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                       |                     |                  |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.22 Community development

Firstly, a visitor information center can help create economic opportunities for the Local community. By showcasing their handicrafts and traditional products, the center can attract tourists interested in purchasing authentic souvenirs. Additionally, the center can provide employment opportunities for members of the community, such as tour guides, hospitality staff, and souvenir sellers. This can help generate income for the Local community and contribute to their economic development.

Secondly, a visitor information center can help build a sense of community pride and identity. By showcasing the Local community's culture and history, the center can help community members develop a greater sense of ownership and belonging. This can foster a greater sense of community cohesion and a willingness to work together towards common goals.

Finally, a visitor information center can serve as a hub for educational and cultural activities, which can promote community development. For example, the center can host workshops on traditional crafts or music, or organize events to celebrate important cultural festivals. By providing opportunities for community members to come together and share their knowledge and skills, the center can help strengthen social ties and build a sense of community solidarity.

Duration: This impact will be immediate

Extent: The extent will be local

Magnitude: The magnitude of this impact is moderate

Probability: The probability of occurrence is high

Potential Significance: The significance of this impact is moderate and can be enhanced to high

| Nature: Community Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Without enhancement | With enhancement |
| Extent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Local (2)           | Local (2)        |
| Duration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Medium-term (3)     | Long-term (4)    |
| Magnitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Moderate (6)        | Very High (10)   |
| Probability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | High (4)            | Definite (5)     |
| Significance*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Moderate (44)       | High (80)        |
| Status (positive or negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Positive            | Positive         |
| Reversibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Irreversible        | Irreversible     |
| Irreplaceable loss of resources?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No                  | No               |
| Can impacts be enhanced?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes                 |                  |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Create and provide gender balanced employment opportunities such as tour guides, porters, boundary management</li> <li>3. Prioritize local community members for employment opportunities in activities within the protected areas, such as restoration planting, removal of invasive species, and infrastructure construction;</li> <li>4. For ecotourism activities, prioritize local community member's employment as tour guides considering their unique local and cultural knowledge</li> </ol> |                     |                  |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                  |
| <b>Residual impacts:</b> <ol style="list-style-type: none"> <li>1. Community development initiatives can help increase civic engagement and empowerment by giving community members a voice in decision-making processes. This can help build stronger, more participatory democracies.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                  |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

### 8.3.23 Enhancing education and awareness

This is another positive social impact that a visitor information center can bring to the local community around Budongo Central Forest Reserve

Firstly, a visitor information center can provide educational resources and activities to both tourists and community members. This can include interactive exhibits, informative displays, and guided tours that offer insights into the history, culture, and natural environment of the region. By providing this educational content, the center can help visitors gain a deeper understanding and appreciation of the Local community's way of life, as well as the importance of conservation and sustainable tourism practices.

Secondly, the center can serve as a platform for raising awareness about issues relevant to the Local community. For example, the center can organize workshops and talks on topics such as human rights, health, and environmental conservation. By addressing these issues, the center can help empower community members with the knowledge and skills they need to advocate for their own well-being.

Finally, the visitor information center can also serve as a space for cultural exchange and dialogue. By providing opportunities for tourists and community members to interact and learn from one another, the center can help build bridges between different cultures and foster mutual respect and understanding. This can contribute to a more harmonious and inclusive tourism industry, and help reduce negative social and environmental impacts associated with tourism.

Duration: This impact will be immediate

Extent: The extent will be local

Magnitude: The magnitude of this impact is moderate

Probability: The probability of occurrence is high

Potential Significance: The significance of this impact is high but can be reduced to low with the implementation of appropriate mitigation measures

| Nature: Enhancing education and awareness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Without enhancement | With enhancement |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Local (2)           | Local (2)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Medium-term (3)     | Long-term (4)    |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Moderate (6)        | Very High (10)   |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | High (4)            | High (4)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Moderate (44)       | High (64)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Positive            | Positive         |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Irreversible        | Irreversible     |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No                  | No               |
| <b>Can impacts be enhanced?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes                 |                  |
| <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Technology can be a powerful tool for enhancing education and awareness. VICs can use technology to provide interactive displays, virtual tours, and other multimedia experiences that help visitors learn about local culture and history in an engaging way.</li> <li>3. VICs can enhance their educational offerings by collaborating with local experts and organizations, such as historians, archaeologists, and cultural organizations. This can help ensure that VICs are providing accurate and comprehensive information to visitors</li> </ol> |                     |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. VICs shall provide accurate and up-to-date information, as well as high-quality educational materials such as brochures, maps, and multimedia displays.                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Residual impacts:</b> <ol style="list-style-type: none"> <li>1. Education and awareness can help promote the preservation of cultural heritage by raising awareness of its importance and value, and by encouraging community members to take an active role in its preservation.</li> <li>2. Education and awareness can also promote enhanced social justice by raising awareness of social inequalities, promoting understanding and empathy, and encouraging community members to take action to address social justice issues.</li> </ol> |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

## 8.4 Impacts from the decommissioning phase

### 8.4.1 Occupational Health and Safety risks

During the decommissioning phase, the workers will be exposed to several OHS risks as they conduct their duties. The table below outlines OHS risks staff are likely to face during the decommissioning phase.

| Hazard                                                                                                                                                                                                                                                                                                                                                                                                       | Risks                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ergonomic hazards</b><br>These will occur when the nature of work, body positions and working conditions put a strain on the body. They may include frequent heavy lifting, poor posture; incorrectly adjusted workstations and chairs; awkward and repetitive movement; vibration; temperature; frequent use of excessive force.                                                                         | Musculoskeletal disorders (MSDs) including Hand-arm vibration syndrome (HAVS), Carpal Tunnel Syndrome (CTS), Herniated discs, spontaneous coronary artery dissection (SCAD)                             |
| <b>Noise</b><br>Exposure to excessive noise during decommissioning will affect the contractors. The National Environment (Noise Standards and Control) Regulations, 2003 and the National Institute for Occupational Safety and Health (USA) establish 85 dBA as the threshold exposure limit for 8 hours. It is anticipated that the noise levels during decommissioning will be over the permissible limit | Noise-Induced Hearing Loss (NIHL)<br>Emotional and cognitive annoyance<br>Hypertension<br>Depression<br>Anxiety<br>Stress cardiomyopathy (Takotsubo syndrome)<br>Inefficiency<br>Impaired concentration |
| <b>Slips, trips and falls</b><br>The decommissioning teams may suffer injuries when they trip over objects or slip on slippery surfaces. The main causes could be uneven surfaces, unstable gangways, and misplaced objects.                                                                                                                                                                                 | Cuts<br>Fractures<br>Dislocations<br>Bruises                                                                                                                                                            |
| <b>Fire</b><br>A fire incident will pose several health and safety risks to all workers at the decommissioning site at the time of occurrence.                                                                                                                                                                                                                                                               | Burns<br>Suffocation<br>Death                                                                                                                                                                           |
| <b>Electricity</b><br>Electric shocks either during uninstallation of electrical equipment, operation of power tools and exposure to bare wires could occur during decommissioning.                                                                                                                                                                                                                          | Burns<br>Electrical shocks<br>Fire<br>Death                                                                                                                                                             |
| <b>Equipment and machinery</b><br>Operation of NRMM and power tools will also pose risks to the workers especially when said equipment is unguarded, faulty or poorly maintained. User inattention is also a major cause of injuries during the operation of machinery.                                                                                                                                      | Cuts<br>Burns<br>Electric shocks<br>Sore eyes                                                                                                                                                           |
| <b>Chemical agents</b><br>Exposure to chemical agents will also pose risks to the decommissioning crew. The duration and level of exposure are important factors in the severity of the incident. Corrosives such as                                                                                                                                                                                         | Dermatitis<br>Skin irritation<br>Eyes, Nose and Mouth irritation<br>Asphyxiation                                                                                                                        |



| Hazard                                                                                                                                                                                                                       | Risks                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| caustic soda, asphyxiants such as CO <sub>2</sub> and flammables are some of the potentially hazardous substances workers may be exposed to                                                                                  | Cancer                                                                                       |
| <b>Stress</b><br>Workers may also face several work-related psychological risks. The main causes can be bullying, harassment, workplace violence, or strenuous tasks.                                                        | Increased health risks to the cardiovascular system<br>Depression<br>Inefficiency<br>Suicide |
| <b>Working at a height</b><br>Decommissioning crews working in elevated positions during demolition and uninstallations are at risk of falling. Depending on the height and the landing, the risks range from minor to fatal | Bruises<br>Fractures<br>Death                                                                |

**Duration:** This impact will be immediate during the decommissioning phase

**Extent:** The impact will be restricted mainly to the site

**Magnitude:** The magnitude of the Occupational Health and Safety risks is very high considering the consequences can be fatal

**Probability:** Occupational Health and Safety risks are inherent parts of decommissioning work and their probability of occurrence is definite

**Potential Significance:** The significance of this impact is high but can be reduced to Moderate with the implementation of the proposed mitigation measures

| Nature: Occupational Health and Safety risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Site (1)           | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Very high (10)     | Moderate (6)    |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Definite (5)       | Definite (5)    |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | High (60)          | Moderate (40)   |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Irreversible       | Irreversible    |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes                | Yes             |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</li> <li>The decommissioning crews shall be inducted and trained on the safety measures and guidelines and observed while at the site</li> <li>All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> <li>avoid the risk of fire;</li> <li>control quickly and efficiently any outbreak of fire;</li> <li>bring about a quick and safe evacuation of persons</li> </ul> </li> <li>Smoking shall be prohibited and "No Smoking" notices be prominently displayed in all appropriate locations within the subject site</li> <li>Fire-extinguishing equipment shall be properly maintained and inspected at suitable intervals by a competent person. Access to fire-extinguishing equipment such as portable extinguishers and connections for hoses shall be kept clear at all times.</li> <li>Provision of appropriate PPE to all workers.</li> <li>As far as practicable, guard rails and toe boards in accordance with national laws and regulations shall be provided to protect workers from falling from elevated workplaces. Wherever the guard rails and toe-boards cannot be provided: <ul style="list-style-type: none"> <li>adequate safety nets or safety sheets shall be erected and maintained; or</li> <li>adequate safety harnesses shall be provided and used</li> </ul> </li> </ol> |                    |                 |

|                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------|
| <b>Cumulative impacts:</b> None                                                                                            |
| <b>Residual impacts:</b> Occupational health and safety risks and hazards may lead to physical impairment or loss of lives |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

#### 8.4.2 Waste generation

equipment is uninstalled and structures are demolished. Waste streams generated at the site could also include e-waste from obsolete machinery, cables, circuit boards and other electronic materials.

Demolition waste, similar to solid waste, if improperly managed poses significant environmental and public health risks at the point of generation and disposal sites. It can cause sedimentation in waterways when carried by stormwater runoff or when deposited in wetlands; affecting the ecological and hydrological functions of these systems. Electronic Waste (e-waste) contains hazardous substances such as lead, mercury, beryllium and brominated flame retardants. E-waste shall be handled separately from other demolition waste streams; Landfilling, incineration and open burning of e-waste generate Persistent Bio-accumulative Toxins (PBTs). Uganda has a very limited capacity for collecting and safely disposing of e-waste.

Duration: This is an immediate impact

Extent: The extent of this impact is local but can be limited to the site

Magnitude: The magnitude of this impact is high

Probability: The probability of this occurring is high

Potential Significance: The significance of this impact is moderate

| Nature: Waste generation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Without mitigation | With mitigation |
| <b>Extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Local (2)          | Site (1)        |
| <b>Duration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Immediate (1)      | Immediate (1)   |
| <b>Magnitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | High (8)           | Low (4)         |
| <b>Probability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | High (4)           | Low (2)         |
| <b>Significance*</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Moderate (40)      | Low (12)        |
| <b>Status (positive or negative)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Negative           | Negative        |
| <b>Reversibility</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reversible         | Reversible      |
| <b>Irreplaceable loss of resources?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes                | No              |
| <b>Can impacts be mitigated?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                |                 |
| <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements at the time of decommissioning</li> <li>2. Establish adequate gender-segregated sanitary facilities for all workers at the decommissioning site</li> <li>3. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site</li> <li>4. Hire a licensed hazardous waste handler to remove and dispose of any hazardous substances</li> <li>5. Train the decommissioning workers on proper waste management practices</li> <li>6. Cover trucks ferrying debris from the site to curtail fugitive emissions during transportation</li> <li>7. Site stockpiles of debris away from stormwater paths</li> </ol> |                    |                 |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |
| <b>Residual impacts:</b> None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

#### 8.4.3 Visual impacts

Dependent on the circumstances that may lead to the decommissioning of the VIC, the demolition or the abandonment of the buildings will deteriorate the aesthetic quality at the site.

The generation of demolition waste and overburden will also contribute to the deterioration of the aesthetics of the site.

**Duration:** This is an immediate impact

**Extent:** The extent of this impact will be limited to the site

**Magnitude:** The magnitude of this impact is low

**Probability:** The probability of this occurring is definite during the decommissioning phase

**Potential Significance:** The significance of this impact is moderate

| Nature: Visual impacts                                                                                                                                                                                                                                |                    |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|
|                                                                                                                                                                                                                                                       | Without mitigation | With mitigation |
| Extent                                                                                                                                                                                                                                                | Site (1)           | Site (1)        |
| Duration                                                                                                                                                                                                                                              | Immediate (1)      | Immediate (1)   |
| Magnitude                                                                                                                                                                                                                                             | Moderate (6)       | Low (4)         |
| Probability                                                                                                                                                                                                                                           | High (4)           | Low (2)         |
| Significance*                                                                                                                                                                                                                                         | Moderate (32)      | Low (12)        |
| Status (positive or negative)                                                                                                                                                                                                                         | Negative           | Negative        |
| Reversibility                                                                                                                                                                                                                                         | Reversible         | Reversible      |
| Irreplaceable loss of resources?                                                                                                                                                                                                                      | Yes                | No              |
| Can impacts be mitigated?                                                                                                                                                                                                                             | Yes                |                 |
| Mitigation:                                                                                                                                                                                                                                           |                    |                 |
| 1. Completely fence off the site during the decommissioning phase<br>2. Start restoration activities as soon as it is reasonable to restore the visual appeal of the site<br>3. Schedule decommissioning for periods when the visitor numbers are low |                    |                 |
| Cumulative impacts:                                                                                                                                                                                                                                   |                    |                 |
| Residual impacts:                                                                                                                                                                                                                                     |                    |                 |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

#### 8.4.4 Restoration of the disturbed environment

The decommissioning of the VIC will allow for the restoration of the disturbed environment back to its pristine state. This will lead to the restoration and probable enhancement of the ecological function including acting as a habitat for terrestrial and avian fauna, enhancing species richness etc. The restoration of the disturbed site may even lead to the resurgence of some species populations.

**Duration:** This is an immediate impact

**Extent:** The extent of this impact will be limited to the site

**Magnitude:** The magnitude of this impact is high

**Probability:** The probability of this occurring is definite during the decommissioning phase

**Potential Significance:** The significance of this impact is moderate

| Nature: Restoration of the disturbed environment |                     |                  |
|--------------------------------------------------|---------------------|------------------|
|                                                  | Without enhancement | With enhancement |
| Extent                                           | Site (1)            | Site (1)         |
| Duration                                         | Immediate (1)       | Immediate (1)    |
| Magnitude                                        | Moderate (6)        | High (8)         |
| Probability                                      | Medium (3)          | Definite (5)     |
| Significance*                                    | Low (24)            | Moderate (50)    |
| Status (positive or negative)                    | Negative            | Negative         |
| Reversibility                                    | Reversible          | Reversible       |
| Irreplaceable loss of resources?                 | Yes                 | No               |
| Can impacts be enhanced?                         | Yes                 |                  |
| Enhancement:                                     |                     |                  |

|                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. The restoration shall fully compensate for the loss in biodiversity as a result of project implementation as per the National Environment Act, 2019 or other relevant legislation at the time of decommissioning |
| 2. The restoration shall reinstate the site to its pristine state, to the greatest extent possible                                                                                                                  |
| <b>Cumulative impacts:</b> None                                                                                                                                                                                     |
| <b>Residual impacts:</b> None                                                                                                                                                                                       |

\*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

Table 8.3: Summary of anticipated impacts after implementation of mitigation and / enhancement measures

| Ref                | Impact                                                | Significance | Reversibility | Probability | Magnitude | Duration    | Status |
|--------------------|-------------------------------------------------------|--------------|---------------|-------------|-----------|-------------|--------|
| Construction Phase |                                                       |              |               |             |           |             |        |
| 8.2.1              | Economic spill over                                   | Moderate     | Irreversible  | High        | High      | Immediate   | +Ve    |
| 8.2.2              | Technological transfer                                | Moderate     | Irreversible  | High        | Moderate  | Medium Term | +Ve    |
| 8.2.3              | Introduction of invasive species                      | Low          | Irreversible  | Low         | Low       | Immediate   | -Ve    |
| 8.2.4              | Impact of dust                                        | Low          | Reversible    | Medium      | Low       | Immediate   | -Ve    |
| 8.2.5              | Occupational Health and Safety risks                  | Moderate     | Irreversible  | Definite    | Moderate  | Immediate   | -Ve    |
| 8.2.6              | Solid waste generation                                | Low          | Reversible    | Low         | Low       | Immediate   | -Ve    |
| 8.2.7              | Climate change impacts                                | Low          | Irreversible  | Medium      | Low       | Immediate   | -Ve    |
| 8.2.8              | Visual impacts                                        | Low          | Reversible    | Definite    | Low       | Immediate   | -Ve    |
| 8.2.9              | Impacts on water resources                            | Low          | Reversible    | Low         | Minor     | Immediate   | -Ve    |
| 8.2.10             | Fire hazards                                          | Low          | Irreversible  | Low         | Low       | Immediate   | -Ve    |
| 8.2.11             | Impacts of an increase in traffic                     | Moderate     | Irreversible  | Definite    | Low       | Immediate   | -Ve    |
| 8.2.12             | Impact on ambient noise                               | Moderate     | Irreversible  | Definite    | Moderate  | Immediate   | -Ve    |
| 8.2.13             | Impacts related to population influx                  | Low          | Reversible    | Medium      | Minor     | Immediate   | -Ve    |
| 8.2.14             | Loss of vegetation and terrestrial habitat alteration | Low          | Irreversible  | Definite    | Low       | Immediate   | -Ve    |
| 8.2.15             | Poaching                                              | Low          | Irreversible  | Improbable  | Minor     | Immediate   | -Ve    |
| 8.2.16             | Animal abuse                                          | Low          | Irreversible  | Improbable  | Minor     | Immediate   | -Ve    |
| 8.2.17             | Illegal logging                                       | Low          | Irreversible  | Improbable  | Minor     | Immediate   | -Ve    |
| Operation Phase    |                                                       |              |               |             |           |             |        |
| 8.3.1              | Tourism boost                                         | Moderate     | Irreversible  | High        | High      | Long Term   | +Ve    |
| 8.3.2              | Enhanced visitor experience                           | High         | Irreversible  | Definite    | Very High | Long Term   | +Ve    |
| 8.3.3              | Socio-economic benefits                               | High         | Irreversible  | High        | High      | Long Term   | +Ve    |
| 8.3.4              | Security risks                                        | Low          | Irreversible  | Low         | Low       | Long Term   | -Ve    |
| 8.3.5              | Occupational Safety and Health risks                  | Moderate     | Irreversible  | Definite    | Low       | Long Term   | -Ve    |
| 8.3.6              | Fire risks                                            | Low          | Irreversible  | Low         | Low       | Long Term   | -Ve    |
| 8.3.7              | Community Health and Safety                           | Low          | Irreversible  | Low         | Low       | Long Term   | -Ve    |
| 8.3.8              | Solid waste generation                                | Low          | Reversible    | Low         | Low       | Long Term   | -Ve    |
| 8.3.9              | Climate change impacts                                | Low          | Irreversible  | Low         | Low       | Long Term   | -Ve    |
| 8.3.10             | Impacts on air quality                                | Low          | Reversible    | Medium      | Low       | Long Term   | -Ve    |
| 8.3.11             | Loss of cultural identity                             | Low          | Reversible    | Medium      | Low       | Long Term   | -Ve    |



| Ref                   | Impact                                   | Significance | Reversibility | Probability | Magnitude | Duration  | Status |
|-----------------------|------------------------------------------|--------------|---------------|-------------|-----------|-----------|--------|
| 8.3.12                | Oil and fuel spills                      | Low          | Irreversible  | Low         | Low       | Long Term | -Ve    |
| 8.3.13                | Traffic disruption                       | Low          | Reversible    | Low         | Low       | Long Term | -Ve    |
| Decommissioning Phase |                                          |              |               |             |           |           |        |
| 8.4.1                 | Occupational Health and Safety risks     | Moderate     | Irreversible  | Definite    | Moderate  | Immediate | -Ve    |
| 8.4.2                 | Waste generation                         | Low          | Reversible    | Low         | Low       | Immediate | -Ve    |
| 8.4.3                 | Visual impacts                           | Low          | Reversible    | Low         | Low       | Immediate | -Ve    |
| 8.4.4                 | Restoration of the disturbed environment | Moderate     | Reversible    | Definite    | High      | Immediate | +Ve    |

## 8.5 Cumulative effects

This assessment considers the cumulative effects with existing or future significant development schemes, or natural process on receptors and resources over time which is additive or interactive in nature

### 8.5.1 Method

The assessment methodology used in this chapter is adapted from the Rapid Cumulative Impact Assessment (RCIA) approach outlined in IFC's Good Practice Handbook: Cumulative Impact Assessment and Management, 2013. One of the key principles of cumulative impact assessment using this approach is to focus on Valued E&S Components (VECs), both for setting context of temporal and spatial boundaries to be considered and in assessing the significance of cumulative impacts.

The IFC good practice handbook outlines the following six steps to undertaking RCIA:

- Determine spatial and temporal boundaries;
- Identify VECs in consultation with effected communities and stakeholders;
- Identify all developments affecting VECs;
- Determine present condition of VECs;
- Assess cumulative impacts and evaluate their significance over predicted future conditions; and
- Design and implement (a) adequate strategies, plans, and procedures to manage cumulative impacts, (b) appropriate monitoring indicators, and (c) effective supervision mechanisms.

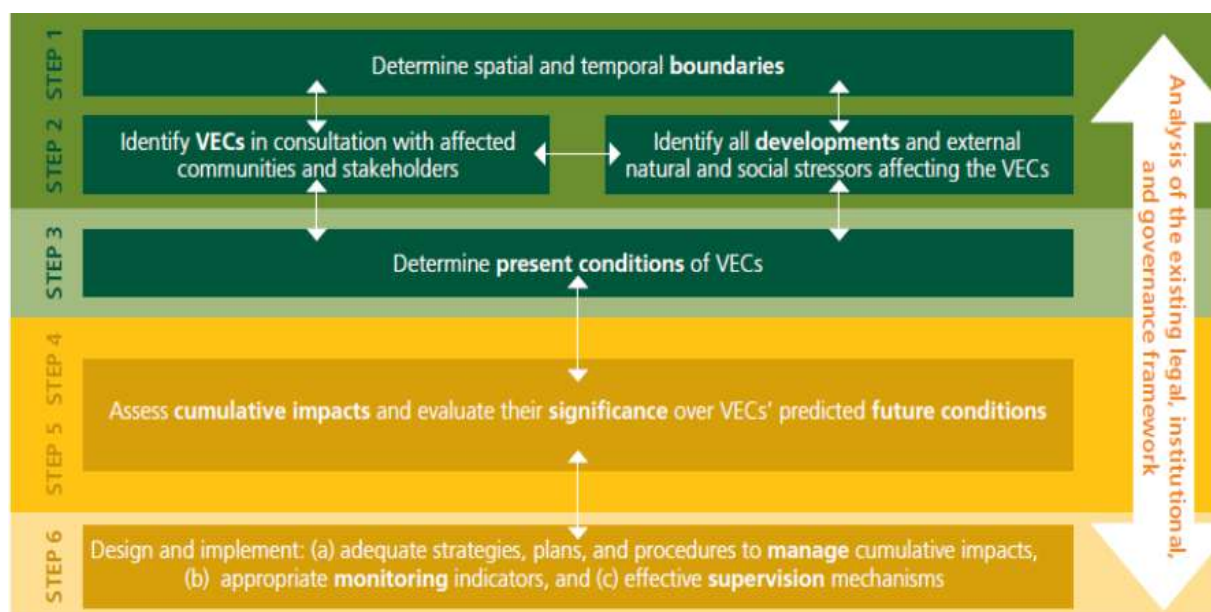


Figure 8.1: RCIA six step approach

Source: IFC, 2013

### 8.5.2 Environmental values

Environmental values have been drawn from the Terms of Reference, the stakeholder engagement conducted and baseline studies conducted during the EIS. The environmental values listed in Table 8.4 below therefore inevitably overlap with the critical matters discussed in detail elsewhere in this EIS. The current condition of environmental values (baseline studies) were studied extensively and the results of these studies presented in this EIS.

Table 8.4: Environmental values.

| Environmental Value | Terms of Reference and description for the VIC                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cultural Heritage   | The construction and operation of the project shall aim to ensure that the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.<br>Indigenous and non-Indigenous Cultural Heritage of the proposed project site have been extensively studied and recommendations made to protect the cultural heritage values of the property. |
| Flora and Fauna     | Matters of environmental significance are valued and appropriately safeguarded to support healthy and resilient ecosystems and ensure the sustainable, long- term conservation of biodiversity and local linkages, and the social, economic, cultural and environmental benefits it provides.                                                                                                           |
| Water quality       | Development is planned, designed, constructed and operated to protect environmental values of nearby waters and supports the achievement of water quality objectives.<br>Active management of water quality entering and leaving the property will avoid potential impacts on significant species (flora and fauna) and surrounding catchments.                                                         |
| Air                 | The development is planned, designed, constructed and operated to protect the environmental values of air.<br>The VIC will mitigate any impacts on air quality.                                                                                                                                                                                                                                         |
| Noise and Vibration | The development is planned, designed, constructed and operated to protect the environmental values of the acoustic environment.<br>The VIC will mitigate any impacts on the acoustic environment. Hours of construction and operation will follow the current legislation.                                                                                                                              |
| Waste Management    | Any waste transported, generated, or received as part of carrying out the activity is minimised and managed in a way that protects all environmental values.<br>The VIC will have an integrated waste management program to mitigate any potential impacts.                                                                                                                                             |

### 8.5.3 Existing external factors.

A search has been undertaken to identify external factors that could have the potential to result in cumulative effects with the Scheme, based upon their location and scale.

Below are the known significant external factors in the area:

#### 8.5.3.1 Other tourism development programs.

The ongoing tourism development programs implemented by Government MDAs and private entities will consolidate the operation of the VIC to boost the tourism sector. The NDP III is a development plan of Uganda that could significantly contribute to the cumulative impacts. Some of key goals and strategies related to the tourism sector in NDP III include Enhancing tourism infrastructure which emphasizes the development and improvement of tourism infrastructure such as airports, roads, accommodation facilities, and visitor centres to enhance accessibility and tourist experience, Diversifying tourism products that highlighted the importance of diversifying tourism offerings beyond traditional attractions, promoting niche markets like cultural tourism, ecotourism, adventure tourism, and community-based tourism and Marketing and promotion that emphasizes marketing and promotional activities to increase the visibility of Uganda as a tourist destination.

#### 8.5.3.2 Climate change

Climate change refers to long-term shifts in temperature patterns and weather conditions across the Earth's climate system. It is primarily driven by human activities, particularly the burning of fossil fuels (such as coal, oil, and natural gas) and deforestation, which release greenhouse gases into the atmosphere. These greenhouse gases, including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), trap heat and contribute to the greenhouse effect, causing the Earth's temperature to rise.

Climate change leads to a shift in temperature and precipitation patterns, affecting the distribution and composition of plant and animal species in the forest. These changes can result in habitat alteration and fragmentation, making the ecosystem more vulnerable.

### **8.5.3.3 Change in land use**

Land use changes can contribute to cumulative impacts by altering ecosystems, degrading natural resources, and affecting the overall environmental balance. Land use changes can increase cumulative impacts in the following ways:

**Urbanization and Infrastructure Development:** The conversion of natural land, such as forests, wetlands, or agricultural areas, into urbanized and developed areas can lead to several cumulative impacts. It can result in habitat loss, fragmentation, and destruction, reducing biodiversity and disrupting ecological processes. Urbanization also increases the demand for resources like water and energy, putting additional pressure on the environment.

**Agricultural Expansion:** The conversion of natural ecosystems, including forests and grasslands, into agricultural land to meet the growing demand for food and other agricultural products, can have cumulative impacts. It can lead to deforestation, soil degradation, water pollution, and loss of biodiversity, as mentioned earlier.

**Mining and Extractive Industries:** The extraction of minerals, oil, and gas through mining and other extractive activities can have significant cumulative impacts on the environment. It often involves land clearing, soil excavation, and the use of chemicals that can result in habitat destruction, soil degradation, water pollution, and disruption of ecosystems.

**Industrial Development:** The establishment of industries, factories, and manufacturing facilities can contribute to cumulative impacts through pollution, resource extraction, and waste generation. Industrial activities can release pollutants into the air, water, and soil, leading to environmental degradation and health risks for both humans and ecosystems.

**Infrastructure and Transportation:** The construction of roads, highways, railways, and other transportation infrastructure can fragment habitats, disrupt wildlife migration patterns, and contribute to habitat loss. It can also lead to increased pollution, noise, and disturbance, affecting local ecosystems and wildlife.

**Energy Production:** The development of energy production facilities, such as power plants and renewable energy installations, often requires large-scale land use changes. This can result in the clearing of natural vegetation, alteration of landscapes, and disruption of ecosystems, particularly in the case of hydropower dams or large-scale solar or wind farms.

### **8.5.3.4 Central Forest reserve management plans.**

The preparation of management plans for protected areas is a statutory requirement as government recognizes the importance of planning as a management tool. This plan is therefore aimed at providing the Forest Reserve management team with guidance towards sustainable management of the ecosystem as well as proper development of infrastructure and facilities. One way of promoting conservation of wildlife is through forming strategic partnerships with all stakeholders. Accordingly, management plans for wildlife-protected areas are prepared with full stakeholder participation. The preparation of this plan was through a multidisciplinary and consultative approach involving various stakeholders at community, district, national and international levels to ensure that all concerns were adequately addressed

Table 8.5 Predicted cumulative effects

| No | VEC's                             | Impact                                                                                                                                                        | Cumulative impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Predicted cumulative risk                      |
|----|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| 1. | Noise and Air Quality.            | Noise and air pollution resulting from increased human activity, vehicular movement and construction works.                                                   | The operations of the private operators bring more visitors and are anticipated to increase air and noise pollution within the project area of as vehicular movement increase.                                                                                                                                                                                                                                                                                                                      | Minor adverse effect which is not significant. |
| 2. | Flora and fauna                   | Habitat degradation<br>Disturbance from human activities (e.g. noise, artificial light, vibration, vehicular movement)<br>Pollution from effluents Siltation. | Global warming has the potential to cause impacts upon the flora and fauna in the vicinity. A shift in temperature and precipitation patterns, affects the distribution and composition of biodiversity in the park.<br><br>The activities and programs of private operators would also bring humans into increased contact with the flora and fauna, resulting in increased disturbance through the operations of these programs or activities.                                                    | Moderate adverse effect which is significant.  |
| 3. | Local communities and livelihoods | Direct employment generation<br>Improved Road access.                                                                                                         | Operations by private operators and other tourism programs are likely to result in significant employment provision, although the estimated numbers are not known. Without further information, a more detailed conclusion cannot be reached, however there is potential for communities around the VIC to be a source of employment for both the VIC and the other activities and programs which would result in beneficial impacts through improved economic opportunities for these communities. | Negligible effect which is not significant.    |
| 4. | Local and regional businesses     | Increased revenue for local and regional businesses and governments                                                                                           | Activities by Private entities and other programs could collaborate with local businesses within to cut costs involved in logistics causing the local business to grow                                                                                                                                                                                                                                                                                                                              | Moderate adverse effect which is significant.  |
| 5. | Groundwater.                      | Spillages and leaks of polluting substances due to improper disposal and management practices.                                                                | Appropriate management measures for the operations at the VIC would minimise the potential for pollution events to take place (such as oil traps). It is also assumed that the other activities or programs would have measures in place to minimise the potential for spillages to enter surface water bodies, such as oil traps.                                                                                                                                                                  | Minor adverse effect which is not significant. |
| 6. | Community Access Roads.           | Increased congestion due to construction traffic. Wear and tear                                                                                               | It is likely that vehicles for the respective programs or activities will use similar access routes for works in the vicinity.<br>This will also contribute to increased congestion on these roads, increasing travel time. Wear and tear of the roads is likely to increase, which has the potential to be a safety risk for drivers.                                                                                                                                                              | Moderate adverse effect which is significant.  |



#### **8.5.4 Recommendations for Addressing Cumulative Effects.**

The cumulative assessment identified recommendations to be taken forwards to minimise the effects from the proposed establishment of the VIC at the same time as other activities and programs in the vicinity.

Good inter-project communication between developers will be key to manage cumulative impacts which result from construction and operational impacts. A flexible approach to managing cumulative effects will be required, given the uncertainties associated with potential other schemes in the area. The key recommendations are:

- Coordinated approach between programs regarding the employment of local populations and the upskilling of workers if these programs are to be executed concurrently;
- Coordinated traffic management plans and community health and safety plans to take account of local populations schedules, project construction and operational schedules;
- Implementation of best practice visual mitigation measures during construction, particularly near sensitive receptors where cumulative effects could occur;
- Effective line of communication between developers and contractors to ensure that grievances can be shared between schemes and action taken where necessary;
- A coordinated analysis of cascade failure should be undertaken to assess potential impacts that a cascade failure may have;
- A coordinated monitoring programme for key environmental VECs, such as for air quality, noise, water quality, or biodiversity, and sharing of results so that appropriate actions can be coordinated between schemes; and
- A coordinated consultation programme with key environmental stakeholders to ensure any management measures or offsetting can be coordinated.

## **9.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN**

### **9.1 Introduction**

This plan has been prepared in accordance with the requirements of the National Environment Management Authority. This plan is being prepared to ensure effective management of the environment especially during the operational phase of the project. The plan aims to provide:

- An integrated plan for the comprehensive monitoring and control of impacts.
- Auditable commitments presenting practical, achievable strategies for management to ensure that environmental requirements are specified and complied with.

The Environmental and Social Management Plan (ESMP) defines a process through which management and the contractors will establish their commitment towards maintaining and improving the environment. To this, an Environmental and Social Management Policy must be laid out by the management.

#### **Suggested policy**

*The management of the VIC will protect the environment by ensuring that its activities do not contribute to environmental degradation. The management will lead by example in the national imperative of maintaining a clean and healthy environment. To this end, the Authority will strive to operate in a safe, responsible manner within the country's environmental standards to ensure a clean and healthy environment for employees and the wider society.*

- 1) All employees are expected to understand, promote and assist in the implementation of this policy. This can be done by training employees and management team, organising environmental protection fares to assist the management team as well as ordinary employees to be sensitive to the environmental character and vulnerabilities of the site and the potential of their routine activities impacting on the environment.
- 2) The ESMP also helps the proponent to review its activities and identify those that have a significant impact on the environment. This would involve familiarity with the provisions of the NEMA EIA certificate and other licences that may be acquired.
- 3) Put programmes in place to eliminate or reduce these impacts.

Monitoring programmes should be put in place for the effluent as well as the quality of the storm water to identify changes from the background, baseline conditions. The environmental management plan clearly identifies the mitigation actions to be taken, including development of drainage systems, air emissions control and waste disposal. Retaining the services of a third party monitor to carry out regularly scheduled sampling (e.g. monthly basis of the area during the various phases of the development would ensure negative impacts are identified and addressed in the earliest stages, thus preventing further deterioration of the environment. A monitoring programme designed for the construction phase of the project should focus on:

- a) Collecting data and providing ongoing feedback on the state of the environment in the affected areas;
- b) Looking for signs of soil erosion and runoff especially after significant rainfall;
- c) Assessing transportation, storage and disposal of construction materials;
- d) Assessing waste management practices;

The products of the ESMP will be;

- a) Specific targets and actions to reduce the impact of the development's activities on the environment;
- b) The establishment of a system of monitoring the activities of the development identified above.
- c) The data base, preferably digital of the development's activities and data collected to track the effect of the management programme.

- d) Increased awareness and knowledge of staff about the environmental impacts and the decisions and activities that they need to undertake and of the standards required by NEMA and any other lead agencies.
- e) A communications programme to encourage environmental stewardship among the workers, staff and management.

The outcome of the ESMP will be an improvement in and around the development.

## 9.2 Stakeholder Roles and Responsibilities

An all-inclusive network of stakeholders undertakes a key role and bear distinct responsibilities. These stakeholders form a complex yet highly organised network essential to the successful execution of the ESMP, which safeguards the project's adherence to environmental and social standards. These roles cover a wide range of activities, from project owners' commitment to financing and compliance, to supervising consultants' technical expertise, local council leaders' community engagement, district local governments' regulatory oversight, and regulatory authorities' vigilant environmental monitoring. The coordination of these stakeholders and their unwavering dedication to their responsibilities is integral to the sustained well-being of the project and the broader ecosystem it inhabits Table 9.1 below shows the parties involved and their different responsibilities.

Table 9.1: Parties involved and their responsibilities

| Party involved                            | Roles and Responsibility                                                                                                                                                                                                                                                     | Project Phase                                                                                                                         |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Project Owner (NFA)                       | <ul style="list-style-type: none"> <li>- Initiates and funds the project.</li> <li>- Ensures compliance with environmental and social standards.</li> <li>- Obtains necessary approvals and permits.</li> </ul>                                                              | <ul style="list-style-type: none"> <li>- Site Preparation and Construction</li> <li>- Operation</li> <li>- Decommissioning</li> </ul> |
| Supervising Consultant/Project Manager    | <ul style="list-style-type: none"> <li>- Provides oversight and technical expertise.</li> <li>- Ensures project activities align with environmental and social guidelines.</li> <li>- Conducts inspections and offers advice.</li> </ul>                                     | <ul style="list-style-type: none"> <li>- Site Preparation and Construction</li> </ul>                                                 |
| Local Council Leaders                     | <ul style="list-style-type: none"> <li>- Facilitate community engagement and communication.</li> <li>- Represent and address the interests and concerns of the local population.</li> <li>- Act as intermediaries between the community and project stakeholders.</li> </ul> | <ul style="list-style-type: none"> <li>- Site Preparation and Construction</li> <li>- Operation</li> <li>- Decommissioning</li> </ul> |
| District Local Governments                | <ul style="list-style-type: none"> <li>- Review and approve projects within their jurisdiction.</li> <li>- Ensure projects comply with local regulations.</li> <li>- May monitor and address environmental and social impacts within their districts.</li> </ul>             | <ul style="list-style-type: none"> <li>- Site Preparation and Construction</li> <li>- Operation</li> <li>- Decommissioning</li> </ul> |
| Regulatory Authorities (NEMA, MGLSD etc.) | <ul style="list-style-type: none"> <li>- Review and approve environmental impact assessments.</li> </ul>                                                                                                                                                                     | <ul style="list-style-type: none"> <li>- Site Preparation and Construction</li> <li>- Operation</li> <li>- Decommissioning</li> </ul> |

|  |                                                                                                                                                                                                                                     |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <ul style="list-style-type: none"> <li>- Monitor project compliance with national environmental and social standards.</li> <li>- Provide guidance and enforce regulations to protect the environment and social welfare.</li> </ul> |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

### 9.3 Environmental and Social Impact Management

#### 9.3.1 Construction phase

Proposed mitigation measures for minimizing, avoiding and eliminating the impacts during the construction phase of the proposed development are presented in tables 9.2 below.

Table 9.2: Construction phase management plan

| Ref.                            | Impact                                                          | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Monitoring Indicators                                                                                                                                                                                                                                                         | Monitoring Frequency | Resources & costs (USD)                               | Institutional Responsibility                                                                                                                                                                                        |
|---------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ENVIRONMENTAL SAFEGUARDS</b> |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                               |                      |                                                       |                                                                                                                                                                                                                     |
| 8.2.3                           | Introduction of invasive species                                | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All vehicles should be thoroughly cleaned before accessing the site.</li> <li>2. Manual control of invasive species shall be implemented at the site.</li> <li>3. Establish a monitoring and information system for invasive species to support planning and management.</li> <li>4. Landscaping and establishment of the arboretum shall use indigenous species</li> <li>5. The proponent shall enhance ongoing programs to combat invasive species within the CFR</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Records of invasive species sited and removed from the site<br><br>Records of plant species used in landscaping                                                                                                                                                               | Monthly              | Part of the CFR Management plan – implementation fees | Project manager (NFA)<br><br>Health Safety and Environment Manager - IFPA - CD project<br><br>Technical Service Providers (TSP)<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B') |
| 8.2.4                           | Impact of particulate, fugitive and vehicular exhaust emissions | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Scheduling construction activities for periods when wind speeds are low</li> <li>2. Employing dust suppression techniques like water sprinkling at the site</li> <li>3. Fencing the site to reduce wind-induced re-entrainment of dust particles</li> <li>4. Covering trucks hauling debris and excavation spoil to curtail dust emissions during transportation</li> <li>5. Selecting an appropriate disposal site such as to limit the distance travelled and disruption to the receptor communities</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Ambient air quality monitoring records<br><br>Random site inspections<br><br>Complaints log                                                                                                                                                                                   | Daily                | 2,000                                                 | Project manager (NFA)<br><br>Health Safety and Environment Manager - IFPA - CD project<br><br>Technical Service Providers (TSP)                                                                                     |
| 8.2.5                           | Occupational Health and Safety risks                            | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All excavation work and lifting shall be supervised by a competent person and operatives doing the work shall be given clear instructions;</li> <li>2. Sides of excavations shall be thoroughly inspected: <ul style="list-style-type: none"> <li>- daily, before each shift and after an interruption in work of more than one day;</li> <li>- after an unexpected fall to the ground;</li> <li>- after substantial damage to supports;</li> <li>- after heavy rain;</li> <li>- when boulder formations are encountered.</li> </ul> </li> <li>3. Sides of excavations where workers are exposed to danger from moving ground shall be made safe by sloping, shoring, portable shields or other effective means;</li> <li>4. A suitable housekeeping programme shall be established and continuously implemented at the site and it shall include provisions for: <ul style="list-style-type: none"> <li>- the proper storage of materials and equipment;</li> <li>- the removal of scrap, waste and debris at appropriate intervals</li> </ul> </li> <li>5. Loose materials which are not required for use shall not be placed or allowed to accumulate on the site to obstruct means of access to and egress from workspaces and passageways.</li> <li>6. Where necessary to prevent danger, guys, stays or supports shall be used or other effective precautions shall be taken to prevent the collapse of structures or parts of structures that are under construction</li> <li>7. As far as practicable, guardrails and toe boards in accordance with national laws and regulations shall be provided to protect workers from falling from elevated workspaces. Wherever the guard rails and toe-boards cannot be provided: <ul style="list-style-type: none"> <li>- adequate safety nets or safety sheets shall be erected and maintained, or</li> <li>- adequate safety harnesses shall be provided and used.</li> </ul> </li> <li>8. The site shall be hoarded off to prevent the entry of unauthorised persons. Visitors shall not be allowed access to the construction site unless accompanied by or authorised by a competent person and provided with the appropriate protective equipment.</li> </ol> | Records of incidents (accidents and near misses) at the construction site<br><br>The use of PPE at the construction site<br><br>Records of daily toolbox talks and workers' orientation<br><br>Presence of appropriate signage on-site<br><br>Presence of supervisors on-site | Monthly              | 3,000                                                 | EHSO (Contractor)<br><br>NEMA<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B')                                                                                                   |



| Ref.  | Impact                 | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Monitoring Indicators                                                                                                                                                                                                                                                                     | Monitoring Frequency | Resources & costs (USD) | Institutional Responsibility                                                                                                                                                                                  |
|-------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                        | 9. All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> <li>- avoid the risk of fire;</li> <li>- quickly and efficiently control any outbreak of fire;</li> <li>- bring about a quick and safe evacuation of persons</li> </ul> 10. Smoking shall be prohibited and "NO SMOKING" notices shall be prominently displayed in all appropriate locations within the subject site. Additionally, smoking zones shall be gazetted for those who intend to smoke.           11. Fire-extinguishing equipment shall be properly maintained and inspected at suitable intervals by a competent person. Access to fire-extinguishing equipment such as portable extinguishers and connections for hoses shall be kept clear at all times.           12. Provision of appropriate PPE to all workers.           13. All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site |                                                                                                                                                                                                                                                                                           |                      |                         |                                                                                                                                                                                                               |
| 8.2.6 | Solid waste generation | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements</li> <li>2. Recycle construction materials from the existing structures where possible</li> <li>3. Establish adequate gender-segregated sanitary facilities for all workers and visitors to the site</li> <li>4. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site</li> <li>5. Hire a licensed hazardous waste handler to remove and dispose of hazardous waste materials</li> <li>6. Train construction workers on proper waste management practices</li> <li>7. Cover trucks ferrying debris from the site to mitigate spillages during transportation</li> <li>8. Site stockpiles of debris away from stormwater paths</li> </ol>                                      | Records of solid waste disposed of<br><br>Presence of color coded waste bins on site.                                                                                                                                                                                                     | Daily                | 3,000                   | Project manager (NFA)<br><br>Health Safety and Environment Manager - IFPA - CD project<br><br>Technical Service Providers (TSP)<br><br>EHSO (Contractor)<br><br>NEMA<br><br>Buliisa District Local Government |
| 8.2.7 | Climate change impacts | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>2. Open incineration of waste at the site shall be strictly prohibited</li> <li>3. All plastic waste generated at the site shall be collected in such a manner as to allow it to be recycled</li> <li>4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                   | Records of refrigerants used and service logs for air conditioning units<br><br>Records of solid waste disposed of/sent for recycling<br><br>Health of the natural vegetation surrounding the site<br><br>Ambient air quality<br><br>Depleted stored carbon<br><br>Increased soil erosion | Quarterly            | 3,000                   | Local council leaders ( Akiimi 'B')                                                                                                                                                                           |
| 8.2.8 | Visual impacts         | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Completely fence off the site during the site preparation phase</li> <li>2. Start landscaping and replanting ornamental trees as soon as it is reasonable to restore the visual appeal of the site</li> <li>3. Schedule excavation works for January to March when the visitor numbers are low</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Complaints log<br><br>Presence of fencing/hoarding around the site                                                                                                                                                                                                                        | Quarterly            | N/A                     | Project manager (NFA)<br><br>Health Safety and Environment Manager - IFPA - CD project<br><br>Technical Service Providers (TSP)<br><br>Buliisa District Local Government                                      |

| Ref.   | Impact                                                                             | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Monitoring Indicators                                                                                                                            | Monitoring Frequency | Resources & costs (USD)                               | Institutional Responsibility                                                                                                                                                                                  |
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| 8.2.9  | Impacts on water resources                                                         | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The contractor shall put in place waste collection bins around the site; these shall easily identifiable by shape, colour and size to allow for the segregation of waste into recyclables, hazardous and non-recyclable.</li> <li>All stock piles of materials or waste shall be situated away from paths of stormwater</li> <li>The drainage channels around the construction site shall be desilted regularly</li> <li>The contractor shall maintain emergency spill kits at the site in the event of a significant oil spill</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Records of water usage at the construction site<br><br>Water harvesting conducted<br><br>Complaint's log                                         | Bi-weekly            | 4,000                                                 | Local council leaders ( Akiimi 'B')<br>Project manager (NFA)<br><br>Health Safety and Environment Manager - IFPA - CD project<br><br>Technical Service Providers (TSP)                                        |
| 8.2.10 | Fire hazards                                                                       | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>A fire action plan shall be established at the site. It shall include means of reporting fires; evacuation procedures; procedures for workers who remain to shut down critical operations; and a means of accounting for all workers after evacuation.</li> <li>All workers on site shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid.</li> <li>Emergency contacts shall be conspicuously displayed within all sections of the site</li> <li>A legible site map indicating evacuation routes and assembly points shall be displayed within all sections of the site.</li> <li>A high-pressure water line shall be established at the site for use by emergency services in the event of major fires</li> <li>All workers shall at all times wear high-visibility clothing</li> <li>All combustible materials including waste shall be kept away from fuel, acetylene gas storage</li> <li>A smoking area away from fuel and other combustible material shall be established. "No smoking" shall be displayed in areas where smoking is prohibited</li> </ol> | Records of fire outbreaks at the project site<br><br>Presence of firefighting equipment at the site<br><br>Records of fire firefighting drills   | Monthly              | Part of the CFR Management plan – implementation fees | EHSO (Contractor)<br><br>MWE<br><br>NEMA<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B')                                                                                  |
| 8.2.12 | Noise and vibration impacts at the construction site and from construction traffic | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All construction and excavation shall be restricted to the day-time only</li> <li>The proponent shall acquire a licence to emit noise above permissible noise levels per the National Environment (Noise Standards and Control) Regulations, 2003; and comply with the conditions provided therein</li> <li>Equipment with the lowest noise rating shall be used where feasible</li> <li>NRMM such as generators shall be fitted with mufflers, enclosures and any other damping material to reduce their noise emission</li> <li>All machinery used on site shall be promptly serviced and maintained. Maintenance of old equipment can reduce noise levels by 50%</li> <li>Sound-absorbing barriers like plywood shall be erected around the site and noise equipment</li> <li>Noisy NRMM shall be sited away from the occupied structures adjacent to the site</li> <li>All NRMM and vehicles shall be shut down when not in use</li> <li>All workers shall be provided with the appropriate PPE such as earmuffs or plugs to protect them from noise levels above 85 dBA</li> </ol>                                                                      | Daily noise levels generated due to the activities at the construction site in dB<br><br>Complaints from the workers and community members       | Daily                | 2,000                                                 |                                                                                                                                                                                                               |
| 8.2.14 | Loss of vegetation and terrestrial habitat alteration                              | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall implement biodiversity offsets or other compensation mechanisms per section 115 of the National Environment Act, 2019; this shall fully compensate for the loss in biodiversity as a result of project implementation.</li> <li>Where applicable, mechanized vegetation removal shall be replaced with hand techniques, where the plant is removed with the root system intact, for replanting after construction;</li> <li>Vegetation translocation and relocation techniques shall be used as necessary. Vegetation cover, such as indigenous plant species topsoil or overburden suitable for sustaining growth after construction will be removed in separate operations and segregated for later use during landscaping;</li> <li>Mature tree species within the proposed project site shall be spared as far as is practical to minimize vegetation loss to crops that are easy to re-vegetate in other areas;</li> </ol>                                                                                                                                                                                                          | Records of species cleared to create space for the VIC structures<br><br>Records of tree species replanted<br><br>Animal species present on site | Quarterly            | 3,000                                                 | Project manager (NFA)<br><br>Health Safety and Environment Manager - IFPA - CD project<br><br>Technical Service Providers (TSP)<br><br>EHSO (Contractor)<br><br>NEMA<br><br>Buliisa District Local Government |

| Ref.                     | Impact          | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Monitoring Indicators                                                                                                                                                                                                       | Monitoring Frequency | Resources & costs (USD)                               | Institutional Responsibility                                                                                                                                                                                                                                                                           |
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|                          |                 | 5. Native trees will be replanted along the project corridor giving priority to preferred species for bird nesting, feeding, community use and provision of canopy or shade.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |                      |                                                       | Local council leaders ( Akiimi 'B')                                                                                                                                                                                                                                                                    |
| 8.2.15                   | Poaching        | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Implement strict control over firearms and other weapons to prevent them from falling into the hands of poachers.</li> <li>2. Employ additional security personnel and rangers during the construction phase to monitor the area. The presence of trained rangers and law enforcement officers in these areas help to deter poachers and respond to threats promptly.</li> <li>3. Clearly mark the construction site boundaries with visible signage indicating that the area is protected and any unauthorized entry is prohibited. In addition to this, install temporary fencing around the site to restrict access and prevent wildlife disturbance.</li> <li>4. Collaborate with local community members to conduct regular patrols around the construction site, reporting any suspicious activities. Establish a system for construction workers and supervisors to report any unusual or suspicious activities to relevant authorities.</li> <li>5. Train and educate construction workers about the importance of wildlife conservation, the risks of poaching, and how to identify and report suspicious behaviour. Conduct regular security briefings for construction workers, emphasizing the zero-tolerance policy for engaging in illegal activities, including poaching</li> <li>6. Clearly define and restrict access to sensitive areas within the construction site, such as potential wildlife corridors, to prevent any potential interference with animal movements.</li> <li>7. Collaborate with local law enforcement agencies to ensure regular patrols and responses to any reported incidents. All construction work shall be done during the day under the supervision of a trained ranger to monitor the workers</li> </ol> | Record of poaching incidences reported to the Authority<br><br>Records of training and awareness programs for construction workers<br><br>Presence of rangers on site<br><br>Complaints log                                 | Daily                | Part of the CFR Management plan – implementation fees | Local council leaders ( Akiimi 'B')<br>Project manager (NFA)<br>Health Safety and Environment Manager - IFPA - CD project<br>Technical Service Providers (TSP)<br>National Wildlife Crime Coordination Task Force (NWCCTF)<br>Buliisa District Local Government<br>Local council leaders ( Akiimi 'B') |
| 8.2.16                   | Animal abuse    | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. Appropriate signage shall be put up at the VICs instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the CFR (for example speed limits and no hooting)</li> <li>2. The construction workers shall undergo an induction to educate them on the importance of wildlife species and response actions when attacked by a problem animal</li> <li>3. A game ranger shall be retained at the site at all times to handle problem animals</li> <li>4. All incidences of attacks on animals or workers shall be reported to the proponent</li> <li>5. Fully stocked first aid kits equipped with anti-venom and anti-rabies vaccines shall be kept at the site</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Record of animal abuse incidences reported to the Authority<br><br>Records of training and awareness programs for construction workers<br><br>Complaints log                                                                | Daily                | Part of the CFR Management plan – implementation fees | Project manager (NFA)<br>National Wildlife Crime Coordination Task Force (NWCCTF)<br>Buliisa District Local Government<br>Local council leaders ( Akiimi 'B')                                                                                                                                          |
| 8.2.17                   | Illegal logging | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. The timber used in the construction of the VIC shall be sourced from licensed timber dealers indicating the source of the trees</li> <li>2. The proponent shall use the VIC as an avenue to create environmental awareness and education to communities about environmental protection and the dangers arising from illegal activities to improve the existing situation within the CFR.</li> <li>3. The proponent shall fast-track tree planting and conservation education in the project districts in close collaboration with other partners including sensitizing communities about accruing benefits.</li> <li>4. The proponent in collaboration with District leaders, NEMA, and Sub-County leaders needs to regulate charcoal burning and logging. Scouts/rangers need to be increased to monitor and stop illegal activities.</li> <li>5. The proponent shall establish habitat monitoring systems to support programmes aimed at rehabilitating the CFRs</li> <li>6. The government may consider the provision of solar products at subsidized rates to minimize the cutting of trees for charcoal and firewood</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Records of illegal logging reported to the Authority<br><br>Records of training and awareness programs for construction workers<br><br>Supply agreements indicating source of timber used at the site<br><br>Complaints log | Daily                |                                                       | Project manager (NFA)<br>National Wildlife Crime Coordination Task Force (NWCCTF)<br>Buliisa District Local Government<br>Local council leaders ( Akiimi 'B')                                                                                                                                          |
| <b>SOCIAL SAFEGUARDS</b> |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                             |                      |                                                       |                                                                                                                                                                                                                                                                                                        |

| Ref.   | Impact                               | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Monitoring Indicators                                                                                                                              | Monitoring Frequency | Resources & costs (USD)                        | Institutional Responsibility                                                                                                                                                                                                              |
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| 8.2.1  | Economic spill over                  | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>Engaging reliable local businesses on a contractual basis such as restaurants to provide catering services and health centres to provide medical services among others will enhance the gains these businesses can make and also guarantee quality in services provided to staff.</li> <li>Educating and reiterating to staff members and construction crews on discipline and acceptable social etiquette when interfacing with local businesses to avoid instances of theft, defaulting on credit advanced among other social vices</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Number of construction workers from the local area hired at the site<br><br>Records of training for construction workers                           | Quarterly            | N/A                                            | Project manager (NFA)<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B')                                                                                                                                 |
| 8.2.2  | Technological transfer               | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>Establishing training and capacity-building programs for professional and semi-skilled workers to learn and broaden their skill sets with techniques, machinery and protocols at the site</li> <li>Documenting the establishment of the VIC right from the inception stage by way of reports, documentaries and any other such form that can be made publicly available to scholars, and enthusiasts in architecture, design or construction.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Records of training of construction workers (including local labour and interns)<br><br>Documentation of the construction of the VIC               | Quarterly            | N/A                                            | Project manager (NFA)<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B')                                                                                                                                 |
| 8.2.13 | Impacts related to population influx | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall put in place measures to prevent the spread of highly-infectious diseases such as COVID-19 and Ebola as guided by the Health Authorities including encouraging vaccination</li> <li>Workers shall undergo training on social ethics and safe sex practices to curtail the spread of HIV/AIDS and other STDs</li> <li>A grievance redress mechanism shall be established to amicably resolve any grievances between the community and workers on site</li> <li>To the greatest extent possible, able and willing workers from the local area shall be hired to maximize the benefits accrued by the host community from project implementation</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Complaints from the workers and community members                                                                                                  | Quarterly            | 3,000                                          | Project manager (NFA)<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B')                                                                                                                                 |
| 8.2.11 | Impacts of an increase in traffic    | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>Inform and sensitize the community in advance of the anticipated impacts on traffic and roadways during the construction phase.</li> <li>Transport of construction materials shall be scheduled for off-peak traffic hours. This will reduce the risk of traffic flow disruptions on Biso – Masindi road.</li> <li>Appropriate traffic warning signs shall be placed along Biso – Masindi road to inform road users of trucks turning ahead and instruct them to reduce speed.</li> <li>Loading of transportation trucks shall be within the permissible limits (guidelines) for Uganda National Roads Authority (UNRA) axle loads for the targeted roads.</li> <li>Debris and excavation shall be properly covered during transportation from the site to prevent spillage during transportation</li> <li>The trucks shall be parked on the proposed site until they are offloaded.</li> <li>Heavy equipment shall be transported early morning (12 am – 5 am) with proper pilotage.</li> <li>The use of flagmen shall be employed to regulate traffic flow.</li> <li>Training and sensitization of personnel (drivers) in road safety and traffic regulations shall also be done by road contractors.</li> </ol> | Quality of the signage along the route leading to the construction site and near the site<br><br>Number of traffic incidents / complaints per week | Weekly               | Part of the operation costs / contractual fees | Project manager (NFA)<br><br>EHSO (Contractor)<br><br>Traffic warden (Contractor)<br><br>Uganda Police Force (Directorate of Traffic and Road Safety)<br><br>Buliisa District Local Government<br><br>Local council leaders ( Akiimi 'B') |



### 9.3.2 Operation phase

The necessary activities, mitigation measures and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the operation phase of the project are outlined in the table 9.3 below.

Table 9.3: Operation phase management plan

| Ref.                     | Impact                      | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Monitoring Indicators                                                                                                                                                                                                       | Monitoring Frequency | Resources & costs (USD)                               | Institutional Responsibility                                                                                    |
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| <b>SOCIAL SAFEGUARDS</b> |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                             |                      |                                                       |                                                                                                                 |
| 8.3.1                    | Tourism boost               | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The operation of the VIC shall be consolidated by other tourism promotion initiatives including aggressive marketing and diversification of the tourism products offered within the CFR</li> <li>The proponent shall consistently engage the relevant stakeholders to obtain feedback and suggestions on possible areas for improvement regarding the operation of the VIC. Stakeholders may include communities, tourists, private operators and other government agencies</li> </ol>                                                                                                                                                                                                                                                                        | Records of tourist visiting the CFR/VIC                                                                                                                                                                                     | Annually             | Part of the CFR Management plan – implementation fees | Project manager (NFA)<br>MTWA<br>UTB<br>Buliisa District Local Government<br>Local council leaders (Akiimi 'B') |
| 8.3.2                    | Enhanced visitor experience | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The staff at the VIC shall be extensively trained in hospitality, information dissemination, interpretation and quality assurance</li> <li>The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant</li> <li>The proponent shall consistently engage the relevant stakeholders to obtain feedback and suggestions on possible areas for improvement regarding the operation of the VIC. Stakeholders may include communities, tourists, private operators and other government agencies</li> </ol>                                                                                                                                                                          | Feedback from the various stakeholders (tourists, tour operators, Government MDAs)                                                                                                                                          | Quarterly            |                                                       | Project manager (NFA)<br>MTWA<br>UTB<br>Buliisa District Local Government<br>Local council leaders (Akiimi 'B') |
| 8.3.3                    | Socio-economic benefits     | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The proponent shall provide technical and/or financial support to the local communities through the CFMs; this will enhance the quality of the services provided by the community to the tourism industry</li> <li>The proponent shall engage with the local communities (leaders, vulnerable groups and community-based organizations) to evaluate the impact of the tourism boost on the local communities; this engagement shall inform the formulation of practical and acceptable enhancement or mitigation measures</li> <li>Local business that are found to be reliable and willing shall engaged on a contractual basis to provide goods or services to the VIC; this will significantly enhance the returns made by the local businesses</li> </ol> | Records of benefit sharing programs indicating number of beneficiaries<br>Records of training conducted among the local communities<br>Record of local businesses providing goods and services to the VIC<br>Complaints log | Quarterly            |                                                       | Project manager (NFA)<br>Buliisa District Local Government<br>Local council leaders (Akiimi 'B')                |
| 8.3.4                    | Security risks              | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>A security checkpoint shall be established at the entrance to the VIC where vehicles will be searched and persons may be asked to identify themselves before accessing the VIC</li> <li>Signage instructing all personnel to safeguard their personal belongings at all times shall be displayed within all sections of the VIC</li> <li>The VIC will be kept under CCTV surveillance, 24/7; the CCTV system shall have remote access capabilities</li> <li>The proponent shall provide ample security at the VIC to tackle any threats to life and property</li> <li>The security personnel at the VIC shall be instructed to use desist from unlawful acts such as torture, excessive force, extortion, etc.</li> </ol>                                      | Record of security incidences at the VIC (i.e. theft, assault etc.)<br>Presence and effectiveness of security protocols at the VIC (checkpoints and CCTV surveillance systems)                                              | Daily                | 2,000                                                 | Project manager (NFA)<br>UPF<br>Interpol<br>UPDF                                                                |



| Ref.   | Impact                                   | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Monitoring Indicators                                                                                                                                                                 | Monitoring Frequency | Resources & costs (USD)                                                                                                   | Institutional Responsibility                                                                                                                                                                          |
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|        |                                          | <ol style="list-style-type: none"> <li>The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals</li> <li>The proponent shall adhere to any guidance issued by security organs i.e. Uganda Police Force, Interpol, UPDF etc.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                       |                      |                                                                                                                           | <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                                                                                                                    |
| 8.3.7  | Community Health and Safety              | <p><b>Mitigation:</b></p> <ol style="list-style-type: none"> <li>The proponent shall put in place measures to prevent the spread of highly-infectious diseases (such as Ebola and COVID-19) as recommended by the Health Authorities</li> <li>The proponent shall create awareness of HIV/AIDS and other STDs among the employees; this can be achieved through having Reproductive Health Talks and signage</li> <li>The proponent shall institute good sanitation practices and encourage employees to strictly observe good personal hygiene</li> <li>The proponent shall encourage employees to get rabies pre-exposure vaccination</li> <li>Visitors and workers shall avoid physical contact with the animal species as much as possible; unless the physical contact is sanctioned by the proponent</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                 | <p>Presence and effectiveness of disease prevention measures (handwashing stations, signage etc.)</p> <p>Records of health talks on hygiene, STDs, HIV etc.</p> <p>Complaints log</p> | Quarterly            | Part of the CFR Management plan – implementation fees                                                                     | <p>Project manager (NFA)</p> <p>NEMA</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                                                                           |
| 8.3.11 | Loss of cultural identity                | <p><b>Mitigation:</b></p> <ol style="list-style-type: none"> <li>The proponent shall engage the relevant stakeholders to identify how local cultural heritage may be incorporated into or affected by the VIC</li> <li>The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant</li> <li>The proponent shall implement a grievance redress mechanism to amicably resolve any adverse cultural impacts or any forms of misrepresentation</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Complaints log</p> <p>Minutes from consultative meetings on the impact of the VIC on cultural heritage</p>                                                                         | Annually             | Part of the CFR Management plan – implementation fees                                                                     | <p>Project manager (NFA)</p> <p>Cultural institutions</p> <p>MGLSD (Department of Family and Cultural Affairs)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p> |
| 8.3.13 | Traffic disruption                       | <p><b>Mitigation:</b></p> <ol style="list-style-type: none"> <li>The proponent shall establish appropriate signage indicating the routes that the vehicles shall use, reserved parking spots (like for emergency vehicles and the disabled) and the speed limit in force at the VIC's premises</li> <li>Appropriate signage shall be put up at the VICs instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the CFR (for example speed limits and no hooting)</li> <li>The proponent shall develop a traffic management plan to address the increase in traffic during the peak season</li> <li>The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                              | <p>Quality of the signage along the route leading to the construction site and near the site</p> <p>Number of traffic incidents / complaints per month</p>                            | Monthly              | Part of the CFR Management plan – implementation fees                                                                     | <p>Project manager (NFA)</p> <p>Uganda Police Force (Directorate of Traffic and Road Safety)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                   |
| 8.3.14 | Dependence on tourism-related activities | <p><b>Mitigation:</b></p> <ol style="list-style-type: none"> <li>A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts.</li> <li>To avoid over-reliance on tourism-related activities, it is important to develop a diversified economy and promote alternative livelihoods that are compatible with the local communities, and Host community's cultural and environmental values. This could include initiatives such as sustainable agriculture, small business development, and cultural tourism that promotes the Host community's traditional skills and knowledge and those of the local communities.</li> <li>Partnership and Collaboration: Partnering with local organizations that work with homeless individuals can create a collaborative approach to supporting those in need. This can be done by establishing relationships with these organizations and working together to create effective solutions.</li> </ol> | <p>Number and scale of local businesses involved in tourism</p> <p>Complaints from community leaders</p>                                                                              | Annually             | <p>Part of the CFR Management plan – implementation fees</p> <p>Part of the CFR Management plan – implementation fees</p> | <p>Project manager (NFA)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                                                                                       |

| Ref.   | Impact                                              | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Monitoring Indicators                                                        | Monitoring Frequency | Resources & costs (USD) | Institutional Responsibility                                                                                                                                                                   |
|--------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |                                                     | 4. Referral Networks: Visitor information centers can establish referral networks with local organizations to ensure that individuals who are in need of assistance are connected with the appropriate resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                              |                      |                         |                                                                                                                                                                                                |
| 8.3.15 | Decay of marriage and sexual norms                  | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Efforts could be made to provide educational and awareness-raising programs for visitors and staff about the cultural practices and beliefs of the Host community, including those related to marriage and sexuality</li> </ol>                                                                                                                                               | Complaints log<br><br>Records / minutes from stakeholder engagement meetings | Annually             |                         | Project manager (NFA)<br><br>Cultural institutions<br><br>MGLSD (Department of Family and Cultural Affairs)<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |
| 8.3.16 | Impact on child rearing norms and family structures | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Efforts could be made to ensure that economic opportunities generated by tourism are distributed in a way that is compatible with the Host community's traditional values and practices.</li> </ol>                                                                                                                                                                           | Complaints log<br><br>Records / minutes from stakeholder engagement meetings | Annually             |                         | Project manager (NFA)<br><br>Cultural institutions<br><br>MGLSD (Department of Family and Cultural Affairs)<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |
| 8.3.17 | Shift in balance of power                           | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Efforts could be made to promote the importance of traditional leadership and governance systems. This could involve working with the Host community to integrate traditional systems of governance into formal decision-making processes, or supporting the development of programs that promote the importance of traditional knowledge</li> </ol>                          | Complaints log<br><br>Records / minutes from stakeholder engagement meetings | Annually             |                         | Project manager (NFA)<br><br>Cultural institutions<br><br>MGLSD (Department of Family and Cultural Affairs)<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |
| 8.3.18 | Impact on traditional systems of healing            | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Involve the Host community in establishing herbal demonstration sites outside the Forest Reserve</li> <li>3. Efforts could also be made to promote sustainable use of medicinal plants and to support the conservation of traditional healing practices through protecting natural resources and encouraging collaboration between traditional and modern healers.</li> </ol> | Complaints log<br><br>Records / minutes from stakeholder engagement meetings | Annually             |                         | Project manager (NFA)<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B')                                                                                       |
| 8.3.19 | Class divide and social conflict                    | <b>Mitigation:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Complaints log                                                               | Annually             |                         | Project manager (NFA)                                                                                                                                                                          |

| Ref.   | Impact                                 | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Monitoring Indicators                                                                                                                                                  | Monitoring Frequency | Resources & costs (USD) | Institutional Responsibility                                                                                                                                                                          |
|--------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |                                        | <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. The Host community and other communities shall be fairly compensated for their participation in tourism initiatives, including revenue-sharing schemes and fair wages for employees.</li> <li>3. Efforts could also be made to ensure that economic opportunities are distributed fairly and that all members of the Host community and other communities have access to these opportunities.</li> <li>4. Efforts could be made to promote cultural awareness and understanding between different social groups within the Host community and the other affected communities</li> </ol>                                                                                                                                                                                                                                                                                                                                                          | Records / minutes from stakeholder engagement meetings                                                                                                                 |                      |                         | <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                                                                                                                    |
| 8.3.20 | Impact of commercialization of culture | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Design and implement activities that take into account the need for integrating conservation friendly cultural values of the Local people into PA management</li> <li>3. Planning and the management of the protected areas where possible</li> <li>4. Companies shall respect the intellectual property rights of the creators and custodians of cultural products.</li> <li>5. Efforts could also be made to ensure that the commercialization of Local culture is done in a responsible and sustainable manner like Cultural sensitivity training</li> <li>6. It is important to ensure that their cultural heritage is respected and protected. This could involve working with the Local community to identify and protect important cultural practices and traditions</li> <li>7. Efforts could be made to empower the Local community to control the representation and sharing of their cultural heritage.</li> </ol> | <p>Number and scale of local businesses involved in tourism</p> <p>Records / minutes from stakeholder engagement meetings</p> <p>Complaints from community leaders</p> | Annually             |                         | <p>Project manager (NFA)</p> <p>Cultural institutions</p> <p>MGLSD (Department of Family and Cultural Affairs)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p> |
| 8.3.21 | Cultural preservation                  | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Mobilize and support the Local to engage in tourism activities</li> <li>3. Documentation: Documenting cultural heritage through photography, videography, and written records can help ensure that it is preserved for future generations. This can also include the creation of archives or digital databases.</li> <li>4. Sustainable tourism practices that respect cultural heritage can help support its preservation. This can include visitor education programs, responsible tourism practices, and the development of tourism products that promote cultural heritage.</li> </ol>                                                                                                                                                                                                                                                                                                                                   | <p>Records / minutes from stakeholder engagement meetings</p> <p>Complaints from community leaders and cultural institutions</p>                                       | Annually             |                         | <p>Project manager (NFA)</p> <p>Cultural institutions</p> <p>MGLSD (Department of Family and Cultural Affairs)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p> |
| 8.3.22 | Community development                  | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Create and provide gender balanced employment opportunities such as tour guides, porters, boundary management</li> <li>3. Prioritize local community members for employment opportunities in activities within the protected areas, such as restoration planting, removal of invasive species, and infrastructure construction;</li> <li>4. For ecotourism activities, prioritize local community member's employment as tour guides considering their unique local and cultural knowledge</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Number and scale of local businesses involved in tourism</p> <p>Records / minutes from stakeholder engagement meetings</p> <p>Complaints from community leaders</p> | Annually             |                         | <p>Project manager (NFA)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                                                                                       |
| 8.3.23 | Enhancing education and awareness      | <b>Enhancement:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Records / minutes from stakeholder engagement meetings                                                                                                                 | Annually             |                         | Project manager (NFA)                                                                                                                                                                                 |

| Ref.                            | Impact                               | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Monitoring Indicators                                                                                                                                                                                                                                                                                                | Monitoring Frequency | Resources & costs (USD)                               | Institutional Responsibility                                                                                                                                             |
|---------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                                      | <ol style="list-style-type: none"> <li>1. A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project affected persons. Grievance handling mechanism will provide a formal avenue for Host community and other affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts</li> <li>2. Technology can be a powerful tool for enhancing education and awareness. VICs can use technology to provide interactive displays, virtual tours, and other multimedia experiences that help visitors learn about local culture and history in an engaging way.</li> <li>3. VICs can enhance their educational offerings by collaborating with local experts and organizations, such as historians, archaeologists, and cultural organizations. This can help ensure that VICs are providing accurate and comprehensive information to visitors</li> <li>4. VICs shall provide accurate and up-to-date information, as well as high-quality educational materials such as brochures, maps, and multimedia displays.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>Number and reach of sensitization programs</p> <p>Complaints from community leaders</p>                                                                                                                                                                                                                           |                      |                                                       | <p>Cultural institutions</p> <p>MGLSD (Department of Family and Cultural Affairs)</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p> |
| <b>ENVIRONMENTAL SAFEGUARDS</b> |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                      |                      |                                                       |                                                                                                                                                                          |
| 8.3.5                           | Occupational Safety and Health risks | <p><b>Mitigation:</b></p> <ol style="list-style-type: none"> <li>1. Restriction of exposure by, for example, re-organizing tasks to build in rest periods or other breaks from work. This will allow workers to rest in an area where the environment is comfortable and, if necessary, to replace bodily fluids to combat dehydration or cold. If work rates cause excessive sweating, workers may need more frequent rest breaks and a facility for changing into dry clothing;</li> <li>2. Medical pre-selection of employees to ensure that they are fit to work in these environments;</li> <li>3. Lighting shall be sufficient to enable people to work and move about safely. If necessary, local lighting shall be provided at individual workstations and places of particular risk such as crossing points on traffic routes. Lighting and light fittings shall not create any hazards;</li> <li>4. Workrooms shall have enough free space to allow people to move about with ease;</li> <li>5. The workplace, and certain equipment, devices and systems shall be maintained in efficient working order (efficient for health, safety and welfare)</li> <li>6. There shall be sufficient traffic routes, of sufficient width and headroom, allowing people and vehicles to circulate safely and with ease</li> <li>7. Set appropriate speed limits, and make sure they, and any other traffic rules, are obeyed;</li> <li>8. Windows, transparent or translucent surfaces in walls, partitions, doors and gates shall, where necessary for reasons of health and safety, be made of safety material or be protected against breakage;</li> <li>9. Cleaning and the removal of waste shall be carried out as necessary by an effective method. Waste shall be stored in suitable receptacles.;</li> <li>10. Doors and gates shall be suitably constructed and fitted with safety devices if necessary;</li> <li>11. Suitable and sufficient sanitary conveniences and washing facilities shall be provided at readily accessible places; and</li> <li>12. An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, shall be provided</li> <li>13. The employees at the VIC shall be provided with the appropriate PPE considering the hazards they are occupationally exposed to</li> <li>14. All sections of the VIC shall be fitted with legible hazard and safety signage indicating the nature of hazards present, safety protocols in place and the location of emergency exits and assembly points</li> <li>15. A fully stocked first aid box shall be maintained at the site at all times</li> <li>16. All employees shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</li> </ol> | <p>Records of incidents (accidents and near misses) at the VIC</p> <p>The use of PPE at the VIC</p> <p>Records of daily safety talks and visitor orientation</p> <p>Presence of appropriate signage on-site</p> <p>Presence of dedicated first aiders and firefighters on-site</p> <p>Records of employee health</p> | Monthly              | 5,000                                                 | <p>Project manager (NFA)</p> <p>MGLSD</p> <p>Buliisa District Local Government</p> <p>Local council leaders (Akiimi 'B')</p>                                             |
| 8.3.6                           | Fire risks                           | <p><b>Mitigation:</b></p> <ol style="list-style-type: none"> <li>1. A fire action plan shall be established at the VIC per the general management plan. It shall include means of reporting fires; evacuation procedures; procedures for staff who remain to shut down critical operations or utilities; and a means of accounting for all occupants after evacuation.</li> <li>2. All staff shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid.</li> <li>3. Emergency contacts shall be conspicuously displayed within all sections of the VIC</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>Records fire out breaks at the VIC</p> <p>Presence of firefighting equipment at the VIC</p> <p>Records of fire firefighting drills</p>                                                                                                                                                                            | Monthly              | Part of the CFR Management plan – implementation fees | <p>Project manager (NFA)</p> <p>Uganda Police Force (Directorate of Fire and Rescue Services)</p> <p>Buliisa District Local Government</p>                               |



| Ref.   | Impact                      | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Monitoring Indicators                                                                                                                                                                                                                                        | Monitoring Frequency | Resources & costs (USD)                               | Institutional Responsibility                                                                                         |
|--------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|        |                             | <ol style="list-style-type: none"> <li>Legible maps indicating evacuation routes and assembly points shall be displayed within all sections of the VIC.</li> <li>Firefighting systems proportionate to the risk of a fire outbreak shall be installed at the VIC, these may include smoke detectors, alarms, extinguishers, hoses and fire hydrants</li> <li>All combustible materials including waste shall be kept away from fuel, sources of heat and ignition</li> <li>A smoking area away from fuel and other combustible material shall be established. "NO SMOKING" signs shall be displayed in areas where smoking is prohibited</li> </ol>                                                                                                                                                                        |                                                                                                                                                                                                                                                              |                      |                                                       | Local council leaders (Akiimi 'B')                                                                                   |
| 8.3.8  | Solid waste generation      | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements</li> <li>Well-labelled bins shall be placed at all sections of the building, these will aid in the segregation of waste</li> <li>Legible signage showing where each type of waste shall be disposed of shall be put up in all sections of the VIC</li> <li>The waste receptacles shall have well-secured lids to prevent animals from accessing the discarded materials</li> <li>Medical waste from the clinic and the administration of first aid shall be segregated from the clinic and disposed of by a licensed medical waste handler</li> </ol> | Presence and effectiveness of solid waste receptacles<br><br>Records of waste disposed of/sent for recycling<br><br>MOUs with licensed waste handlers                                                                                                        | Monthly              | 3,000                                                 | Project manager (NFA)<br><br>NEMA<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |
| 8.3.9  | Climate change impacts      | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>Open incineration of waste at the VIC shall be strictly prohibited</li> <li>All plastic waste generated at the VIC shall be collected in such a manner as to allow it to be recycled</li> <li>The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site</li> <li>The proponent shall maintain an inventory of their estimated GHG emissions</li> </ol>                                                                                                                           | Records of refrigerants used and service logs for air conditioning units<br><br>Records of solid waste disposed of/sent for recycling<br><br>GHG emissions inventory<br><br>Health of the natural vegetation surrounding the site<br><br>Ambient air quality | Annually             | Part of the CFR Management plan – implementation fees | Project manager (NFA)<br><br>NEMA<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |
| 8.3.10 | Impacts on air quality      | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the Kigali amendment of the Montreal Protocol</li> <li>Open incineration of waste at the VIC shall be strictly prohibited</li> <li>The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated</li> <li>All vehicles and machines shall be shut down when not in use</li> <li>Solar, LPG gas or eco-friendly briquettes shall be used in the kitchen</li> <li>Cleaning operations that minimize the emission or resuspension of particulate matter shall be prioritized for example, the use of vacuuming over sweeping</li> </ol>                    | Ambient air quality<br><br>Records of refrigerants used and service logs for air conditioning units<br><br>Complaints log                                                                                                                                    | Monthly              | 1,000                                                 | Project manager (NFA)<br><br>NEMA<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |
| 8.3.12 | Risk of oil and fuel spills | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All wastewater and surface runoff shall be channelled through an oil interceptor before it is discharged into the receiving environment; this will be emptied by a licensed waste handler</li> <li>The proponent shall maintain spill kits at the VIC in the event of significant oil spills</li> <li>Contaminated soil from a significant oil spill shall be stored in a secure drum and disposed of by a licensed waste handler</li> </ol>                                                                                                                                                                                                                                                                                                                     | Soil quality<br><br>Complaints log<br><br>Presence and effectiveness of oil pollution controls (interceptor, spill kits etc.)                                                                                                                                | Annually             | 1,000                                                 | Project manager (NFA)<br><br>NEMA<br><br>Buliisa District Local Government<br><br>Local council leaders (Akiimi 'B') |



### 9.3.3 Decommissioning phase

The necessary activities, mitigation measures and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the decommissioning phase of the project are outlined in the table 9.4 below.

Table 9.4: Decommissioning phase management plan

| S/no. | Impact                                   | Mitigation/enhancement Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Monitoring Indicators                                                                                                                                                                                                                                                         | Monitoring Frequency | Resources & costs (USD)             | Institutional Responsibility                                                                                     |
|-------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 8.4.1 | Occupational Health and Safety risks     | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix I) as they conduct their tasks at the site</li> <li>The decommissioning crews shall be inducted and trained on the safety measures and guidelines and observed while at the site</li> <li>All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> <li>avoid the risk of fire;</li> <li>control quickly and efficiently any outbreak of fire;</li> <li>bring about a quick and safe evacuation of persons</li> </ul> </li> <li>Smoking shall be prohibited and "No Smoking" notices be prominently displayed in all appropriate locations within the subject site</li> <li>Fire-extinguishing equipment shall be properly maintained and inspected at suitable intervals by a competent person. Access to fire-extinguishing equipment such as portable extinguishers and connections for hoses shall be kept clear at all times.</li> <li>Provision of appropriate PPE to all workers.</li> <li>As far as practicable, guard rails and toe boards in accordance with national laws and regulations shall be provided to protect workers from falling from elevated workplaces. Wherever the guard rails and toe-boards cannot be provided: <ul style="list-style-type: none"> <li>adequate safety nets or safety sheets shall be erected and maintained; or</li> <li>adequate safety harnesses shall be provided and used</li> </ul> </li> </ol> | Records of incidents (accidents and near misses) at the construction site<br><br>The use of PPE at the construction site<br><br>Records of daily toolbox talks and workers' orientation<br><br>Presence of appropriate signage on-site<br><br>Presence of supervisors on-site | Monthly              | 6,000                               | Project manager (NFA)<br><br>EHSO (Contractor)<br><br>NEMA<br><br>MGLSD<br><br>Buliisa District Local Government |
| 8.4.2 | Waste generation                         | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix H) and all other relevant legal requirements at the time of decommissioning</li> <li>Establish adequate gender-segregated sanitary facilities for all workers at the decommissioning site</li> <li>Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site</li> <li>Hire a licensed hazardous waste handler to remove and dispose of any hazardous substances</li> <li>Train the decommissioning workers on proper waste management practices</li> <li>Cover trucks ferrying debris from the site to curtail fugitive emissions during transportation</li> <li>Site stockpiles of debris away from stormwater paths</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Records of solid waste disposed of                                                                                                                                                                                                                                            | Daily                | 7,000                               | Project manager (NFA)<br><br>EHSO (Contractor)<br><br>NEMA<br><br>Buliisa District Local Government              |
| 8.4.3 | Visual impacts                           | <b>Mitigation:</b> <ol style="list-style-type: none"> <li>Completely fence off the site during the decommissioning phase</li> <li>Start restoration activities as soon as it is reasonable to restore the visual appeal of the site</li> <li>Schedule decommissioning for periods when the visitor numbers are low</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Complaint's log<br><br>Presence of fencing/hoarding around the site                                                                                                                                                                                                           | Quarterly            | N/A                                 | Project manager (NFA)<br><br>Buliisa District Local Government                                                   |
| 8.4.4 | Restoration of the disturbed environment | <b>Enhancement:</b> <ol style="list-style-type: none"> <li>The restoration shall fully compensate for the loss in biodiversity as a result of project implementation as per the National Environment Act, 2019 or other relevant legislation at the time of decommissioning</li> <li>The restoration shall reinstate the site to its pristine state, to the greatest extent possible</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Records of species replanted at the site<br><br>Restoration certificate                                                                                                                                                                                                       | Monthly              | To be discussed with the contractor | Project manager (NFA)<br><br>NEMA<br><br>Buliisa District Local Government                                       |

#### 9.4 Contractor Environmental and Social Management Plans (CEMPs)

CEMPs ensure that environmental impacts identified during the Environmental and Social Impact Assessment (ESIA), will be properly managed and that controls will be put in place to reduce the impacts of the development on the natural and human environment during construction phase. The purpose of a CEMPs is to;

- a. Provide effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the construction phase of the project
- b. Ensure that construction activities so far as is practical do not adversely impact amenity, traffic or the environment in the surrounding area.

Some of the management plans that shall be developed by the contractor are detailed below.

Table 9.5: Summary of contractor management plan

| No. | MANAGEMENT PLAN                                           | ISSUES COVERED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | Biodiversity Management and Action Plan (BMAP)            | <ul style="list-style-type: none"> <li>(i) Overarching biodiversity management control</li> <li>(ii) Project biodiversity management system</li> <li>(iii) Biodiversity identification, management, monitoring and restoration</li> <li>(iv) Provides tree inventory and replanting requirements</li> <li>(v) Actions to ensure no net loss and preferably a net gain of biodiversity</li> <li>(vi) Design inputs on location of animal crossings (assessment and identification of locations)</li> <li>(vii) Alien species management</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|     | Environmental Management and Action Plan                  | <ul style="list-style-type: none"> <li>(i) Noise and vibration levels mitigation and monitoring</li> <li>(ii) Construction dust mitigation and monitoring</li> <li>(iii) Pollution prevention and protection measures</li> <li>(iv) Design input on spill prevention/location/containment structures around sensitive equipment, installation of appropriate spill clean- up equipment and development of response procedures</li> <li>(v) Assessment and measures to prevent pollutants to enter pathway at source</li> <li>(vi) Actions to be followed in case pollutants enter the pathway in order to avoid discharge</li> <li>(vii) Waste Management, including:</li> <li>(viii) Waste hierarchy (i.e. reduction at source, reuse, recycling, energy recovery, responsible disposal) and green procurement;</li> <li>(ix) Identification and classification of waste;</li> <li>(x) Waste register;</li> <li>(xi) Waste handling (i.e. collection, segregation and containers, storage, treatment, transport and documentation, disposal); and</li> <li>(xii) Monitoring and reporting.</li> <li>(xiii) Resource Management including: Objectives, targets, processes in place for resource efficiency Water abstraction, conservation, discharge measures</li> <li>(xiv) Aggregate management planning</li> <li>(xv) Energy and fuel management</li> </ul> |
|     | Soil Erosion, Reinstatement & Landscape Management Plan   | <ul style="list-style-type: none"> <li>(i) Defines soil erosion controls and associated standards</li> <li>(ii) Temporary and permanent erosion control measures</li> <li>(iii) Inspection and maintenance programme</li> <li>(iv) Reinstatement and revegetation measures and planning</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|     | Auxiliary Sites and Associated Facilities Management Plan | <ul style="list-style-type: none"> <li>(i) EHS screening of associated facilities like campsite, parking site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|--|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                 | <ul style="list-style-type: none"> <li>(ii) Verification of compliance for third-party facilities</li> <li>(iii) Associated facilities EHS assurance</li> <li>(iv) Traffic-related aspects management (for construction traffic to/from associated facilities)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | Waste Management Plan                           | <ul style="list-style-type: none"> <li>(i) Waste management policy</li> <li>(ii) Categorization of waste, waste management hierarchy</li> <li>(iii) Service providers to manage deferent wastes (Human waste and mobile toilets, Site clinic waste, throughput the entire cycle for solid and liquid waste)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | Hazardous Substance Management Plan             | Access, storage and management of hazardous substances used at the worksites like hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | Cultural Heritage Management Plan               | <ul style="list-style-type: none"> <li>(i) Cultural heritage supervision and management during construction</li> <li>(ii) Chance find training, management and response</li> <li>(iii) Interface and coordination with relevant authorities</li> <li>(iv) Monitoring and reporting of intervention activities to recover and record cultural heritage values</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  | Human Resource and Labour Force Management Plan | <ul style="list-style-type: none"> <li>(i) Mobilization of the key staff</li> <li>(ii) Training and skill development activities;</li> <li>(iii) Employee grievance mechanism; and</li> <li>(iv) Monitoring and reporting</li> <li>(v) Preparation of the Local Recruitment Procedure to address inter alia the following measures:</li> <li>(vi) Promotion of local recruitment at all levels of the Project and facilitating the qualification and recruitment of local candidates, for example with appropriate skills training.</li> <li>(vii) Information to the local population (e.g. through the Liaison Officers of the Project) about opportunities for employment. The recruitment will be monitored and reported by Contractors' HR Department and Sociologist.</li> <li>(viii) Maximize use of local subcontractors and suppliers. Information about work opportunities will be made available to the local population.</li> <li>(ix) Workers' community interaction behavioural code of conduct Subcontractor employment practices conformance, reporting and monitoring</li> <li>(x) Key Organization Plan, Recruitment and Career Development Procedure, Working Conditions, Disciplinary Procedure, Training Procedure, staff contracts, benefits</li> </ul> |
|  | Occupational Health & Safety Management Plan    | <ul style="list-style-type: none"> <li>(i) Provisions of IFPA-CD Occupational Health and Safety measures</li> <li>(ii) Summary of OHS hazards and risks identification and assessment</li> <li>(iii) High-risk activities identification and management</li> <li>(iv) Occupational Health and Safety Communication and Training Programme which will apply during the Construction Phase across all contractors. The Plan will also apply to the quarries. The Plan will subsequently be updated as appropriate for the subsequent Operation Phase.</li> <li>(v) PPE Use Manual</li> <li>(vi) Risk Assessment</li> <li>(vii) Hazard, Risk and Impact Assessment Procedure</li> <li>(viii) Accident Investigation and Reporting, Near Miss Procedure</li> <li>(ix) Emergency Evacuation Procedure</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|  | Emergency Response Plan                | <ul style="list-style-type: none"> <li>(i) Provisions of IFPA-CD Occupational Health and Safety measures</li> <li>(ii) Emergency response in event of spills, fire, accidents, earthquake, flood, extreme weather, terrorist threats or attacks etc.</li> <li>(iii) Emergency response equipment/materials requirements</li> <li>(iv) Spill containment and clean-up plan</li> <li>(v) Procedure for staff and subcontractors to report any incidents and the investigation, remediation and preventive actions taken.</li> <li>(vi) Regular emergency response training including in the use of spill response equipment</li> <li>(vii) Emergency Communication Procedure including with local communities and authorities</li> </ul> |
|  | Transport Control and Site Access Plan | <ul style="list-style-type: none"> <li>(i) Road traffic management including:</li> <li>(ii) Establishing rights-of-way, site speed limits, vehicle inspection requirements, operating rules and procedures</li> <li>(iii) Local traffic signage.</li> <li>(iv) Training of Pedestrian workers to work safely around trucks and operating equipment and provide constant warnings to each other in the event of being in risky locations or conditions.</li> <li>(v) Training of drivers and equipment operators.</li> <li>(vi) Site Access Procedure</li> <li>(vii) Communication protocols and procedures</li> <li>(viii) Internal monitoring and reporting</li> </ul>                                                                |
|  | Child Protection Management Plan       | <ul style="list-style-type: none"> <li>(i) A child protection policy and commitment</li> <li>(ii) Code of conducts for workers and special code for drivers, operators and security guards</li> <li>(iii) Sensitization of workers and community</li> <li>(iv) Identification of any violations</li> <li>(v) Clear protocols for management of any child rights abuse attributed to the project</li> <li>(vi) Tracking and reporting of child rights abuses</li> </ul>                                                                                                                                                                                                                                                                 |
|  | Gender Management Plan (Including GBV) | <ul style="list-style-type: none"> <li>(i) Provisions of the IFPA – CD Stakeholder Engagement Framework and Plan (SEFP)</li> <li>(ii) A Gender policy Statement</li> <li>(iii) Code of conducts for workers and special code for drivers, operators and security guards on GBV</li> <li>(iv) Sensitization of workers and community on GBV</li> <li>(v) Identification of any violations</li> <li>(vi) Clear protocols for management of any GBV cases attributed to the project</li> <li>(vii) Tracking and reporting of child rights abuses</li> </ul>                                                                                                                                                                               |
|  | HIV/AIDS and STIs Management Plan      | <ul style="list-style-type: none"> <li>(i) HIV/ AIDS policy and commitment</li> <li>(ii) HIV Code of conducts for workers and special code for drivers, operators and security guards</li> <li>(iii) Sensitization of workers and community on HIV prevention</li> <li>(iv) Identification of any violations</li> <li>(v) HIV counselling, testing and referral of positive cases for treatment</li> <li>(vi) Tracking and reporting of HIV and AIDS activities for workers and community</li> </ul>                                                                                                                                                                                                                                   |
|  | Stakeholder Engagement Management Plan | <ul style="list-style-type: none"> <li>(i) Provisions of the IFPA – CD Stakeholder Engagement Framework and Plan (SEFP)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|--|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                 | <ul style="list-style-type: none"> <li>(ii) Overarching framework for all stakeholder engagement- related activities</li> <li>(iii) Stakeholder identification;</li> <li>(iv) Stakeholder engagement program</li> <li>(v) Monitoring and reporting</li> </ul>                                                                                                                                                                                                                               |
|  | Subcontractors and Supply Chain Management Plan | <ul style="list-style-type: none"> <li>(i) Roles &amp; responsibilities of sub-contractors</li> <li>(ii) Includes key requirements extracted from above plans &amp; procedures</li> <li>(iii) Need to develop subcontractor's ESHS Management Plan</li> <li>(iv) Establish Health, Safety and Environmental performances to monitor</li> <li>(v) Monitoring and reporting to the main contractor</li> <li>(vi) Principles, methodology and acquisition of construction materials</li> </ul> |
|  | Security Management Plan                        | <ul style="list-style-type: none"> <li>(i) The security measures, particularly for the Construction Stage of the Project</li> <li>(ii) Access control, registration, security briefings, involvement of LC and Uganda Police, fencing of construction section in the vicinity of settlements or communities).</li> </ul>                                                                                                                                                                    |
|  | Grievance Management Plan                       | <ul style="list-style-type: none"> <li>(i) Provisions of the IFPA – CD Stakeholder Engagement Framework and Plan (SEFP)</li> <li>(ii) Grievance Management Guidelines/ procedures</li> <li>(iii) GRC in place for community and workers</li> <li>(iv) Grievance registers</li> <li>(v) GRC Meetings</li> <li>(vi) Grievance trainings and sanitizations</li> <li>(vii) Escalation mechanisms of grievances</li> <li>(viii) Grievances tracking and reporting</li> </ul>                     |
|  | Decommissioning Plan                            | <ul style="list-style-type: none"> <li>(i) Decommissioning of workers</li> <li>(ii) Decommissioning of equipment</li> <li>(iii) Restoration of all sites</li> <li>(iv) Decommissioning reports</li> </ul>                                                                                                                                                                                                                                                                                   |
|  | Risk Management Plan                            | <ul style="list-style-type: none"> <li>(i) Provisions of IFPA-CD Occupational Health and Safety measures</li> <li>(ii) Job and hazard specific risks identified</li> <li>(iii) Risk management strategies established and implemented</li> <li>(iv) Risk tracking and reporting</li> </ul>                                                                                                                                                                                                  |
|  | Safeguards Reporting and Quality Assurance Plan | <ul style="list-style-type: none"> <li>(i) Nature of reports and minutes (daily, weekly, monthly, quarterly)</li> <li>(ii) E&amp;S Audit Reports</li> <li>(iii) Reviews and validation by Supervising Consultant</li> <li>(iv) Approvals and validation by Client</li> <li>(v) Monitoring checklists</li> <li>(vi) Reporting templates</li> </ul>                                                                                                                                           |
|  | Wildlife Management Plan                        | <ul style="list-style-type: none"> <li>(i) UWAs plan for wildlife outside parks</li> <li>(ii) Problem animals</li> <li>(iii) Emergencies</li> <li>(iv) Poaching</li> <li>(v) Reporting incidents</li> <li>(vi) Monitoring</li> </ul>                                                                                                                                                                                                                                                        |

#### 9.4.1 Waste Management Plan

The construction of The Visitor Information Centre is accompanied with generation of wastes that include both biodegradable and non- biodegradable wastes. During the construction phase, quantities of excavated materials and other wastes will be generated which will require



disposal in an appropriate and environmentally acceptable manner. The disposal strategy shall be based upon the waste management principle of reducing the amount of waste requiring final disposal through waste avoidance, material re-use, and recycling. Excavated materials and residual wastes may give rise to impacts during their handling, temporary stockpiling or storage on site, transportation and final disposal.

The basis for waste management actions will be segregation at source, storage and disposal of different types of waste. The entire waste management process will be anchored on active separation of wastes at point of generation. The essence of waste segregation at source is to enable re-use, recycling and the choice for the most appropriate disposal technology shall the first two fail. Separation of wastes at source further reduces chances of cross contamination of waste streams by hazardous wastes hence making it safer for both the waste management team and the receiving environment. The following generic steps will be followed;

### **I. Storage**

Well labelled bins shall form the basis of storage to facilitate easy removals and evacuation to disposal trucks. The project will utilize, the use of Colors or Labelling of waste collection bins, depending on what is considered feasible.

### **II. Collection and Transportation**

A Waste collection schedule shall be designed by the site foreman assisted by the Contractor's Environment Officer. In an event that there are no waste disposal sites near the project area, the contractor shall engage, through consultation of the district environment officer, a registered waste handling company to undertake the collection and transportation to the disposal sites preferably in any nearby district.

### **III. Hazardous Waste storage permits**

Used oils in particular will be collected and stored in sealed drums on a sheltered concrete ground to avoid any contact with bare soil surface. As required by NEMA, the contractor shall obtain a license for storage of Hazardous waste e.g. used oils on site awaiting transportation and disposal by a NEMA registered hazardous waste handler. However, final disposal of all hazardous wastes shall be done by a suitable NEMA licensed hazardous waste management company that shall be identified by the contractor.

### **IV. Waste inventory and record keeping**

The contractor and, if sub-contracted, the waste transporter will maintain written records of waste movement of both licensed and non-licensed waste activities. As a minimum, for waste tracking purposes, records will be kept in relation to the:

- Amount and the type of waste generated, stored, treated or disposed of;
- Amount and the type of waste transported;
- Date of transportation; and
- Name and location of the waste facility that receives the waste. These records will be kept for as long as the project is on-going.

#### **9.4.2 Occupational Health and Safety management Plan**

The main goal of Occupational Health and Safety management is to promote a safe and secure work environment through careful identification and management of hazards. It seeks to facilitate and empower workers and managers at all levels to participate in the avoidance, minimization and complete eradication of accidents and diseases associated with unsafe and insecure work places. It further seeks to enhance worker productivity through appropriate training and provision of tools that enhance performance, reduce lost time through accidents and limit material and financial losses arising from inappropriate equipment's, workers, methods and complacent personnel.

The safety and health plan is designed to achieve the following specific objectives.

- a. Achieve Zero reporting of accidents of all sorts and near misses throughout the construction life span of the project; thereby eliminating losses resulting from injuries and infections and diseases at the work place;
- b. Eliminate exposure and incidences of occupational injuries and diseases among all categories of the workforce; and
- c. Operate a flexible and quick response system to injuries at the work sites, following thorough training of all project staff in OHS procedures at induction; thus, instilling a culture of responsibility

The overall implementation of the plan will lie with the Project Manager who will delegate functional duties to the Health and Safety Officer. A safety committee comprising of section managers, foremen and workers representatives shall be constituted. The OHS plan is a living document that will be updated in consultation with all employees, the client and supervising consultant. Periodic audits both internal and those commissioned by regulatory agencies shall also inform periodic updates of the health and safety plan.

In addition, the contractor will;

- Make OSH plan readily available to all workers and all people concerned about this project and ensure they have an opportunity to read, understand, clarify and ask questions
- Keep a copy of the management plan for the whole duration of the project
- Review the plan regularly throughout the project and make any revisions known to those working on the project

Among others, the contractor shall endure the following;

#### **a. Risk assessment and Management**

The contractor shall undertake risk assessment as a way of estimating health risks from exposure to various levels of a workplace hazard. Understanding how much exposure to a hazard poses health risks to workers will the contractor to appropriately eliminate, control, and reduce those risks. This risk assessment will answer three basic questions:

- What can happen?
- How likely is it to happen?
- What are the consequences if it does happen?

The contractor shall identify the risks associated with the various construction activities, propose and implement measure to avert these risks and mitigate the impacts.

#### **b. Health and safety reporting and audits**

The OHS officer shall produce monthly reports to be discussed at the site meetings. The content of the report shall reflect all aspects of hazards identified. Detailed statistics on Implementation of safety plan including but not limited to the following shall be presented;

- Induction training carried out by section
- Fire drills conducted (number and sections)
- Health and safety tool box talks conducted
- Incident statistics categorized where possible
- Fatalities on the project by section If any
- Near misses records
- Notifiable incidences
- Disbursement and use of PPEs
- Compliance levels among employees by section
- Equipment certification by relevant agencies
- External inspections and their outcomes (If any).

#### **c. Training and OHS awareness**

The contractor shall ensure that all employees undertake induction training before commencement of work to cover basics of work place procedures including; Work regulations, OHS instructions (general & section specific), Personal behaviour and mannerism, Fire drills and firefighting skills, Emergence evacuation procedures, Rights and obligations and Incident reporting procedures among others. Tool Box Trainings will be conducted either every morning or weekly depending on the risk assessment of particular activities on how to safeguard against possible accidents.

#### **d. Incident reporting and investigation procedures**

The purpose of the procedure is to ensure all incidents and accidents involving contractor's personnel, visitors, property and activities are reported, investigated, and recorded.

The role of the Health and Safety officer is to facilitate and co-ordinate the reporting, recording and investigation of all OHS incidents by:

- Receive all notifications of incidents/accidents and ensure proper response is being followed including reporting, investigations and review.
- Once aware of an emergency, the response coordinator shall take the following actions:
  - Contact or communicate with emergency services
  - Coordinate activities of all personnel in the emergency response team and monitor its effectiveness
  - Inform the Contract Manager or Site Manager of the emergency
  - Coordinate the activities of all personnel in the emergency response team and make further directions as required by the situation;
  - Inform the team, Contract Manager and Site Manager of the end of the emergency situation
- Maintain the Project Emergency Response Plans and associated processes;
- Display names and contacts of personnel to be reached out in case of emergencies
- Provide the incident report, and actions being taken to prevent reoccurrence
- Coordinate training requirements for the emergency response team and all other site personnel.
- Ensure that adequate emergency response information and instructions are provided in trainings and inductions;
- Undertake planned inspections to ensure emergency response equipment and facilities are complete;

#### **9.4.3 Emergency Response and Preparedness Plan**

The plan applies to all forms of emergencies and incidents that have or are likely to cause, or have caused serious injury, and/or grave damage to the environment or property. It covers all aspects, activities and sites of the project. These include:

- a. Construction, use, occupation and management of campsites and associated facilities.
- b. Construction of culverts, and storm water drains
- c. Establishment equipment yards,
- d. Earthworks and establishment of pavement layers
- e. Construction of platforms, vehicle park platform and plant storage areas
- f. Establishment of aggregate stockpiling areas and cement silos
- g. Establishment and use of fuel storage areas
- h. Establishment of spoil stockpile areas
- i. Landscaping and grassing
- j. Decommissioning operations.

Emergencies will be managed through effective coordination, communication and response procedure. All incidents will be immediately reported to a supervisor who will contact Environmental officer, who in turn reports to the Health and safety officer. While all incidents shall be reported in the monthly E&S report, all serious incidents shall immediately be reported

to the Health and safety officer, who also reports to the Project Manager. All incidents will be investigated and the appropriate course of action will be taken to address the root cause.

The contractor shall ensure that trained first aiders are present at the camp and on the project roads during construction. Their roles shall include;

- Provide and record first aid treatment when required;
- Ensure that first aid kits are provided on every active site and supplies are replenished.
- Be evacuation officers in case of fire or natural incident that may affect an entire building, sites like quarry, campsites or laboratories; be responsible for occupants' safety and evacuation.
- Keep an updated list of employees and visitors on site and carry the name list during evacuation

An assessment will be undertaken to determine and mark out evacuation routes for each area or facility of the project auxiliary facilities. Workers will be drilled to follow the identified routes to assembly point. The assembly points shall be delineated in the site layout plan, labelled with a sign and communicated to all workers.

When an emergency incident occurs, the following response actions shall be taken:

- a. Person's present shall maintain calm
- b. As fast as practicable determine what may have happened and the nature of the emergency. This will help decide whether to attend to injured persons/situation or to communicate.
- c. The actions required maybe to attend to the injured person, stop machines or notify the safety Officer or his/her representative. Only trained first-aiders will provide assistance to injured persons.
- d. The Safety Officer, or his/her representative, if necessary, will call for emergency services (ambulance, police as necessary), and at appropriate moments notify the Project Manager.
- e. The site shall then be made safe to prevent further injury, loss, accident or incident. Actions here may include diverting traffic, suppressing fire, preventing objects from falling, shutting down equipment or utilities, and taking other necessary measures.
- f. Secure the site of the incident to ensure that it is not disturb; while allowing only disturbance to the extent that is essential to maintain life or relieve human suffering and prevent immediate or further losses. This is to allow incident investigation.
- g. The Safety Officer, or his/ her representative shall ensure the Contract Manager is notified immediately.

### **Evacuation procedure**

All staff shall be made aware of the possible escape routes and Assembly point during induction and regularly refreshed through drills and during trainings, or toolbox talks.

An Evacuation Personnel shall be designated for every site, and is particularly applicable for Campsites, quarry and culvert sections among others.

In the event of an emergency, the Safety Officer or his/her representative will give instruction to sound so that personnel evacuate to a specific area

Personnel onsite shall follow the instructions of the Evacuation Personnel.

- a. Personnel must follow the directional pointers to the nearest emergency exit.
- b. Evacuation must be undertaken in accordance to the emergency lay out plan.
- c. Unscathed and mobile employees must be the first to be evacuated followed by the weak and the injured.
- d. Evacuation personnel must work in pairs where possible to assist one another lifting heavy injured employees.
- e. Aid mobile employees who are struggling or appear unsure, and assist visitors.
- f. All personnel must keep calm and be evacuate by walking quickly and not run.

- g. Tasks of emergency services must not be obstructed.
- h. All personnel onsite must report directly to the allocated assembly point.
- i. Persons in assembly points and those that may have been injured must be counted and missing persons searched
- j. Personnel must not leave the assembly point until it has been deemed safe to do so.
- k. The evacuation personnel must be the last one to leave the area.

### **Training**

- All project workers shall be inducted before commencement of work, and will be briefed on the emergency response procedure.
- All employees and sub-contractors will be trained in emergency response procedures within one month of their start-date.
- Workers will be helped to understand potential emergency risks, appropriate first-person response to incidents and notification procedures.

The training shall be mandatory and will be conducted on a quarterly basis. Training shall to include, but not limited to the following: Firefighting, First Aid, Emergency Evacuation; and Medical and Environmental Emergencies.

### **Recording and investigations**

All incidents will be registered by Safety Officer in the Project's E&S database. Once registered, all incidents will be investigated for identification of causes and preventative actions.

#### **9.4.4 Sanitation Management Plan**

The Contractor shall provide adequate gender sensitive sanitary facilities that offer maximum privacy and comfort at all auxiliary facilities like the camp and mobile toilets along the project roads. He/she shall also provide the appropriate waste collection bins, preferably well labelled color-coded bins at all sites for purposes of sorting and storage of wastes awaiting collection and disposal.

The contractor shall ensure to maintain all sites in a state of cleanliness to the satisfaction of the supervising consultant.

#### **9.4.5 Human Resource Management Plan**

The Human Resource management plan shall form a basic guideline for all workers so as to maintain a friendly, cooperative and healthy working environment. All workers shall be made aware of the guidelines upon their formal employment by the Human Resource Manager and Health & Safety Officer in an induction. Efforts shall be made to create conditions which enable staff to coordinate their work with their family life. Employees shall be required to maintain a high standard of conduct and work performance and this shall include; Observing all policies and procedures, treating colleagues with courtesy and respect, treating visitors and clients in a professional manner at all times, working safely at all times; and team work / Team Spirit.

The contractor's Human Resource Manager shall make all employees aware of the recruitment policy and procedure, working time, medical examination and treatment, annual leave, maternity leave, paternity leave and sick leave, dismissal and disciplinary procedure among others.

#### **9.4.6 Grievance management plan**

The plan will govern how the contractors will receive grievances pertaining to project activities. It will capture grievances arising from actual project impacts, as well as issues which are simply perceived to be related to the project, irrespective of whether they derive directly from Contractor's activities.

These grievances may include;



- Complaints related to dust, vibrations and noise generated by contractor's equipment
- Traffic accidents caused by contractor's equipment and vehicles
- Workers' behaviour in the community especially towards women, children and young girls
- Illicit behaviors of contractor's workers e.g., use of obscene language, smoking, drug abuse and alcoholism among others
- Blockage of access due to ongoing construction works
- Clearance of right of way which may affect crops and trees
- Temporary displacement of road side activities in urban areas
- Increased pressure on social services and infrastructure as a result of influx of workers into the community

Considering the lengths of the roads, a grievance management committee will be formed along each road and will comprise of the Chairperson LCI, representative of the Supervising Consultant, representative from the community, Women Representative and an Elder. The committees will be trained in grievance redress system and the communities will be informed of the grievance management processes.

#### **9.4.7 HIV and other STIs Prevention and Management Plan**

This plan shall include measures that will be implemented in order to ensure control of the spread of HIV/AIDS and Sexually Transmitted Infections (STI) between the workers and the local community.

The contractor shall have in place an HIV/AIDS and STIs Policy in which he shall show commitment to the protection of the rights of employees living with HIV/AIDS (in close consultation with Uganda AIDS Commission), Prevention through information, education and training of both the workers and the community and free screening and counselling policies for STI and HIV/AIDS cases among project staff.

Regarding employees, the Contractor shall periodically, with support from the District Health Office, organize Information, Education and Communication Campaigns including free counselling and testing exercises. The contractor shall also establish a well-equipped and staffed HIV/AIDS site clinic preferably at the worker's camp that will provide the free counselling and testing services to the workers. In addition, condoms, both male and female, shall be freely provide to the workers and shall be preferably placed in the respective toilets for easy and convenient access.

Regarding the communities, the contractor shall organise campaigns in which he/she shall conduct Information, Education and Communication Campaigns including free counselling and testing of community members.

#### **9.4.8 Stakeholders Communication and Management Plan**

The aim shall be to ensure that adequate and timely information is provided to project affected people and all stakeholders, that proper mechanisms for information, consultation, and involvement is established, that this process will enable opportunities for dialogue, two-way discussion and active public participation. It can be expected that good implementation of stakeholder engagement will contribute in positive acceptance of the project activities and avoid as much as possible annoyance/dissatisfaction of the affected people that could be caused by the project activities.

Communication with stakeholders shall focus on those issues of most concern to local stakeholders, whether they are based on real or perceived risks and impacts. A monthly stakeholder engagement programme/schedule will be made by the contractor's Sociologist and Other Safeguard staff for engagements clearly stating the location, topics and dates.

#### **9.4.9 Gender and Social Equity Management Plan**

The Contractor's Gender Management Plan shall include; provision of gender sensitive working conditions and facilities, awareness creation and description of recruitment procedures among others.

To ensure gender mainstreaming in the construction activities; the contractor shall ensure that;

- Jobs are equitably distributed to both women and men as long as one has the qualification rather than basing on gender to allocate jobs. To effect this, the contractor shall encourage women to apply for available jobs by indicating this in job adverts.
- Information dissemination about dangers of HIV/AIDS to the community shall be done all throughout the period of the project. The messages shall be passed on using the locally understood language for better understanding.
- The contractor shall use gender-sensitive language such as: "Go Slow, Work in Progress" instead of "Go Slow, Men at Work". This, coupled with women's visibility in road works would, contribute to women's empowerment as well as breaking the stereotype that road construction is a preserve of men.
- To avoid blockage of access to private property like homes, farmlands and grazing fields, the contractor shall provide temporary access routes, or "bridges" that can be safely used by especially women, children, disabled and elderly people.
- The contractor will be selective in awarding service contracts, giving preference to women- owned entities. This, for example, is in regard to supply of foodstuffs to workers camps, housekeeping and culinary services for workers.

The contractor shall submit a monthly Report detailing among others:

- Mobilisation and recruitment strategies employed.
- Number of workers employed disaggregated by sex, age.
- Task allocation by sex.
- Proportion of women employed in supervisory positions.
- Proportion of wages accruing to women.
- Facilities provided to enhance women's participation in road works
- Capacity building for both female and male workers.
- Lessons learnt from implementations that can be the basis of documenting good practices.
- The report shall be verified by the Environment and Social manager

#### **9.4.10 Child Protection management Plan**

The contractor shall have and implement a Child Protection policy that will state commitment of the contractor and his/her employees to upholding the rights of children including prohibition of the employment of children below the age of 18 in construction activities. The plan shall also emphasize the need to induct and disseminate the policy to subcontractors, suppliers, visitors and all monitoring agencies who shall commit to the Child Protection Policy.

#### **9.4.11 Decommissioning plan**

The contractor shall prepare site specific decommission plans to serve as a guide during the implementation process to allow disturbed sites to regain their ecological functionality, connectivity and stability in the ecosystem through re-vegetation using indigenous plant species, with a long-term goal of stimulating biodiversity recovery to ensure it blends with that of the surrounding landscape.

The restoration will focus on but not limited to; Steep slopes, drainage pathways along the roads, temporary material storage and stockpile areas, road side tracks, borrow pits, workers' camp site and re- alignments where bends are to be avoided among others.

Perpetual monitoring from the on-set of the project throughout its implementation shall be undertaken during the rehabilitation processes and final restoration, with emphasis placed on the continuity between site characteristics and the adjacent landscapes.

Reporting of restoration works will be done by the Contractor's Environmentalist, with approval from the District Environment officer, supervising consultant upon satisfactions from other, if any, regulatory agencies involved.

#### **9.4.12 Capacity Building Plan**

The contractor shall develop measures to continuously build and improve the capacity and skills of the employees. The workers shall be inducted in the Environmental and Social safeguards at the start of the proposed projects and periodic training shall be given to workers in their specific areas of operation. This shall contribute to the quality of construction and save material as well as providing increased skills that can help the workers even after project completion.

#### **9.4.13 Quality Management Plan**

In order to achieve quality in all project operations, the contractor shall have and implement Quality Management plan. The competency needs of all personnel performing activities which affect the quality of manufacture/construction shall be identified by the contractor. Personnel performing specified assigned tasks shall be appropriately qualified on the basis of training, skills and/or experience, which will be confirmed by the Contractors Project Management team and approved by the Supervising Engineer/consultant as required.

Records of training and competencies (written confirmation by Contractors Project Manager) will be kept and maintained at the project office at the camp. The status of the constructed works will be identified by the progressive completion of Inspection and testing documentation which are Work Inspection Procedures and Checklists.

The contractor shall be responsible for the quality of the works. Checklists will be signed for each operation (e.g. earth work, concrete work, metal work, landscape work, etc. including mechanical, electrical and hydraulic works) to verify that works have been completed in accordance with requirements. In addition, the contractor shall submit to the supervising consult, material approval request for inspection and approval of material before use.

The Project Manager shall ensure that the Project Quality Management Plan is reviewed monthly to ensure that:

- The objectives and requirements of the Project Quality Management Plan are still valid, and are being met.
- Forthcoming activities are reviewed and any necessary amendments to the Project Quality Management Plan are put in place before the relevant work begins
- QMP processes shall be reviewed to ensure continuing suitability and effectiveness

#### **9.4.14 Oil spill contingency plan**

Sources of oil spills on the road construction project will include spillage of oil from engines of equipment (during refuelling, servicing or leakages due to fault in equipment tank) as well as Bitumen. These could range from minor to major spills if a large number of fuel drums are damaged simultaneously.

In case of an oil spillage, the response teams shall be equipped with the following response equipment:

- a. Spill kits containing absorbent pillows and fabric for vehicles
- b. Plastic bags
- c. Rubber gloves

The health and safety of personnel is paramount during an oil spill. Protective gear shall be used when carrying out an oil spill clean-up.

Spill management shall majorly involve containment and recovery of oil spills where practicable and the contractor shall ensure that the Health and safety officer and foremen are equipped with sufficient materials and equipment to contain all spills.

### **Training**

The contractor shall ensure that all workers are trained in prevention and management of oil spills and leaks. This shall be done during induction of workers and throughout the construction phase through regular sensitization. This training will cover procedures for reporting a spill, health and safety issues, and the use of equipment (e.g. absorbents, safety drums, etc.).

General response strategy for oil spills shall follow the procedure outlined below;

- The contractor and all workers shall ensure that oil spill equipment is in a known and accessible location.
- If a spill occurs, work shall be stopped or minimised to avoid any further spillage. Ensure safety of all personnel. Check for fire and explosion risk. Ensure safety equipment is worn.
- For all spills, absorbents shall be deployed to contain fuel if possible. It may be possible to hold fuel in depressions by using absorbent materials
- If possible, pump shall be used to remove fuel from ground straight into drums, while ensuring that sufficient good quality empty drums are available near the spill site.
- Absorbent material such as sawdust or sand shall be spread on any remaining fuel or oil outside which cannot be pumped or manually removed. Oil soaked absorbents must be picked up and put into plastic bags and/or empty drums.
- Drums or containers of recovered oil shall be stored in fuel containment areas close to workshops or other designated areas at the site.
- Containers or drums of recovered fuel/water, oil-soaked absorbents and contaminated clothing used in the clean-up shall then be transported for disposal by the licensed hazardous waste handler.
- Recovered oil, if usable, shall be stored at designated oil storage areas for later use.

### **9.4.15 Chance Finds Management Plan**

During the period of the construction of the project infrastructure which involves excavations, it is possible that chance finds will be encountered. These may include the following:

- Archaeological heritage which has remained unnoticed in the past.
- An encounter with a grave containing human remains which the local residents may have not mentioned at the survey stage.

In case of discovery of a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

- Stop all works in the vicinity of the find, and immediately report the findings to the supervisor who will then notify the Construction Manager and the Environment Officer (EO)/Environmental Manager (EM);
- The manager shall notify the Department of Museums and Monuments giving the location and nature of the finds
- Record details in Incident Report and take photos of the find;
- Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects;
- Any further excavations or continuation of the infrastructure development at the Site of the discovered heritage will be undertaken only with the approval of Department of Museums and Monuments.

- In the case of discovered human remains, LC1 and the district police station will have to be notified and either the remains are taken for forensic investigation or the LC1 authorities sanction the reburial of the remains at another location. The Contractor then meets the relocation and reburial expenses.

#### **9.4.16 Traffic Management Plan**

The Ministry of Works and Transport's General Specifications for Road and Bridge Works and Code of Practice obliges the contractor to prepare a temporary Traffic Management Plan to ensure safety at works or adjacent to roads sites. The Traffic and Road Safety (Safety at Road works) Regulations require that all and adjacent works, no matter how small, must be properly signalled and managed.

Traffic control at work sites is provided to maintain a safe workplace for workers, and to safely guide road users through work sites. It is essential for safety that the credibility of traffic control at work sites is maintained. This can be achieved by ensuring that arrangements are as simple and predictable as possible, that devices are correctly installed, and that the measures applied match the road environment and work activities being undertaken.

Due to anticipated construction traffic coupled with the community traffic, a Traffic Management Plan that will regulate traffic throughout the construction phase is required. Issues of dust, traffic jam and noise are more so regulated by this plan in place. The plan will also help protect road users and workers and keep traffic delays to a minimum through proper and clear signage.

Traffic Management Plan covers road markings, traffic signals, text-based signs, layout of signs at intersections and other typical locations, and detailed information on the design and sighting of signs necessary at sections of construction activities.

It shall cover;

- I. Traffic management measures and safeguards
- II. Roles and responsibilities
- III. Traffic public awareness campaign/ notification procedure
- IV. Speed limit zone
- V. Road signage position
- VI. Traffic incident reporting
- VII. Safe driving awareness/ trainings
- VIII. Traffic risk control
- IX. Corrective actions, among others.



## 10.0 ENVIRONMENTAL MONITORING

### 10.1 Overview

Environmental monitoring is a tool to assess environmental conditions and trends, support policy development and its implementation, and develop information for reporting to national policymakers, international forums and the public.

Environmental monitoring systems are crucial for regulatory compliance and environmental protection: they act as appraisal tools for projects that can be used by policymakers, researchers, and the public.

Monitoring starts with data collection – observations and measurements – and it depends on sampling equipment, monitoring stations, laboratories, and skilled personnel. Monitoring work follows specific methodologies, protocols and classifications. These are in turn influenced by information systems, including reporting approaches and indicators used.

In addition to direct in-situ measurements, aerial and satellite remote sensing may contribute to data collection, in particular for themes such as species inventories. Modelling can substitute where data collection is difficult and less cost-effective.

It is important to regularly review the organisation and outputs of environmental monitoring systems to detect possible gaps, weaknesses or imbalances. This ensures that the monitoring systems keep pace with the demand for information and developments in environmental policies and strategies

Environmental information systems analyse and synthesize monitoring data, developing “information” for reporting to end-users. The integration of environmental, economic, health and other data is important for policy objectives, including sustainable development goals.

Environmental reporting encompasses the various “outputs” of monitoring and information systems; it typically has four main objectives:

- Assessing environmental conditions and trends
- Supporting environmental policy
- Reporting to regulatory bodies
- Providing information to the public.

#### 10.1.1 Internal Monitoring

The proponent will carry out regular monitoring of the VIC as per the ESMP. The proponent will be assisted by the sector manager and the EHSO in monitoring the ESMP. Non-compliances with ESMP implementation will be reported by the relevant officer to the sector manager. The prescribed monitoring parameters, frequency and schedule will be followed to ensure the smooth implementation of proposed mitigation measures for various components and activities at the VIC. Monitoring will be done on a daily/weekly/monthly/quarterly basis but reporting could be done on a monthly and quarterly basis.

#### 10.1.2 Reporting

The progress report of ESMP monitoring will be shared with all stakeholders. The responsible monitoring personnel will be in charge of report writing and will report to the proponent. Third-party validation reports will be submitted to regulating Authorities such as NEMA and other stakeholders annually. The reporting frequency for different tiers of monitoring will be as follows:

Table 10.1: Progress reporting

| Reporting Frequency | Reporting Responsibility | Review and Decision |
|---------------------|--------------------------|---------------------|
| Daily               | VIC manager              | Sector manager      |

| Reporting Frequency | Reporting Responsibility | Review and Decision                                                          |
|---------------------|--------------------------|------------------------------------------------------------------------------|
| Monthly             | VIC manager              | Sector manager                                                               |
| Annually            | Sector Manager           | Proponent – NFA<br>Regulatory Authorities – NEMA, District Local Governments |

### 10.1.3 External Monitoring / Third-Party Validation

External monitoring or Third-Party Validation will be carried out through an independent monitoring consultant on an annual basis to evaluate the quality of work and validate the data on overall ESMP implementation progress, and ensure that the mitigation measures are implemented as per the mitigation plan. In case of any deviation, corrective actions will be taken where necessary. For Third Party Validation, well-qualified and experienced environmental and social experts shall be hired to conduct a thorough analysis of the data collected from the field and desk review of all quarterly progress reports to validate and identify gaps and weaknesses, if any, in the ESMP. The external monitoring team will submit the monitoring report to the proponent who will in turn submit it to regulating Authorities such as NEMA and other stakeholders including the District Local Government.

## 10.2 Estimated Cost

To implement the ESMP interventions, a cost will be incurred. This should be integrated into the project's overall costs. The intervention cost incurred will be due to capacity building, general maintenance, environmental management and compliance among many others. The implementation cost is shown in tables 10.2 to 10.4 below.

### 10.2.1 Testing the efficacy of the ESMP

The management of the VIC will work with the supervisors to implement a monitoring programme that will seek to test the effectiveness of the above management plan. The monitoring programme developed will be both active and reactive. Active monitoring will include the following:

- An audit checklist.
- Monitoring the specific indicators of the success of the ESMP in terms of anticipated results and environmental performance.
- Systematic and scheduled inspection of the workplace.
- Monitoring the work environment.
- Monitoring workers' health and OHS systems.
- Monitoring compliance with the environmental legislations and other laws governing the construction and operation of the VIC.

Reactive monitoring will include:

- Safety of workers.
- Occurrence of incidents and accidents at the workplace.
- Emergency response.
- Property damage.

### 10.2.2 Environmental auditing

Environmental audits as required by the regulating authorities will be conducted to incorporate the findings of the tests given in the table 10.2 to 10.4.

Table 10.2: Monitoring schedule for the construction phase

| Table 10.2: Monitoring schedule for the construction phase |                                         |                                                     |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------|-----------------------|------------|-----------|--|--|--|----|-----------------------------------------|-----------|--|----|---------------|------------------|------------------|----------|---------|--------------|--------|-----------------|----------|---------|---------------------------|-----------|--|-----------------|---|--|-------------|--|--|--|---|----------------------------------|----------|--|---|---------------------------|--|--|--|------|---------------|--|--|---------------|-----------|--|-----------|--------------------------------|--------------------------|----------------------|------|---------|----------------------|------|---------|--------------|-------|---------|-----------------------|---------------------------------|----------|-------|-----------------------------------------|-----------------------------------------------------|------|-------|------------|-----------------------|-------|----------|------------------------|-------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------|-------|
| S/No.                                                      | Aspect                                  | Site                                                | Receptor                                                                     | Sampling location | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameters of interest and Methodology/ Tool | Frequency  | Responsible personnel | Cost (USD) |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 1.                                                         | Ambient air quality monitoring          | Active construction site                            | Fauna and flora species on site<br><br>Community<br><br>Construction workers | Project site      | <div>East African standards on air quality specifications (EAS751:2010) as highlighted in the table below. (Construction phase).</div> <table><thead><tr><th>No.</th><th>Parameters</th><th colspan="2">Acceptable limits</th></tr></thead><tbody><tr><td colspan="4">Emissions</td></tr><tr><td>1.</td><td>Particulate matter (PM<sub>2.5</sub>)</td><td colspan="2">60 µg/cm³</td></tr><tr><td rowspan="4">2.</td><td rowspan="3">Noxious gases</td><td rowspan="3">Time-weighted Av</td><td>Acceptable Limit</td></tr><tr><td>One hour</td><td>0.8 ppm</td></tr><tr><td>Instant Peak</td><td>1.4ppm</td></tr><tr><td rowspan="2">SO<sub>x</sub></td><td>One hour</td><td>500g/m³</td></tr><tr><td>Instant Peak (10 minutes)</td><td>0.191 ppm</td></tr><tr><td></td><td>CO<sub>x</sub></td><td colspan="2">0</td></tr><tr><td colspan="4">Air quality</td></tr><tr><td>3</td><td>Vibration at 10 - 50Hz frequency</td><td colspan="2">12.5mm/s</td></tr><tr><td>4</td><td colspan="3">Ozone-depleting substance</td></tr><tr><td></td><td>CFCs</td><td colspan="2">Zero (banned)</td></tr><tr><td></td><td>HCFC and HFCs</td><td colspan="2">Regulated</td></tr></tbody></table> <div>Draft National Air Quality Standards, 2006</div> <div>Uganda's regulatory air quality standards for selected pollutants</div> <table><thead><tr><th>Pollutant</th><th>Averaging time for ambient air</th><th>Standard for ambient air</th></tr></thead><tbody><tr><td>Carbon dioxide (CO2)</td><td>8 hr</td><td>9.0 ppm</td></tr><tr><td>Carbon monoxide (CO)</td><td>8 hr</td><td>9.0 ppm</td></tr><tr><td>Hydrocarbons</td><td>24 hr</td><td>5 mg/m³</td></tr><tr><td>Nitrogen oxides (NOx)</td><td>24 hr<br/>1-year arithmetic mean</td><td>0.10 ppm</td></tr><tr><td>Smoke</td><td>Not to exceed 5 minutes in any one hour</td><td>Ringlemann scale No.2 or 40% observed at 6m or more</td></tr><tr><td>Soot</td><td>24 hr</td><td>500 µg/Nm³</td></tr><tr><td>Sulphur dioxide (SO2)</td><td>24 hr</td><td>0.15 ppm</td></tr><tr><td>Sulphur trioxide (SO3)</td><td>24 hr</td><td>200 µg/Nm³</td></tr></tbody></table> | No.                                          | Parameters | Acceptable limits     |            | Emissions |  |  |  | 1. | Particulate matter (PM <sub>2.5</sub> ) | 60 µg/cm³ |  | 2. | Noxious gases | Time-weighted Av | Acceptable Limit | One hour | 0.8 ppm | Instant Peak | 1.4ppm | SO <sub>x</sub> | One hour | 500g/m³ | Instant Peak (10 minutes) | 0.191 ppm |  | CO <sub>x</sub> | 0 |  | Air quality |  |  |  | 3 | Vibration at 10 - 50Hz frequency | 12.5mm/s |  | 4 | Ozone-depleting substance |  |  |  | CFCs | Zero (banned) |  |  | HCFC and HFCs | Regulated |  | Pollutant | Averaging time for ambient air | Standard for ambient air | Carbon dioxide (CO2) | 8 hr | 9.0 ppm | Carbon monoxide (CO) | 8 hr | 9.0 ppm | Hydrocarbons | 24 hr | 5 mg/m³ | Nitrogen oxides (NOx) | 24 hr<br>1-year arithmetic mean | 0.10 ppm | Smoke | Not to exceed 5 minutes in any one hour | Ringlemann scale No.2 or 40% observed at 6m or more | Soot | 24 hr | 500 µg/Nm³ | Sulphur dioxide (SO2) | 24 hr | 0.15 ppm | Sulphur trioxide (SO3) | 24 hr | 200 µg/Nm³ | <div>Particulate matter (PM<sub>25</sub> (µg/m³)),</div> <div>Methodology: Use of an active sampling method to monitor short-term concentrations of particulates, Casella Micro dust Pro™ digital aerosol monitor.</div> <div>Cases of Toxic and explosive gases (SO<sub>2</sub>, NO, NO<sub>2</sub>, CO<sub>2</sub>, NH<sub>2</sub>, H<sub>2</sub>S, VOCs, CO, CLO<sub>2</sub>, O<sub>2</sub>, and Methane) may be monitored using a set of three MX6 iBrid™ portable gas monitors.</div> | Quarterly and/ or as and when required | EHSO<br>- Contractors | 5,000 |
| No.                                                        | Parameters                              | Acceptable limits                                   |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Emissions                                                  |                                         |                                                     |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 1.                                                         | Particulate matter (PM <sub>2.5</sub> ) | 60 µg/cm³                                           |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 2.                                                         | Noxious gases                           | Time-weighted Av                                    | Acceptable Limit                                                             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                                                            |                                         |                                                     | One hour                                                                     | 0.8 ppm           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                                                            |                                         |                                                     | Instant Peak                                                                 | 1.4ppm            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                                                            | SO <sub>x</sub>                         | One hour                                            | 500g/m³                                                                      |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Instant Peak (10 minutes)                                  |                                         | 0.191 ppm                                           |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                                                            | CO <sub>x</sub>                         | 0                                                   |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Air quality                                                |                                         |                                                     |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 3                                                          | Vibration at 10 - 50Hz frequency        | 12.5mm/s                                            |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 4                                                          | Ozone-depleting substance               |                                                     |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                                                            | CFCs                                    | Zero (banned)                                       |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                                                            | HCFC and HFCs                           | Regulated                                           |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Pollutant                                                  | Averaging time for ambient air          | Standard for ambient air                            |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Carbon dioxide (CO2)                                       | 8 hr                                    | 9.0 ppm                                             |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Carbon monoxide (CO)                                       | 8 hr                                    | 9.0 ppm                                             |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Hydrocarbons                                               | 24 hr                                   | 5 mg/m³                                             |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Nitrogen oxides (NOx)                                      | 24 hr<br>1-year arithmetic mean         | 0.10 ppm                                            |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Smoke                                                      | Not to exceed 5 minutes in any one hour | Ringlemann scale No.2 or 40% observed at 6m or more |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Soot                                                       | 24 hr                                   | 500 µg/Nm³                                          |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Sulphur dioxide (SO2)                                      | 24 hr                                   | 0.15 ppm                                            |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Sulphur trioxide (SO3)                                     | 24 hr                                   | 200 µg/Nm³                                          |                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |

| S/No.                                        | Aspect                             | Site                                                   | Receptor                                                                     | Sampling location                                      | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameters of interest and Methodology/ Tool      | Frequency | Responsible personnel                        | Cost (USD)                          |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
|----------------------------------------------|------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------|----------------------------------------------|-------------------------------------|--------------------------|--------------------------|---------------------------|------|-----|---------------------------|------|-----|------------|------|----|--------------|-------|----------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|-------|-----|-----------------------------------------|------|-----|-------------|------|-----|-----------------------------|------|-----|-----------|------|----|----|---|---------|------------------------------------------|------|-----|-----------------|-----------|----|----------------------------------------------|------|-----|------------------------|------|------|------------------------|------|-----|-----------|-----|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------|-------|
|                                              |                                    |                                                        |                                                                              |                                                        | <p>Note: ppm = parts per million; “N” in µg/Nm-3 connotes normal atmospheric conditions of pressure and temperature (25°C and 1 atmosphere).</p> <p>Source: Ugandan draft National Air Quality Standards, 2006</p> <p><i>Relevance to the Project: Air emissions from construction sites should conform to the above regulatory limits through emissions control and monitoring.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| 2.                                           | Noise and vibration monitoring     | Active construction site                               | Fauna and flora species on site<br><br>Community<br><br>Construction workers | Project site                                           | <p>National Environment (Noise Standards and Control) Regulations, 2003</p> <table><tr><td></td><td>Day</td><td>Night</td></tr><tr><td>Noise Control Zone:</td><td>Sound Level dB (A) (Leq)</td><td>Sound Level dB (A) (Leq)</td></tr><tr><td>Residential</td><td>60</td><td>40</td></tr><tr><td>Commercial</td><td>75</td><td>50</td></tr><tr><td>Industrial</td><td>85</td><td>65</td></tr></table> <p>Time frame:<br/>Day 6.00 a.m. -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.</p> <table><tr><td colspan="2">Vibration</td></tr><tr><td>Vibration at 10 - 50Hz frequency</td><td>12.5mm/s</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   | Day       | Night                                        | Noise Control Zone:                 | Sound Level dB (A) (Leq) | Sound Level dB (A) (Leq) | Residential               | 60   | 40  | Commercial                | 75   | 50  | Industrial | 85   | 65 | Vibration    |       | Vibration at 10 - 50Hz frequency | 12.5mm/s | <p>Decibels<br/>Noise limits dB (A) (Leq)<br/><i>Methodology:</i> Use of a precision integrating sound level meter with an active range of 0-140 decibels (dB) and complying with IEC 651 and ANSI S4 standards. A 30-minute recording period at each selected location, for percentile parameters LAF50 and LAF90, LAeq and LAMax decibel levels.</p> | Monthly and/or as and when required | - EHSO<br>- Contractors  | 7,000 |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
|                                              | Day                                | Night                                                  |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Noise Control Zone:                          | Sound Level dB (A) (Leq)           | Sound Level dB (A) (Leq)                               |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Residential                                  | 60                                 | 40                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Commercial                                   | 75                                 | 50                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Industrial                                   | 85                                 | 65                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Vibration                                    |                                    |                                                        |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Vibration at 10 - 50Hz frequency             | 12.5mm/s                           |                                                        |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| 3.                                           | Exhaust gas temperature monitoring | Active construction site                               | Construction workers<br><br>Air quality                                      | Exhaust pipes on NRMM                                  | Should not exceed 30°C more than the value measured at the time of commissioning.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Exhaust gas temperature measured by an EGT sensor | Daily     | - EHSO<br>- Contractors                      | Part of contractual fees            |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| 4.                                           | Water supply systems               | Site water sources (including community water sources) | Community<br><br>Construction workers                                        | Wastewater discharge points<br><br>Water supply points | <p>National Portable water standards – treated water</p> <table><tr><th>Parameters</th><th>Units</th><th>National Standards for Natural Potable water</th></tr><tr><td>Bi-Carbonates: as CaCO<sub>3</sub></td><td>Mg/l</td><td>500</td></tr><tr><td>Calcium; Ca<sup>2+</sup></td><td>mg/l</td><td>150</td></tr><tr><td>Chlorides-Cl<sup>-</sup></td><td>mg/l</td><td>250</td></tr><tr><td>Colour</td><td>Ptco</td><td>50</td></tr><tr><td>Conductivity</td><td>µs/cm</td><td>2500</td></tr><tr><td>E-coli</td><td>CFU/100ml</td><td>0</td></tr><tr><td>Fluoride: F<sup>-</sup></td><td>Mg/l</td><td>1.5</td></tr><tr><td>Hardness: total (as CaCO<sub>3</sub>)</td><td>mg/l</td><td>600</td></tr><tr><td>Iron: total</td><td>mg/l</td><td>0.3</td></tr><tr><td>Magnesium: Mg<sup>2+</sup></td><td>mg/l</td><td>100</td></tr><tr><td>Nitrate-N</td><td>mg/l</td><td>45</td></tr><tr><td>pH</td><td>-</td><td>5.5-9.5</td></tr><tr><td>Sulphates: SO<sub>4</sub><sup>2-</sup></td><td>mg/l</td><td>400</td></tr><tr><td>Total Coliforms</td><td>CFU/100ml</td><td>10</td></tr><tr><td>Total alkalinity: as (as CaCO<sub>3</sub>)</td><td>mg/l</td><td>500</td></tr><tr><td>Total dissolved solids</td><td>mg/l</td><td>1500</td></tr><tr><td>Total suspended solids</td><td>mg/l</td><td>0.0</td></tr><tr><td>Turbidity</td><td>Ntu</td><td>25</td></tr></table> | Parameters                                        | Units     | National Standards for Natural Potable water | Bi-Carbonates: as CaCO <sub>3</sub> | Mg/l                     | 500                      | Calcium; Ca <sup>2+</sup> | mg/l | 150 | Chlorides-Cl <sup>-</sup> | mg/l | 250 | Colour     | Ptco | 50 | Conductivity | µs/cm | 2500                             | E-coli   | CFU/100ml                                                                                                                                                                                                                                                                                                                                              | 0                                   | Fluoride: F <sup>-</sup> | Mg/l  | 1.5 | Hardness: total (as CaCO <sub>3</sub> ) | mg/l | 600 | Iron: total | mg/l | 0.3 | Magnesium: Mg <sup>2+</sup> | mg/l | 100 | Nitrate-N | mg/l | 45 | pH | - | 5.5-9.5 | Sulphates: SO <sub>4</sub> <sup>2-</sup> | mg/l | 400 | Total Coliforms | CFU/100ml | 10 | Total alkalinity: as (as CaCO <sub>3</sub> ) | mg/l | 500 | Total dissolved solids | mg/l | 1500 | Total suspended solids | mg/l | 0.0 | Turbidity | Ntu | 25 | <p><i>Methodology:</i><br/>In-situ water tests may be taken using a multi-parameter water quality meter (HANNA HI 9828) to monitor the concentration of dissolved oxygen, conductivity, resistivity, pH, Temp, salinity, oxidation-reduction potential, atmospheric pressure and percentage of dissolved oxygen of the water sample.</p> <p>Whereas Lab samples measurement may be for Electrical Conductivity, TDS, TSS, Alkalinity, Hardness, Calcium, Magnesium, Bi Carbonate as CaCO<sub>3</sub>, Chloride, Fluoride, Iron Total, Sulphate, Nitrate, E-coli</p> | Quarterly and/ or as and when required | - EHSO<br>- Contractors | 6,000 |
| Parameters                                   | Units                              | National Standards for Natural Potable water           |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Bi-Carbonates: as CaCO <sub>3</sub>          | Mg/l                               | 500                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Calcium; Ca <sup>2+</sup>                    | mg/l                               | 150                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Chlorides-Cl <sup>-</sup>                    | mg/l                               | 250                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Colour                                       | Ptco                               | 50                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Conductivity                                 | µs/cm                              | 2500                                                   |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| E-coli                                       | CFU/100ml                          | 0                                                      |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Fluoride: F <sup>-</sup>                     | Mg/l                               | 1.5                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Hardness: total (as CaCO <sub>3</sub> )      | mg/l                               | 600                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Iron: total                                  | mg/l                               | 0.3                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Magnesium: Mg <sup>2+</sup>                  | mg/l                               | 100                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Nitrate-N                                    | mg/l                               | 45                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| pH                                           | -                                  | 5.5-9.5                                                |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Sulphates: SO <sub>4</sub> <sup>2-</sup>     | mg/l                               | 400                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Total Coliforms                              | CFU/100ml                          | 10                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Total alkalinity: as (as CaCO <sub>3</sub> ) | mg/l                               | 500                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Total dissolved solids                       | mg/l                               | 1500                                                   |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Total suspended solids                       | mg/l                               | 0.0                                                    |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |
| Turbidity                                    | Ntu                                | 25                                                     |                                                                              |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |           |                                              |                                     |                          |                          |                           |      |     |                           |      |     |            |      |    |              |       |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                          |       |     |                                         |      |     |             |      |     |                             |      |     |           |      |    |    |   |         |                                          |      |     |                 |           |    |                                              |      |     |                        |      |      |                        |      |     |           |     |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                         |       |

| S/No. | Aspect                                                   | Site                                                                                                                                                                                                                                                        | Receptor                              | Sampling location                                                                                           | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameters of interest and Methodology/ Tool                                                                                                                                                                                                                    | Frequency | Responsible personnel                                                           | Cost (USD) |
|-------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------|------------|
| 5.    | Oil spills;                                              | <ul style="list-style-type: none"> <li>- Fuel storage area</li> <li>- Mechanical equipment slabs.</li> <li>- Site workshops</li> </ul>                                                                                                                      | Hydrosphere<br><br>Fauna and flora    | <ul style="list-style-type: none"> <li>- Groundwater</li> <li>- Soil</li> <li>- Drainage systems</li> </ul> | National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.                                                                                                                                                                                                                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>- Sulphur</li> <li>- Aromatic compounds</li> <li>- Hydro Carbons</li> <li>- Paraffins</li> </ul>                                                                                                                         | Quarterly | <ul style="list-style-type: none"> <li>- EHSO</li> <li>- Contractors</li> </ul> | 4,000      |
| 6.    | Solid Waste Management<br>- Non-hazardous<br>- Hazardous | <ul style="list-style-type: none"> <li>- Accommodation units at the campsite</li> <li>- Project site</li> <li>- Facility cafeteria</li> <li>- Equipment storage unit</li> <li>- Light and heavy oil jerry cans</li> <li>- Waste collection point</li> </ul> | Construction workers<br><br>Community | Waste collection areas.                                                                                     | National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.                                                                                                                                                                                                                                                                                                                                                                                                                                      | Non-Hazardous; Biodegradable – food waste<br>Paper waste, etc.<br><u>Methodology:</u> Well labelled Waste collection bins<br><br>Hazardous; fuel and coolant<br><u>Methodology:</u> Waste collection logs and transportation and disposal contracts and notices | Daily     | <ul style="list-style-type: none"> <li>- EHSO</li> <li>- Contractors</li> </ul> | 5,000      |
| 7.    | Occupational Health and Safety                           | Active construction site                                                                                                                                                                                                                                    | Construction workers<br><br>Community | Construction site                                                                                           | The Occupational Safety and Health Act, 2006                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Number of incidents (accidents and near misses)<br>Results from quality tests of PPE<br>The functionality of OHS safeguards such as alarms, fire detectors etc.                                                                                                 | Quarterly | <ul style="list-style-type: none"> <li>- EHSO</li> <li>- Contractors</li> </ul> | 10,000     |
| 8.    | Biodiversity                                             | VIC and its environs                                                                                                                                                                                                                                        | Fauna and flora                       | VIC operational areas                                                                                       | National Forestry and Tree Planting Regulations, 2016<br>National Forestry and Tree Planting Act, 2003<br>Uganda Wildlife Act, 2019<br>Convention on the Protection of the World Cultural and Natural Heritage<br>Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) (CITES)<br>Convention on Biological Diversity, 1992<br>Bonn Convention, 1979<br>World Bank Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources | Presence of invasive species<br>Species richness<br>Reports of poaching and illegal logging                                                                                                                                                                     | Quarterly | <ul style="list-style-type: none"> <li>- EHSO</li> <li>- Contractors</li> </ul> | 5,000      |



Table 10.3: Monitoring schedule for the operation phase

| S/No.                                     | Activity                                     | Site                      | Receptor                                                                          | Sampling location                                                | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameters of interest and methodology/tool | Frequency  | Responsible personnel / Authority | Cost (USD)          |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|-------------------------------------------|----------------------------------------------|---------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------|-----------------------------------|---------------------|--------------------------|--------------------------|-------------|----|----|-----------------------------------------|-----------|----|------------|----------------------------------|------------------|-------------------------------------------|----------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------|----------|---------|--|--|---------------------------|-----------|--|-----------------|---|--|-------------|--|--|--|---|----------------------------------|----------|--|---|---------------------------|--|--|--|------|---------------|--|--|---------------|-----------|--|-----------|--------------------------------|--------------------------|----------------------|------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------|--|
| 1.                                        | Noise and vibration monitoring               | VIC and its environs      | Employees<br><br>Tourists<br><br>Fauna on site<br><br>Community members           | Main building<br><br>Garden<br><br>Parking lot<br><br>Green belt | <p>National Environment (Noise Standards and Control) Regulations, 2003 within the operational phase of the project.</p> <table><tr><th></th><th>Day</th><th>Night</th></tr><tr><td>Noise Control Zone:</td><td>Sound Level dB (A) (Leq)</td><td>Sound Level dB (A) (Leq)</td></tr><tr><td>Residential</td><td>60</td><td>40</td></tr><tr><td>Commercial</td><td>75</td><td>50</td></tr><tr><td>Industrial</td><td>85</td><td>65</td></tr><tr><td>Daytime is defined as 06:00 am - 10.00 pm</td><td colspan="2">The night is defined as: 10.00 pm - 06.00 am</td></tr></table> <p>Time frame: Day 6.00 a.m. -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.</p> <p>World Bank Environmental, Health and Safety Guidelines (EHSGs) 1.7: Noise</p> <p>Noise impacts should not result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             | Day        | Night                             | Noise Control Zone: | Sound Level dB (A) (Leq) | Sound Level dB (A) (Leq) | Residential | 60 | 40 | Commercial                              | 75        | 50 | Industrial | 85                               | 65               | Daytime is defined as 06:00 am - 10.00 pm | The night is defined as: 10.00 pm - 06.00 am |         | <p>Decibels<br/>Noise limits dB (A) (Leq)</p> <p>Methodology: Use of a precision integrating sound level meter with an active range of 0-140 decibels (dB) and complying with IEC 651 and ANSI S4 standards. A 30-minute recording period at each selected location, for percentile parameters LAF50 and LAF90, LAeq and LAMax decibel levels.</p> <p>Complaint logs</p> | Quarterly and/ or as and when required | Sector manager<br><br>VIC manager<br><br>NEMA<br><br>MGLSD<br><br>District Local Government | 10,000   |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           | Day                                          | Night                     |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Noise Control Zone:                       | Sound Level dB (A) (Leq)                     | Sound Level dB (A) (Leq)  |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Residential                               | 60                                           | 40                        |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Commercial                                | 75                                           | 50                        |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Industrial                                | 85                                           | 65                        |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Daytime is defined as 06:00 am - 10.00 pm | The night is defined as: 10.00 pm - 06.00 am |                           |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| 2.                                        | Ambient air quality monitoring               |                           | Employees<br><br>Tourists<br><br>Flora and fauna on site<br><br>Community members | Main building<br><br>Garden<br><br>Parking lot<br><br>Green belt | <p>East African standards on air quality specifications (EAS751:2010) as highlighted in the table below.</p> <table><tr><th>No.</th><th>Parameters</th><th colspan="2">Acceptable limits</th></tr><tr><td colspan="4">Emissions</td></tr><tr><td>1.</td><td>Particulate matter (PM<sub>2.5</sub>)</td><td colspan="2">60 µg/cm³</td></tr><tr><td rowspan="4">2.</td><td rowspan="3">Noxious gases<br/>NO<sub>x</sub></td><td>Time-weighted Av</td><td>Acceptable Limit</td></tr><tr><td>One hour</td><td>0.8 ppm</td></tr><tr><td>Instant Peak</td><td>1.4ppm</td></tr><tr><td>SO<sub>x</sub></td><td>One hour</td><td>500g/m³</td></tr><tr><td></td><td></td><td>Instant Peak (10 minutes)</td><td>0.191 ppm</td></tr><tr><td></td><td>CO<sub>x</sub></td><td colspan="2">0</td></tr><tr><td colspan="4">Air quality</td></tr><tr><td>3</td><td>Vibration at 10 - 50Hz frequency</td><td colspan="2">12.5mm/s</td></tr><tr><td>4</td><td colspan="3">Ozone-depleting substance</td></tr><tr><td></td><td>CFCs</td><td colspan="2">Zero (banned)</td></tr><tr><td></td><td>HCFC and HFCs</td><td colspan="2">Regulated</td></tr></table> <p>Draft National Air Quality Standards, 2006</p> <p>Uganda's regulatory air quality standards for selected pollutants</p> <table><tr><th>Pollutant</th><th>Averaging time for ambient air</th><th>Standard for ambient air</th></tr><tr><td>Carbon dioxide (CO2)</td><td>8 hr</td><td>9.0 ppm</td></tr></table> | No.                                         | Parameters | Acceptable limits                 |                     | Emissions                |                          |             |    | 1. | Particulate matter (PM <sub>2.5</sub> ) | 60 µg/cm³ |    | 2.         | Noxious gases<br>NO <sub>x</sub> | Time-weighted Av | Acceptable Limit                          | One hour                                     | 0.8 ppm | Instant Peak                                                                                                                                                                                                                                                                                                                                                             | 1.4ppm                                 | SO <sub>x</sub>                                                                             | One hour | 500g/m³ |  |  | Instant Peak (10 minutes) | 0.191 ppm |  | CO <sub>x</sub> | 0 |  | Air quality |  |  |  | 3 | Vibration at 10 - 50Hz frequency | 12.5mm/s |  | 4 | Ozone-depleting substance |  |  |  | CFCs | Zero (banned) |  |  | HCFC and HFCs | Regulated |  | Pollutant | Averaging time for ambient air | Standard for ambient air | Carbon dioxide (CO2) | 8 hr | 9.0 ppm | <p>Particulate matter</p> <p>Methodology: Use of an active sampling method to monitor short-term concentrations of particulates, Casella Microdust Pro™ digital aerosol monitor.</p> <p>Cases of Toxic and explosive gases (SO<sub>2</sub>, NO, NO<sub>2</sub>, CO<sub>2</sub>, NH<sub>2</sub>, H<sub>2</sub>S, VOCs, CO, CLO<sub>2</sub>, O<sub>2</sub>, and Methane) may be monitored using a set of three MX6 iBrid™ portable gas monitors.</p> <p>Complaint logs</p> | Quarterly and/ or as and when required | Sector manager<br><br>VIC manager<br><br>NEMA<br><br>District Local Government |  |
| No.                                       | Parameters                                   | Acceptable limits         |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Emissions                                 |                                              |                           |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| 1.                                        | Particulate matter (PM <sub>2.5</sub> )      | 60 µg/cm³                 |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| 2.                                        | Noxious gases<br>NO <sub>x</sub>             | Time-weighted Av          | Acceptable Limit                                                                  |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           |                                              | One hour                  | 0.8 ppm                                                                           |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           |                                              | Instant Peak              | 1.4ppm                                                                            |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           | SO <sub>x</sub>                              | One hour                  | 500g/m³                                                                           |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           |                                              | Instant Peak (10 minutes) | 0.191 ppm                                                                         |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           | CO <sub>x</sub>                              | 0                         |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Air quality                               |                                              |                           |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| 3                                         | Vibration at 10 - 50Hz frequency             | 12.5mm/s                  |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| 4                                         | Ozone-depleting substance                    |                           |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           | CFCs                                         | Zero (banned)             |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
|                                           | HCFC and HFCs                                | Regulated                 |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Pollutant                                 | Averaging time for ambient air               | Standard for ambient air  |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |
| Carbon dioxide (CO2)                      | 8 hr                                         | 9.0 ppm                   |                                                                                   |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                             |            |                                   |                     |                          |                          |             |    |    |                                         |           |    |            |                                  |                  |                                           |                                              |         |                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                             |          |         |  |  |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                                                |  |

| S/No. | Activity                                            | Site                       | Receptor                                                            | Sampling location                                           | Limits/ standards                                                                                                                         |                                         |                                                     | Parameters of interest and methodology/tool                                                                                                                                                                                                             | Frequency | Responsible personnel / Authority                                              | Cost (USD)                |
|-------|-----------------------------------------------------|----------------------------|---------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------|---------------------------|
|       |                                                     |                            |                                                                     |                                                             | Carbon monoxide (CO)                                                                                                                      | 8 hr                                    | 9.0 ppm                                             |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Hydrocarbons                                                                                                                              | 24 hr                                   | 5 mg/m³                                             |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Nitrogen oxides (NOx)                                                                                                                     | 24 hr<br>1-year arithmetic mean         | 0.10 ppm                                            |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Smoke                                                                                                                                     | Not to exceed 5 minutes in any one hour | Ringlemann scale No.2 or 40% observed at 6m or more |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Soot                                                                                                                                      | 24 hr                                   | 500 µg/Nm³                                          |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Sulphur dioxide (SO2)                                                                                                                     | 24 hr                                   | 0.15 ppm                                            |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Sulphur trioxide (SO3)                                                                                                                    | 24 hr                                   | 200 µg/Nm³                                          |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Note: ppm = parts per million; “N” in µg/Nm-3 connotes normal atmospheric conditions of pressure and temperature (25°C and 1 atmosphere). |                                         |                                                     |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
|       |                                                     |                            |                                                                     |                                                             | Source: Ugandan draft National Air Quality Standards, 2006                                                                                |                                         |                                                     |                                                                                                                                                                                                                                                         |           |                                                                                |                           |
| 3.    | Oil spills                                          | Parking lot<br><br>Kitchen | Hydrosphere<br><br>Flora and Fauna on site<br><br>Soil              | Parking lot<br><br>Kitchen<br><br>Drainage discharge points | National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.                                                      |                                         |                                                     | - Sulphur<br>- Aromatic compounds<br>- Hydro Carbons<br>- Paraffins                                                                                                                                                                                     | Quarterly | Sector manager<br><br>VIC manager<br><br>NEMA<br><br>District Local Government | 4,000                     |
| 4.    | Energy efficiency                                   | Main VIC building          | Local communities                                                   | Main VIC building                                           | N/A                                                                                                                                       |                                         |                                                     | - Lighting Power Density<br>- Window-to-Wall Ratio<br>- Openable Window/Façade Ratio<br>- Design Thermal Performance Improvements<br>- Equipment Efficiency Improvements<br>- HVAC System Energy Saving<br>- Lighting Control<br>- Renewable Energy use | Annually  | Sector manager<br><br>VIC manager<br><br>MEMD<br><br>NEMA                      | Part of operational costs |
| 5.    | Water usage                                         | VIC and its environs       | Hydrosphere<br><br>Local community                                  | Surface water bodies                                        | N/A                                                                                                                                       |                                         |                                                     | - Water Fixtures<br>- Non-Traditional Water Utilization (Landscaping and Lavatory)                                                                                                                                                                      | Annually  | Sector manager<br><br>VIC manager<br><br>MWE                                   |                           |
| 6.    | Solid waste management<br>- Domestic<br>- Hazardous | VIC and its environs       | Employees<br><br>Flora and fauna species on site<br><br>Hydrosphere | Operational facility sections                               | National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.                                                      |                                         |                                                     | Non-Hazardous; Biodegradable – food waste<br>Paper waste, etc.<br><br>Hazardous waste<br><br><u>Methodology</u> ; Review waste records                                                                                                                  | Daily     | Sector manager<br><br>VIC manager<br><br>NEMA                                  | 15,000                    |

| S/No.                                                                                          | Activity                               | Site                 | Receptor                                                                                   | Sampling location                       | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                                           | Parameters of interest and methodology/tool                                                                                                        | Frequency | Responsible personnel / Authority                                               | Cost (USD)              |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|--------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------|-------------------------|---|--|-----------|------|----|------------------|------|----|---------------------------|------|-----|-----|------|-----|--------|------|-----|--------------|-------|------|--------|------|-----|-------------------|------|----|-------------|------|----|------|------|-----|----|---|---------|------------------|------|----|------------------------------------------|------|-----|-----------|------|-----|----------------|------|----|-----------------|-----------|-------|----------------------------------------|------|-----|------------------------|------|------|------------------------|------|-----|----------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|--|
|                                                                                                |                                        |                      | Local Community                                                                            |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                           |                                                                                                                                                    |           | District Local Government                                                       |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
| 7.                                                                                             | Wastewater generation and its environs | VIC and its environs | Employees<br><br>Flora and fauna species on site<br><br>Hydrosphere<br><br>Local Community | Drainage network<br><br>Oil interceptor | <table><tr><th>Parameters</th><th>Units</th><th>National Standards for Effluent Discharge</th></tr><tr><td></td><td>-</td><td></td></tr><tr><td>Ammonia-N</td><td>Mg/l</td><td>10</td></tr><tr><td>BOD<sub>5</sub></td><td>Mg/l</td><td>50</td></tr><tr><td>Chlorides-Cl<sup>-</sup></td><td>mg/l</td><td>500</td></tr><tr><td>COD</td><td>Mg/l</td><td>100</td></tr><tr><td>Colour</td><td>Ptco</td><td>300</td></tr><tr><td>Conductivity</td><td>µs/cm</td><td>2500</td></tr><tr><td>Copper</td><td>Mg/l</td><td>1.0</td></tr><tr><td>Fats, Oil &amp;Grease</td><td>Mg/l</td><td>10</td></tr><tr><td>Iron: total</td><td>mg/l</td><td>10</td></tr><tr><td>Lead</td><td>mg/l</td><td>0.1</td></tr><tr><td>pH</td><td>-</td><td>6.0-8.0</td></tr><tr><td>Phosphorus Total</td><td>mg/l</td><td>10</td></tr><tr><td>Sulphates: SO<sub>4</sub><sup>2-</sup></td><td>mg/l</td><td>500</td></tr><tr><td>Sulphides</td><td>mg/l</td><td>1.0</td></tr><tr><td>Total Nitrogen</td><td>mg/l</td><td>10</td></tr><tr><td>Total Coliforms</td><td>CFU/100ml</td><td>10000</td></tr><tr><td>Total alkalinity: as CaCO<sub>3</sub></td><td>mg/l</td><td>600</td></tr><tr><td>Total dissolved solids</td><td>mg/l</td><td>1200</td></tr><tr><td>Total suspended solids</td><td>mg/l</td><td>100</td></tr></table> |           |                                           | Parameters                                                                                                                                         | Units     | National Standards for Effluent Discharge                                       |                         | - |  | Ammonia-N | Mg/l | 10 | BOD <sub>5</sub> | Mg/l | 50 | Chlorides-Cl <sup>-</sup> | mg/l | 500 | COD | Mg/l | 100 | Colour | Ptco | 300 | Conductivity | µs/cm | 2500 | Copper | Mg/l | 1.0 | Fats, Oil &Grease | Mg/l | 10 | Iron: total | mg/l | 10 | Lead | mg/l | 0.1 | pH | - | 6.0-8.0 | Phosphorus Total | mg/l | 10 | Sulphates: SO <sub>4</sub> <sup>2-</sup> | mg/l | 500 | Sulphides | mg/l | 1.0 | Total Nitrogen | mg/l | 10 | Total Coliforms | CFU/100ml | 10000 | Total alkalinity: as CaCO <sub>3</sub> | mg/l | 600 | Total dissolved solids | mg/l | 1200 | Total suspended solids | mg/l | 100 | Wastewater quality analysis results<br><br>Correspondences with DWRM | Monthly | Sector manager<br><br>VIC manager<br><br>NEMA<br><br>MWE<br><br>District Local Government |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Units     | National Standards for Effluent Discharge |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -         |                                           |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Ammonia-N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mg/l      | 10                                        |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | BOD <sub>5</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mg/l      | 50                                        |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Chlorides-Cl <sup>-</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | mg/l      | 500                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | COD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mg/l      | 100                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Colour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ptco      | 300                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Conductivity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | µs/cm     | 2500                                      |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Copper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mg/l      | 1.0                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Fats, Oil &Grease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mg/l      | 10                                        |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Iron: total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | mg/l      | 10                                        |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Lead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | mg/l      | 0.1                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | pH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -         | 6.0-8.0                                   |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Phosphorus Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | mg/l      | 10                                        |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Sulphates: SO <sub>4</sub> <sup>2-</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | mg/l      | 500                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Sulphides                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | mg/l      | 1.0                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Total Nitrogen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | mg/l      | 10                                        |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Total Coliforms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CFU/100ml | 10000                                     |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
|                                                                                                |                                        |                      |                                                                                            |                                         | Total alkalinity: as CaCO <sub>3</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | mg/l      | 600                                       |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
| Total dissolved solids                                                                         | mg/l                                   | 1200                 |                                                                                            |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                           |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
| Total suspended solids                                                                         | mg/l                                   | 100                  |                                                                                            |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                           |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
| National Environment (Standards for Discharge of Effluent into Water or Land) Regulations 2020 |                                        |                      |                                                                                            |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                           |                                                                                                                                                    |           |                                                                                 |                         |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
| 8.                                                                                             | Occupational safety and health         | VIC and its environs | Employees                                                                                  | VIC operational areas                   | The Occupational Safety and Health Act, 2006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                           | Records of OHS incidents including accidents and near misses<br><br>Walk through occupational hygiene surveys<br><br>Periodic medical examinations | Quarterly | Sector manager<br><br>VIC manager<br><br>MGLSD<br><br>District Local Government | 15,000                  |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |
| 9.                                                                                             | Quality                                | VIC                  | Tourists<br><br>Local community                                                            | Feedback from the relevant stakeholders | US ARS/AES 04:2014, Tourism — Sustainability and eco-labelling — Requirements<br>US 2565/ISO/PAS 5643:2021, Tourism and related services — Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry<br>US ISO 14785:2014 Tourist information offices — Tourist information and reception services — Requirements<br>US ISO 18065:2015, Tourism and related services — Tourist services for public use provided by Natural Protected Areas Authorities — Requirements<br>US ISO 23405:2022, Tourism and related services — Sustainable tourism — Principles, vocabulary and model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                                           | Accuracy and validity of the information disseminated at the VIC<br><br>Customer satisfaction                                                      | Annually  | Sector manager<br><br>VIC manager<br><br>NFA<br><br>MTWA                        | Part of operation costs |   |  |           |      |    |                  |      |    |                           |      |     |     |      |     |        |      |     |              |       |      |        |      |     |                   |      |    |             |      |    |      |      |     |    |   |         |                  |      |    |                                          |      |     |           |      |     |                |      |    |                 |           |       |                                        |      |     |                        |      |      |                        |      |     |                                                                      |         |                                                                                           |  |

| S/No. | Activity     | Site                 | Receptor        | Sampling location     | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameters of interest and methodology/tool      | Frequency | Responsible personnel / Authority                                   | Cost (USD)                                            |
|-------|--------------|----------------------|-----------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------|---------------------------------------------------------------------|-------------------------------------------------------|
| 10.   | Biodiversity | VIC and its environs | Fauna and flora | VIC operational areas | National Forestry and Tree Planting Regulations, 2016<br>National Forestry and Tree Planting Act, 2003<br>Uganda Wildlife Act, 2019<br>Convention on the Protection of the World Cultural and Natural Heritage<br>Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) (CITES)<br>Convention on Biological Diversity, 1992<br>Bonn Convention, 1979<br>World Bank Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources | Presence of invasive species<br>Species richness | Quarterly | Sector manager<br><br>VIC manager<br><br>NFA<br><br>UWA<br><br>MTWA | Part of the CFR Management plan – implementation fees |

Table 10.4: Monitoring schedule for decommissioning phase

| S/No.                     | Aspect                                  | Site                                                | Receptor                                                                        | Sampling location | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Parameters of interest and Methodology/ Tool | Frequency  | Responsible personnel | Cost (USD) |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|---------------------------|-----------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------|-----------------------|------------|-----------|--|--|--|----|-----------------------------------------|-----------|--|----|---------------|------------------|------------------|----------|---------|--------------|--------|-----------------|----------|---------|---------------------------|-----------|--|-----------------|---|--|-------------|--|--|--|---|----------------------------------|----------|--|---|---------------------------|--|--|--|------|---------------|--|--|---------------|-----------|--|-----------|--------------------------------|--------------------------|----------------------|------|---------|----------------------|------|---------|--------------|-------|---------|-----------------------|---------------------------------|----------|-------|-----------------------------------------|-----------------------------------------------------|------|-------|------------|-----------------------|-------|----------|------------------------|-------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------|-------|
| 1.                        | Ambient air quality monitoring          | Active decommissioning site                         | Fauna and flora species on site<br><br>Community<br><br>Decommissioning workers | Project site      | <div>East African standards on air quality specifications (EAS751:2010) as highlighted in the table below. (Decommissioning phase).</div> <table><thead><tr><th>No.</th><th>Parameters</th><th colspan="2">Acceptable limits</th></tr></thead><tbody><tr><td colspan="4">Emissions</td></tr><tr><td>1.</td><td>Particulate matter (PM<sub>2.5</sub>)</td><td colspan="2">60 µg/cm³</td></tr><tr><td rowspan="4">2.</td><td rowspan="3">Noxious gases</td><td rowspan="3">Time-weighted Av</td><td>Acceptable Limit</td></tr><tr><td>One hour</td><td>0.8 ppm</td></tr><tr><td>Instant Peak</td><td>1.4ppm</td></tr><tr><td rowspan="2">SO<sub>x</sub></td><td>One hour</td><td>500g/m³</td></tr><tr><td>Instant Peak (10 minutes)</td><td>0.191 ppm</td></tr><tr><td></td><td>CO<sub>x</sub></td><td colspan="2">0</td></tr><tr><td colspan="4">Air quality</td></tr><tr><td>3</td><td>Vibration at 10 - 50Hz frequency</td><td colspan="2">12.5mm/s</td></tr><tr><td>4</td><td colspan="3">Ozone-depleting substance</td></tr><tr><td></td><td>CFCs</td><td colspan="2">Zero (banned)</td></tr><tr><td></td><td>HCFC and HFCs</td><td colspan="2">Regulated</td></tr></tbody></table> <div>Draft National Air Quality Standards, 2006</div> <div>Uganda's regulatory air quality standards for selected pollutants</div> <table><thead><tr><th>Pollutant</th><th>Averaging time for ambient air</th><th>Standard for ambient air</th></tr></thead><tbody><tr><td>Carbon dioxide (CO2)</td><td>8 hr</td><td>9.0 ppm</td></tr><tr><td>Carbon monoxide (CO)</td><td>8 hr</td><td>9.0 ppm</td></tr><tr><td>Hydrocarbons</td><td>24 hr</td><td>5 mg/m³</td></tr><tr><td>Nitrogen oxides (NOx)</td><td>24 hr<br/>1-year arithmetic mean</td><td>0.10 ppm</td></tr><tr><td>Smoke</td><td>Not to exceed 5 minutes in any one hour</td><td>Ringlemann scale No.2 or 40% observed at 6m or more</td></tr><tr><td>Soot</td><td>24 hr</td><td>500 µg/Nm³</td></tr><tr><td>Sulphur dioxide (SO2)</td><td>24 hr</td><td>0.15 ppm</td></tr><tr><td>Sulphur trioxide (SO3)</td><td>24 hr</td><td>200 µg/Nm³</td></tr></tbody></table> | No.                                          | Parameters | Acceptable limits     |            | Emissions |  |  |  | 1. | Particulate matter (PM <sub>2.5</sub> ) | 60 µg/cm³ |  | 2. | Noxious gases | Time-weighted Av | Acceptable Limit | One hour | 0.8 ppm | Instant Peak | 1.4ppm | SO <sub>x</sub> | One hour | 500g/m³ | Instant Peak (10 minutes) | 0.191 ppm |  | CO <sub>x</sub> | 0 |  | Air quality |  |  |  | 3 | Vibration at 10 - 50Hz frequency | 12.5mm/s |  | 4 | Ozone-depleting substance |  |  |  | CFCs | Zero (banned) |  |  | HCFC and HFCs | Regulated |  | Pollutant | Averaging time for ambient air | Standard for ambient air | Carbon dioxide (CO2) | 8 hr | 9.0 ppm | Carbon monoxide (CO) | 8 hr | 9.0 ppm | Hydrocarbons | 24 hr | 5 mg/m³ | Nitrogen oxides (NOx) | 24 hr<br>1-year arithmetic mean | 0.10 ppm | Smoke | Not to exceed 5 minutes in any one hour | Ringlemann scale No.2 or 40% observed at 6m or more | Soot | 24 hr | 500 µg/Nm³ | Sulphur dioxide (SO2) | 24 hr | 0.15 ppm | Sulphur trioxide (SO3) | 24 hr | 200 µg/Nm³ | <div>Particulate matter (PM<sub>25</sub> (µg/m³)),</div> <div>Methodology: Use of an active sampling method to monitor short-term concentrations of particulates, Casella Micro dust Pro™ digital aerosol monitor.</div> <div>Cases of Toxic and explosive gases (SO<sub>2</sub>, NO, NO<sub>2</sub>, CO<sub>2</sub>, NH<sub>2</sub>, H<sub>2</sub>S, VOCs, CO, CLO<sub>2</sub>, O<sub>2</sub>, and Methane) may be monitored using a set of three MX6 iBrid™ portable gas monitors.</div> | Quarterly and/ or as and when required | EHSO<br>- Contractors | 4,000 |
| No.                       | Parameters                              | Acceptable limits                                   |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Emissions                 |                                         |                                                     |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 1.                        | Particulate matter (PM <sub>2.5</sub> ) | 60 µg/cm³                                           |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 2.                        | Noxious gases                           | Time-weighted Av                                    | Acceptable Limit                                                                |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                           |                                         |                                                     | One hour                                                                        | 0.8 ppm           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                           |                                         |                                                     | Instant Peak                                                                    | 1.4ppm            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                           | SO <sub>x</sub>                         | One hour                                            | 500g/m³                                                                         |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Instant Peak (10 minutes) |                                         | 0.191 ppm                                           |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                           | CO <sub>x</sub>                         | 0                                                   |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Air quality               |                                         |                                                     |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 3                         | Vibration at 10 - 50Hz frequency        | 12.5mm/s                                            |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| 4                         | Ozone-depleting substance               |                                                     |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                           | CFCs                                    | Zero (banned)                                       |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
|                           | HCFC and HFCs                           | Regulated                                           |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Pollutant                 | Averaging time for ambient air          | Standard for ambient air                            |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Carbon dioxide (CO2)      | 8 hr                                    | 9.0 ppm                                             |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Carbon monoxide (CO)      | 8 hr                                    | 9.0 ppm                                             |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Hydrocarbons              | 24 hr                                   | 5 mg/m³                                             |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Nitrogen oxides (NOx)     | 24 hr<br>1-year arithmetic mean         | 0.10 ppm                                            |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Smoke                     | Not to exceed 5 minutes in any one hour | Ringlemann scale No.2 or 40% observed at 6m or more |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Soot                      | 24 hr                                   | 500 µg/Nm³                                          |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Sulphur dioxide (SO2)     | 24 hr                                   | 0.15 ppm                                            |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |
| Sulphur trioxide (SO3)    | 24 hr                                   | 200 µg/Nm³                                          |                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |            |                       |            |           |  |  |  |    |                                         |           |  |    |               |                  |                  |          |         |              |        |                 |          |         |                           |           |  |                 |   |  |             |  |  |  |   |                                  |          |  |   |                           |  |  |  |      |               |  |  |               |           |  |           |                                |                          |                      |      |         |                      |      |         |              |       |         |                       |                                 |          |       |                                         |                                                     |      |       |            |                       |       |          |                        |       |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                       |       |



| S/No.                            | Aspect                                                   | Site                                                                                                                                                                        | Receptor                                                                        | Sampling location                             | Limits/ standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parameters of interest and Methodology/ Tool                                                                                                                                                                                                                              | Frequency | Responsible personnel                      | Cost (USD)               |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
|----------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------|--------------------------|--------------------------|--------------------------|-------------|----|----|------------|----|----|------------|----|----|-----------|--|----------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------|-------|
|                                  |                                                          |                                                                                                                                                                             |                                                                                 |                                               | <p>Note: ppm = parts per million; “N” in µg/Nm-3 connotes normal atmospheric conditions of pressure and temperature (25°C and 1 atmosphere).</p> <p>Source: Ugandan draft National Air Quality Standards, 2006</p> <p><u>Relevance to the Project:</u> Air emissions from decommissioning site should conform to the above regulatory limits through emissions control and monitoring.</p>                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| 2.                               | Noise and vibration monitoring                           | Active decommissioning site                                                                                                                                                 | Fauna and flora species on site<br><br>Community<br><br>Decommissioning workers | Project site                                  | <p>National Environment (Noise Standards and Control) Regulations, 2003</p> <table><tr><td></td><td>Day</td><td>Night</td></tr><tr><td>Noise Control Zone:</td><td>Sound Level dB (A) (Leq)</td><td>Sound Level dB (A) (Leq)</td></tr><tr><td>Residential</td><td>60</td><td>40</td></tr><tr><td>Commercial</td><td>75</td><td>50</td></tr><tr><td>Industrial</td><td>85</td><td>65</td></tr></table> <p>Time frame:<br/>Day 6.00 a.m. -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.</p> <table><tr><td colspan="2">Vibration</td></tr><tr><td>Vibration at 10 - 50Hz frequency</td><td>12.5mm/s</td></tr></table> |                                                                                                                                                                                                                                                                           | Day       | Night                                      | Noise Control Zone:      | Sound Level dB (A) (Leq) | Sound Level dB (A) (Leq) | Residential | 60 | 40 | Commercial | 75 | 50 | Industrial | 85 | 65 | Vibration |  | Vibration at 10 - 50Hz frequency | 12.5mm/s | <p>Decibels<br/>Noise limits dB (A) (Leq)<br/><u>Methodology:</u> Use of a precision integrating sound level meter with an active range of 0-140 decibels (dB) and complying with IEC 651 and ANSI S4 standards. A 30-minute recording period at each selected location, for percentile parameters LAF50 and LAF90, LAeq and LAMax decibel levels.</p> | Monthly and/or as and when required | - EHSO<br>- Contractors | 4,000 |
|                                  | Day                                                      | Night                                                                                                                                                                       |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| Noise Control Zone:              | Sound Level dB (A) (Leq)                                 | Sound Level dB (A) (Leq)                                                                                                                                                    |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| Residential                      | 60                                                       | 40                                                                                                                                                                          |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| Commercial                       | 75                                                       | 50                                                                                                                                                                          |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| Industrial                       | 85                                                       | 65                                                                                                                                                                          |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| Vibration                        |                                                          |                                                                                                                                                                             |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| Vibration at 10 - 50Hz frequency | 12.5mm/s                                                 |                                                                                                                                                                             |                                                                                 |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                           |           |                                            |                          |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| 3.                               | Oil spills;                                              | - Fuel storage area<br>- Mechanical equipment slabs.<br>- Site workshops                                                                                                    | Hydrosphere<br><br>Fauna and flora                                              | - Groundwater<br>- Soil<br>- Drainage systems | National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | - Sulphur<br>- Aromatic compounds<br>- Hydro Carbons<br>- Paraffin                                                                                                                                                                                                        | Quarterly | - EHSO<br>- Contractors                    | 2,000                    |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| 4.                               | Solid Waste Management<br>- Non-hazardous<br>- Hazardous | - Accommodation units at the campsite<br>- Project site<br>- Facility cafeteria<br>- Equipment storage unit<br>- Light and heavy oil jerry cans<br>- Waste collection point | Decommissioning workers<br><br>Community                                        | Waste collection areas.                       | National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>Non-Hazardous; Biodegradable – food waste<br/>Paper waste, etc.<br/><u>Methodology:</u> Well labelled Waste collection bins</p> <p>Hazardous; fuel and coolant<br/><u>Methodology:</u> Waste collection logs and transportation and disposal contracts and notices</p> | Daily     | - EHSO<br>- Contractors                    | Part of contractual fees |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |
| 5.                               | Occupational Health and Safety                           | Active decommissioning site                                                                                                                                                 | Decommissioning workers<br><br>Community                                        | Decommissioning site                          | The Occupational Safety and Health Act, 2006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Number of incidents (accidents and near misses)<br>Results from quality tests of PPE<br>The functionality of OHS safeguards such as alarms, fire detectors etc.                                                                                                           | Quarterly | - EHSO<br>- Company Nurse<br>- Contractors | 6,000                    |                          |                          |             |    |    |            |    |    |            |    |    |           |  |                                  |          |                                                                                                                                                                                                                                                                                                                                                        |                                     |                         |       |

## 11.0 Conclusion

The development of the VIC is a critical project to allow the NFA to promote sustainable eco-tourism in Budongo CFR. Tourism has been earmarked as one of the sectors that the Government can leverage to propel Uganda into a middle income country.

The Environmental and Social Impact Assessment (ESIA) for the development of the VIC considered the relevant characteristics of the project and the variables of environmental and social quality in its area of influence to identify and assess impacts of the construction, operation and decommissioning phases.

Mitigation measures for all anticipated impacts during the site preparation, construction and operation phases have been provided in the ESMP (Chapter 9 and 10). All adverse impacts anticipated during the three phases are provided with management measures in the ESMP developed in a conceptual level with reference to relevant legal provisions at National and International levels. The mitigation measures proposed in the ESMP are appropriate considering the significance of the impacts and have the potential to make the environmental and social changes tolerable for receptors during these phases. Relevant documentation has also been annexed to this report for ease of reference.

In this note, it is also important to highlight that the stakeholders consulted during the ESIA (Chapter 7) welcome the VIC, citing the potential positive impacts associated with successful project implementation including, economic development, enhanced visitor infrastructure and access to public services, and economic growth as a result of population growth in the area.

Against this background, considering the weighting of negative and positive impacts, the premises of the project and the area of influence, the likely outcome of project development is positive.

The design of the proposed VIC will focus on minimizing the probability and consequences of adverse impacts during the operation of the facility. Implementation, monitoring and enforcement of the mitigation measures that are recommended in this report and improved communication to the wider community, will ensure successful execution of this development with minimum negative impacts on the environment. Continuous stakeholder engagement throughout all phases of project development to enhance the benefits and curb creeping negative impacts that may arise. The recommended Environmental and Social Management Plan (ESMP) should also be observed throughout the entire life of the project.

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UNRA, 2020. Environmental and Social Impact Assessment for upgrading of selected national roads (8 lots): lot 5: kabale-bunyonyi (7.8km), bunyonyi-kabehe (7.3km) kisoro-mgahinga gate (13.4 km) and nyarusiza- Muhabura gate (5.3 km)

World Bank, 2016. World Bank Environmental and Social Framework, Washington, DC: International Bank for Reconstruction and Development/The World Bank.

**Appendices**  
**Appendix A: Approved Terms of Reference**



**NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)**

NEMA House  
Plot 17,19 & 21, Jinja Road,  
P.O.Box 22255, Kampala, UGANDA.  
Tel: 256-414- 251064, 251065, 251068  
342758,342759, 342717  
Fax: 256-414-257521 / 232680  
E-mail: info@nemaug.org  
Website: www.nemaug.org

**NEMA/4.5**

24<sup>th</sup> October, 2022

The Executive Director,  
National Forest Authority,  
Plot 10/20 Spring Road,  
P.O Box 70863,  
**KAMPALA.**

Tel: +256-312-264035/6  
Email: info@nafa.go.ug

**RE: REVIEW OF SCOPING REPORT AND TERMS OF REFERENCE FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED VISITORS INFORMATION CENTRES IN THE CENTRAL FOREST RESERVES OF BUDONGO, BUGOMA AND ECHUYA (EIATOR9769)**

This is in reference to the submission to this Authority, of the Scoping Report and Terms of Reference (TOR) **(EIA-TOR 9769)** for carrying out environmental and social impact assessment (ESIA) for the above-mentioned proposed Project, for review and consideration for approval. This Authority has finalised the review of the said Scoping Report and ToR and grants formal approval.

**Please, note that approval of the Scoping Report and TOR, DOES NOT GIVE YOU PERMISSION to start implementing any of the proposed project activities, before a decision is made by this Authority.**

You should ensure that the key aspects highlighted below are taken into consideration during the conduct of the Environment and Social Impact Assessment and preparation of the ESIA report.

- (a) Submit separate ESIA for each of the three proposed Visitors Information Centres (VIC) with clear location maps, GPS Coordinates clearly indicating the location for the proposed area for development of the VICs;
- (b) comprehensive consultations are carried out with the key stakeholders including the Ministry of Gender, Labor and Social Development, the Department of

Occupational Safety and Health and the respective District Local Government Authorities where the Central Forest Reserves are situated and the local communities in the project area; and that the views/concerns of the stakeholders consulted are well documented and appended to the ESIA reports to be submitted;

- (c) maps showing the existing fragile ecosystems in the project area, among others in relation to the project site and a detailed description of the baseline information of the project site and its environs is provided, including a proposed site lay-out plan;
- (d) details of the various components of the project and activities covering both the construction and operational phases of the project, including sources and types of raw materials and the different types of waste streams, are provided;
- (e) soil and water analyses are carried out for the project site respectively, and that soil and water analyses results are included in ESIA report;
- (f) comprehensive evaluation of the potential environmental impacts associated with the proposed project components and activities, is provided;
- (g) include in the ESIA report **comprehensive mitigation and environmental management and monitoring plans**, respectively (*preferably in table matrix format*), that related to the identified potential environmental impacts and risks;
- (h) any other critical environmental aspects/ concerns which may have not been initially foreseen during the preparation of the scoping report and ToR are addressed, and include an evaluation of such concerns in the ESIA report;
- (i) provide details of the various components of the project and **include costs of works, machinery/equipment and land for the project, the estimated cost of the project evidenced by a certificate of valuation of the capital investment of the project, issued by a qualified and registered valuer;**

You are required to pay a non-refundable administration fee of 30% of the total fees payable on submission of the ESIA reports, in accordance with Regulation 49 of the National Environment (Environmental and Social Assessment) Regulations, S.I No. 143 of 2020.

You may proceed with carrying out the ESIA for the proposed Projects.



Waiswa-Ayazika  
**FOR: EXECUTIVE DIRECTOR**



## Appendix B: Proof of ownership/ declaration instrument

### FIRST SCHEDULE

#### STATUTORY INSTRUMENTS

1998 No. 63.

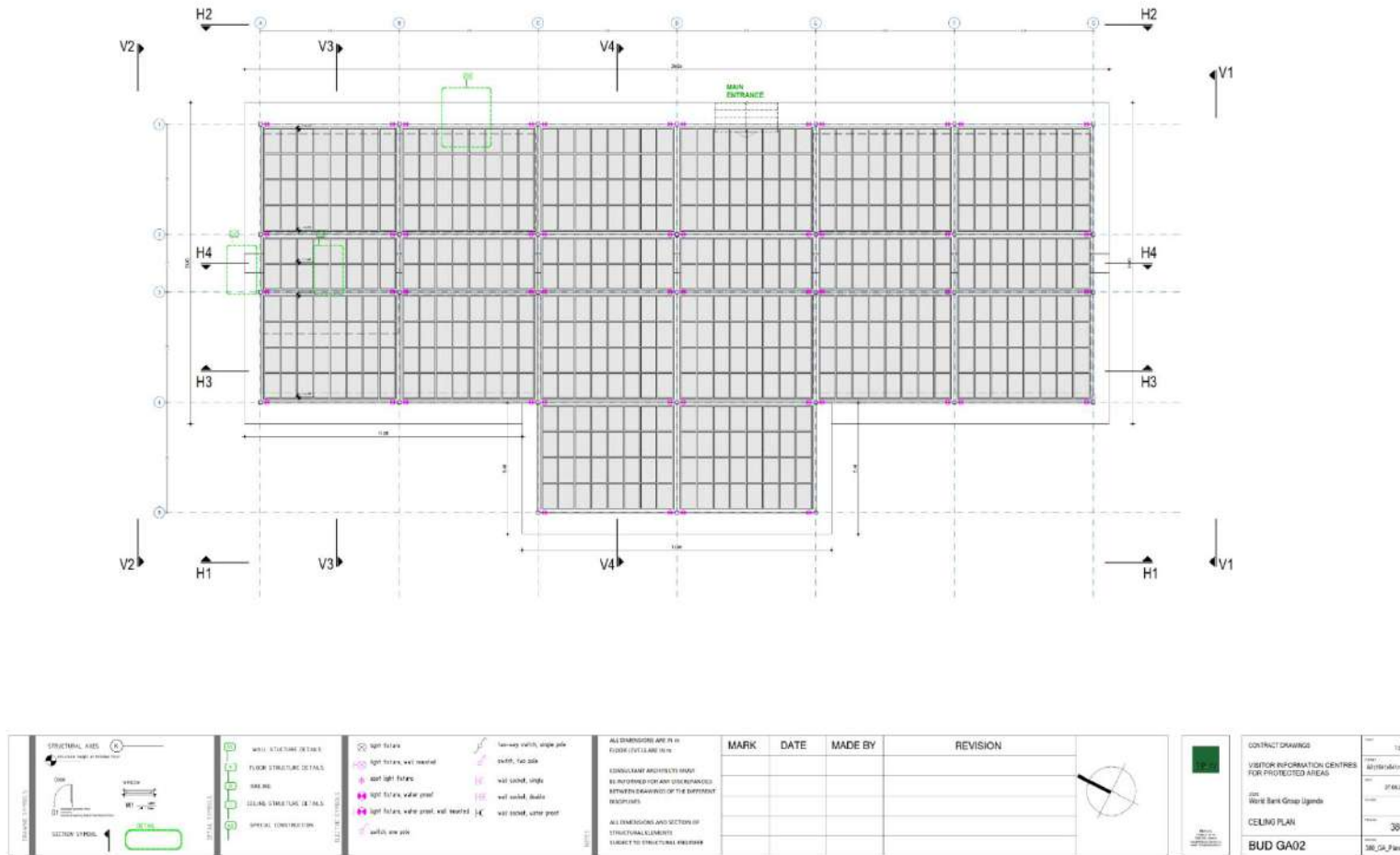
#### **The Forest Reserves (Declaration) Order, 1998**

*(Under sections 4 and 5 of the Forest Act, Cap. 246)*

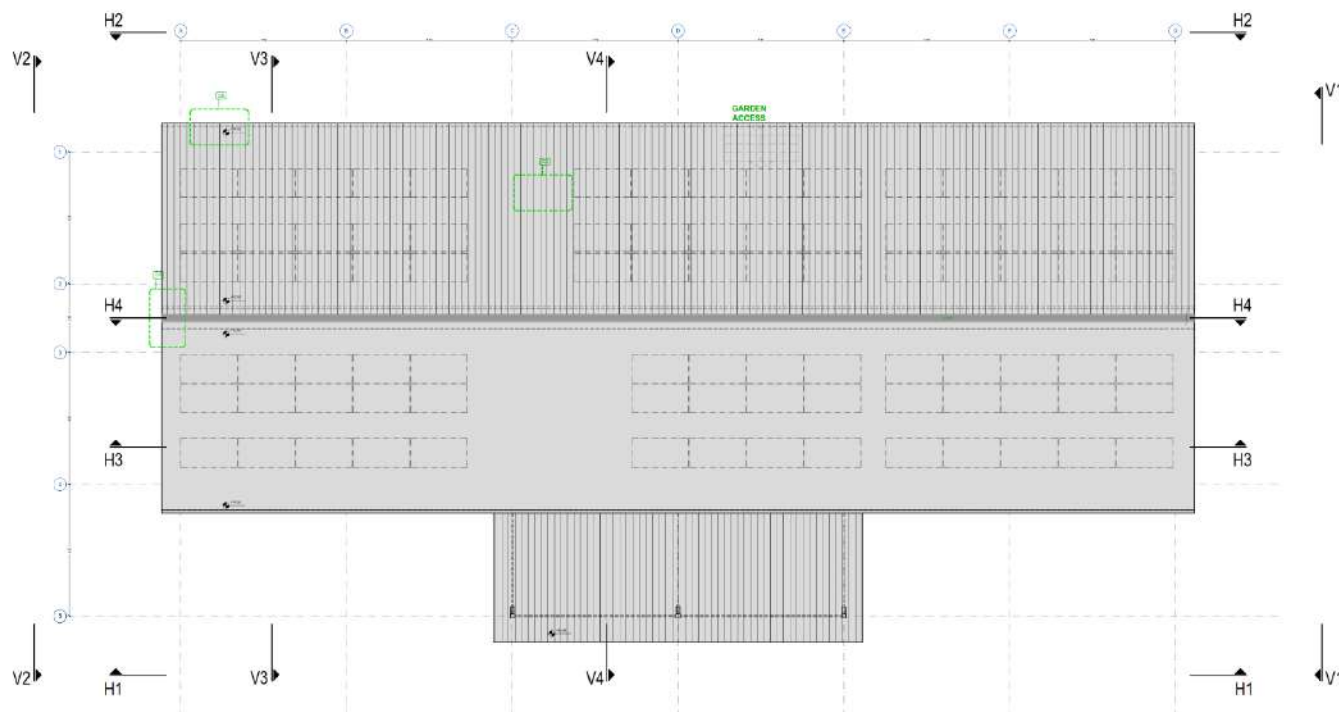
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| IN EXERCISE of the powers conferred on the Minister responsible for water, lands and the environment by sections 4 and 5 of the Forests Act this Order is made this 2 <sup>nd</sup> day of September, 1998                                                                                                                                                                                                                                                                                                                                   | Cap. 246                               |
| 1. This Order may be cited as the Forest Reserves (Declaration) Order, 1998                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Citation                               |
| 2. (1) The areas of land specified in the First Schedule to this Order are declared to be central forest reserves<br><br>(2) Subject to the article 237 of the Constitution and the Forests Act, area declared under subparagraph (1) of this paragraph shall be held in trust, managed and controlled by the government on behalf of the people of Uganda for the common good of all citizens.                                                                                                                                              | Declaration of Central forest reserves |
| 3. (1) The areas of land specified in the Second Schedule to this Order are declared to be local forest reserves<br><br>(2) Subject to article 237 of the Constitution and sub-section (2) of Section 5 of the Forests Act, an area declared under subparagraph (1) shall be held in trust by the respective District Council or Lower Local Government Council for the benefit of the people and for the common good of all citizens.<br><br>(3) An area declared under this paragraph shall be managed as provided for in the Forests Act. | Declaration of local forest reserves   |
| 4. The Forest reserves (Declaration) Order, 1968 is revoked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Revocation of S.I. No. 176 of 1968     |

| Serial Number | Name of Forest           | County                                | Map Sheet Reference    | Boundary Plan No. or Land Registration No. | Approximate area (hectares) |
|---------------|--------------------------|---------------------------------------|------------------------|--------------------------------------------|-----------------------------|
| BN/3          | Mataa                    | Bwamba                                | 56/3                   | BP 1098                                    | 109                         |
| BN/4          | North Rwenzori (part)    | Bwamba                                | 56/1                   | BP 1555                                    | 900                         |
| BN/5          | Nyaburongo               | Bwamba                                | 56/3                   | BP 1098                                    | 174                         |
| BN/7          | Semuliki                 | Bwamba                                | 56/1                   | BP 1036                                    | 21,827                      |
| TOTAL AREA    |                          |                                       |                        |                                            | 23,767                      |
| <b>4.</b>     | <b>BUSHENYI DISTRICT</b> | Series Y.732.D.O.S. SHEET             |                        |                                            |                             |
| BS/2          | Kalinzu                  | Igara, Bunyaruguru                    | 76/3                   | BP 1518                                    | 14,126                      |
| BS/3          | Kasyha-Kitomi (part)     | Igara, Buhweju, Bunyaruguru, Mitocoma | 76/1,2,3,4             | BP 1515, 1516, 1518, 1617                  | 35,388                      |
| BS/6          | North Maramagambo        | Igara, Bunyaruguru                    | 75/4, 84/2             | BP 1084, 1518                              | 29,127                      |
| TOTAL AREA    |                          |                                       |                        |                                            | 78,641                      |
| <b>5.</b>     | <b>GULU DISTRICT</b>     | Series Y.732.D.O.S. SHEET             |                        |                                            |                             |
| GL/1          | Abera                    | Achwa                                 | 22/2                   | BP 1106                                    | 1,212                       |
| GU/2          | Abili                    | Omoro                                 | 22/4                   | BP 1408                                    | 5                           |
| GU/3          | Amuka                    | Achwa                                 | 22/2                   | BP 1106                                    | 1,101                       |
| GU/5          | Bobi                     | Omoro                                 | 22/4                   | BP 1409                                    | 5                           |
| GU/7          | Got-Gweno                | Kilak                                 | 22/1                   | BP 1215                                    | 2,310                       |
| GU/8          | Gulu                     | Achwa                                 | 22/2                   | BP 1553                                    | 93                          |
| GU/9          | Gwengidiya               | Kilak                                 | 22/3                   | BP 1289                                    | 171                         |
| GL/10         | Keyo                     | Kilak                                 | 22/1                   | BP 1382                                    | 759                         |
| GU/11         | Kilak                    | Kilak                                 | 13/4, 14/3, 21/2       | P 1113                                     | 10,205                      |
| GU/13         | Labala                   | Kilak                                 | 13/4, 14/3, 21/2, 21/1 | BP 1113                                    | 1,673                       |
| GU/14         | Lagute                   | Achwa                                 | 22/2                   | BP 1106                                    | 332                         |
| GU/15         | Lukodi                   | Achwa                                 | 22/2                   | BP 1140                                    | 163                         |
| GU/16         | Olwal                    | Kilak                                 | 22/1                   | BP 1398                                    | 1,386                       |
| GU/17         | Opaka                    | Omoro                                 | 22/4                   | BP 1376                                    | 210                         |
| GU/18         | Opit (part)              | Moro                                  | 22/4, 23/3             | BP 1064                                    | 3,509                       |
| GU/19         | Opok                     | Omoro                                 | 22/2                   | BP 1376                                    | 536                         |
| GU/22         | Wiceri                   | Kilak                                 | 21/2                   | BP 1113                                    | 6,470                       |
| TOTAL AREA    |                          |                                       |                        |                                            | 30,140                      |
| <b>6.</b>     | <b>HOIMA DISTRICT</b>    | Series Y 732. D.O.S. SHEET            |                        |                                            |                             |
| HO/1          | Budongo (part)           | Bugahya                               | 38/4                   | BP 1616                                    |                             |
| HO/2          | Bugoma                   | Buhaguzi                              | 47/2, 4, 48/1,3        | BP 1507, 1637                              | 41,144                      |
| HO/3          | Bujawe                   | Bugahya                               | 38/3, 48/1             | BP 1149                                    | 4,869                       |
| HO/5          | Ibamba                   | Ugahya                                | 48/2                   | BP 1432                                    | 313                         |
| HO/6          | Kahurukobwire            | Bugahya                               | 41/8                   | BP 1262                                    | 1,088                       |
| HO/7          | Kandanda-Ngobya          | Bugahya                               | 48/2, 49/1             | BP 1432                                    | 2,556                       |
| HO/9          | Kyahaiguru               | Bugahya                               | 48/2                   | BP 1432                                    | 422                         |
| HO/10         | Kyamugongo               | Bugahya                               | 38/4                   | BP 1432                                    | 117                         |
| HO/11         | Mpanza                   | Bugaguzi                              | 48/1,3                 | BP 1431                                    | 544                         |
| HO/12         | Mukihani                 | Bugahya                               | 38/4, 48/2             | BP 1432                                    | 3,619                       |
| HO/13         | Wambabya                 | Bugahya, Buhaguzi                     | 48/1                   | BP 1588                                    | 3,429                       |
| TOTAL AREA    |                          |                                       |                        |                                            | 58,738                      |
| <b>7.</b>     | <b>IGANGA DISTRICT</b>   | Series Y 732. D.O.S. SHEET            |                        |                                            |                             |
| IG/1          | Budunda                  | Busiki                                | 63/2                   | BP 1264                                    | 106                         |
| IG/2          | Bugaali                  | Busiki                                | 63/2                   | BP 1264                                    | 117                         |
| IG/3          | Bugiri                   | Bukoli                                | 63/3,4                 | BP 1022                                    | 16                          |
| IG/4          | Bukaleba                 | Bunya                                 | 72/2                   | BP 1632                                    | 9,663                       |

## Appendix C: Architectural Drawings

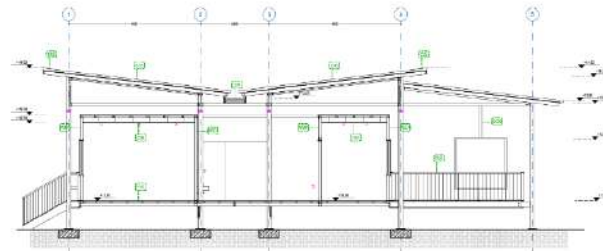




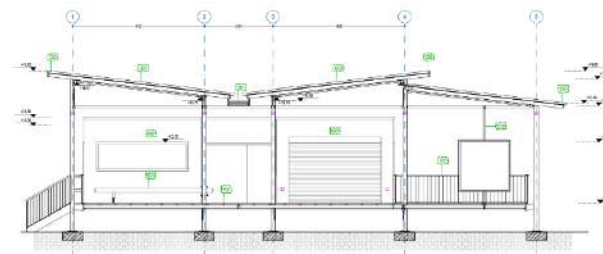


| <div><div>STRUCTURAL AXES</div><div></div><div>SECTION SYMBOL</div><div></div></div> | <div><div>WALL STRUCTURE DETAILS</div><div>FLOOR STRUCTURE DETAILS</div><div>TRAILING</div><div>EXTERNAL STRUCTURE DETAILS</div><div>SPECIAL CONSTRUCTION</div></div> | <div><div>ELECTRIC SYMBOLS</div><div><br/>light fixture</div><div><br/>light fixture, wall mounted</div><div><br/>wall light fixture</div><div><br/>light fixture, water proof</div><div><br/>light fixture, water proof, wall mounted</div><div><br/>switch, one pole</div><div><br/>two-way switch, single pole</div><div><br/>switch, two pole</div><div><br/>wall socket, single</div><div><br/>wall socket, double</div><div><br/>wall socket, water proof</div></div> | <div><div>NOTES</div><div>ALL DIMENSIONS ARE IN mm<br/>FLOOR LEVELS ARE BY 0</div><div>CONSULT ARCHITECTS MUST<br/>BE INFORMED FOR ANY DISCREPANCIES<br/>DETAILS DRAWINGS OF THE DIFFERENT<br/>DISCREPANCIES</div><div>ALL DIMENSIONS AND SECTION ON<br/>STRUCTURAL ELEMENTS<br/>SUBJECT TO STRUCTURAL ENGINEER</div></div> | <table><tr><th>MARK</th><th>DATE</th><th>MADE BY</th><th>REVISION</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table> | MARK | DATE | MADE BY | REVISION |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <div></div> | <div><div></div><div><div>CONTRACT DRAWINGS</div><div>133</div><div>VISITOR INFORMATION CENTRES<br/>FOR PROTECTED AREAS</div><div>AD/10166/1/100</div><div>27.06.22</div><div>World Bank Group Uganda</div><div>ROOF PLAN</div><div>380</div><div>BUD GA03</div><div>280_GA_P100</div></div></div> |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|---------|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARK                                                                                 | DATE                                                                                                                                                                  | MADE BY                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | REVISION                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                         |      |      |         |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |             |                                                                                                                                                                                                                                                                                                    |
|                                                                                      |                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |      |      |         |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |             |                                                                                                                                                                                                                                                                                                    |
|                                                                                      |                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |      |      |         |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |             |                                                                                                                                                                                                                                                                                                    |
|                                                                                      |                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |      |      |         |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |             |                                                                                                                                                                                                                                                                                                    |
|                                                                                      |                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |      |      |         |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |             |                                                                                                                                                                                                                                                                                                    |





SECTION V3

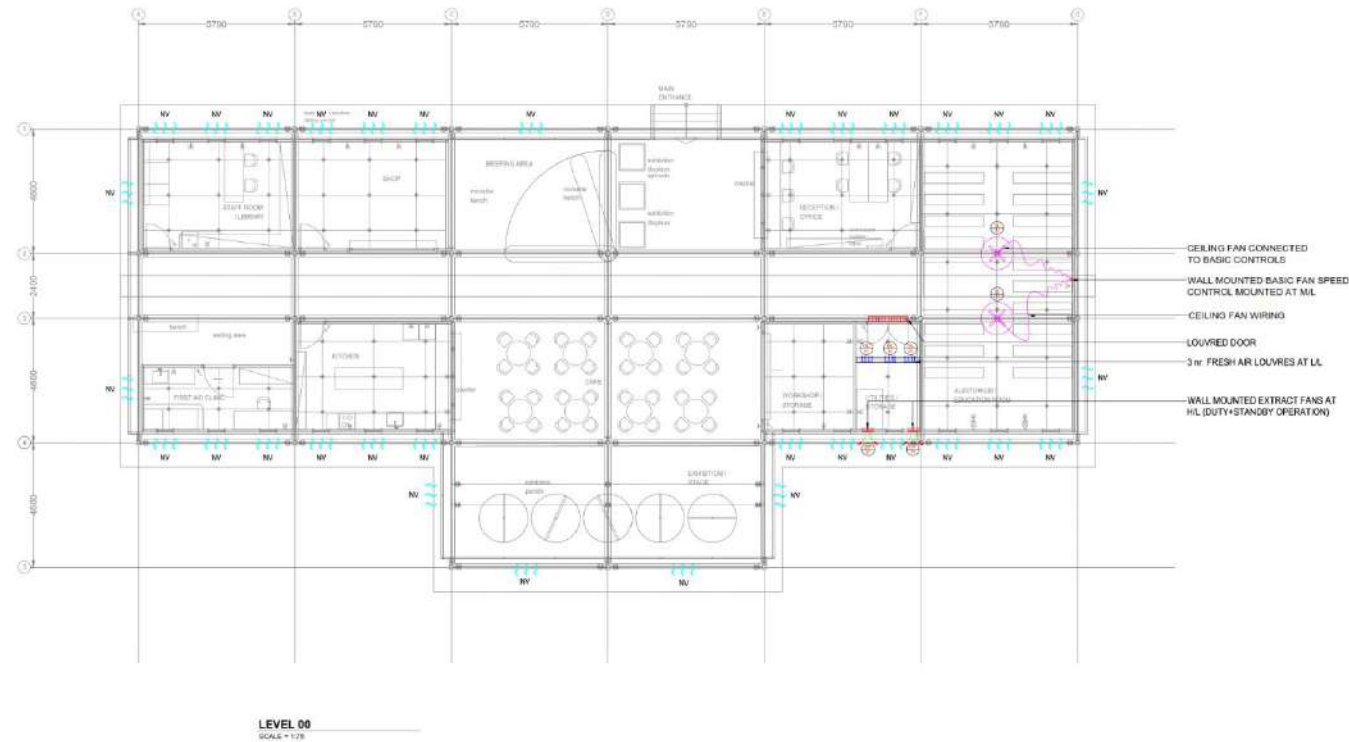


SECTION V4

|                  |  |                        |  |                         |  |         |  |                          |  |                      |  |                   |  |                                          |  |                                                                                       |  |                                                                                       |  |                                                                                     |  |                                                    |  |                |  |
|------------------|--|------------------------|--|-------------------------|--|---------|--|--------------------------|--|----------------------|--|-------------------|--|------------------------------------------|--|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|--|----------------------------------------------------|--|----------------|--|
| STRUCTURAL AREAS |  | ELECTRIC SYMBOLS       |  | ELECTRIC SYMBOLS        |  | NOTES   |  | MARK                     |  | DATE                 |  | MADE BY           |  | REVISION                                 |  |  |  |  |  | CONTRACT NUMBER                                                                     |  | 103                                                |  |                |  |
| SECTION SYMBOL   |  | WALL STRUCTURE DETAILS |  | FLOOR STRUCTURE DETAILS |  | RAILING |  | GROUND STRUCTURE DETAILS |  | SPECIAL CONSTRUCTION |  | pad light fixture |  | light fixture, vapor proof, wall mounted |  | pad light fixture, water proof, wall mounted                                          |  | ALL DIMENSIONS ARE IN M<br>FLOOR LEVELS ARE IN M                                      |  | CONSTRUCTION AND SECTION OF<br>STRUCTURAL MEMBERS<br>SUBJECT TO STRUCTURAL ENGINEER |  | VISITOR INFORMATION CENTRES<br>FOR PROTECTED AREAS |  | AL/Visitor/103 |  |
| 30-108           |  |                        |  |                         |  |         |  |                          |  |                      |  |                   |  |                                          |  |                                                                                       |  |                                                                                       |  | DATE                                                                                |  | 27.06.22                                           |  |                |  |
|                  |  |                        |  |                         |  |         |  |                          |  |                      |  |                   |  |                                          |  |                                                                                       |  |                                                                                       |  | SCALE                                                                               |  | 380                                                |  |                |  |
|                  |  |                        |  |                         |  |         |  |                          |  |                      |  |                   |  |                                          |  |                                                                                       |  |                                                                                       |  | SECTION                                                                             |  | BUD GA04.1                                         |  |                |  |
|                  |  |                        |  |                         |  |         |  |                          |  |                      |  |                   |  |                                          |  |                                                                                       |  |                                                                                       |  | DATE                                                                                |  | 2022-06-27                                         |  |                |  |



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 New York, NY 10024  
 212 875-5000



#### NOTES

1. VENTILATION SYSTEM SHALL BE IN ACCORDANCE WITH THE ASSESSMENT OF AIR QUALITY AND ASSESSMENT OF COMFORT.
2. EXTRACT FANS SHALL BE WALL MOUNTED EXTRACT FANS.
3. EXTRACT FANS SHALL BE WALL MOUNTED EXTRACT FANS.
4. EXTRACT FANS SHALL BE WALL MOUNTED EXTRACT FANS.
5. EXTRACT FANS SHALL BE WALL MOUNTED EXTRACT FANS.
6. EXTRACT FANS SHALL BE WALL MOUNTED EXTRACT FANS.

#### LEGEND

- NV - NATURAL VENTILATION
- WV - WALL MOUNTED EXTRACT FAN
- CEILING FAN
- CEILING FAN WIRING
- LOUVERED DOOR
- 3 nr FRESH AIR LOUVRES AT LL
- WALL MOUNTED EXTRACT FANS AT HL (DUTY+STANDBY OPERATION)

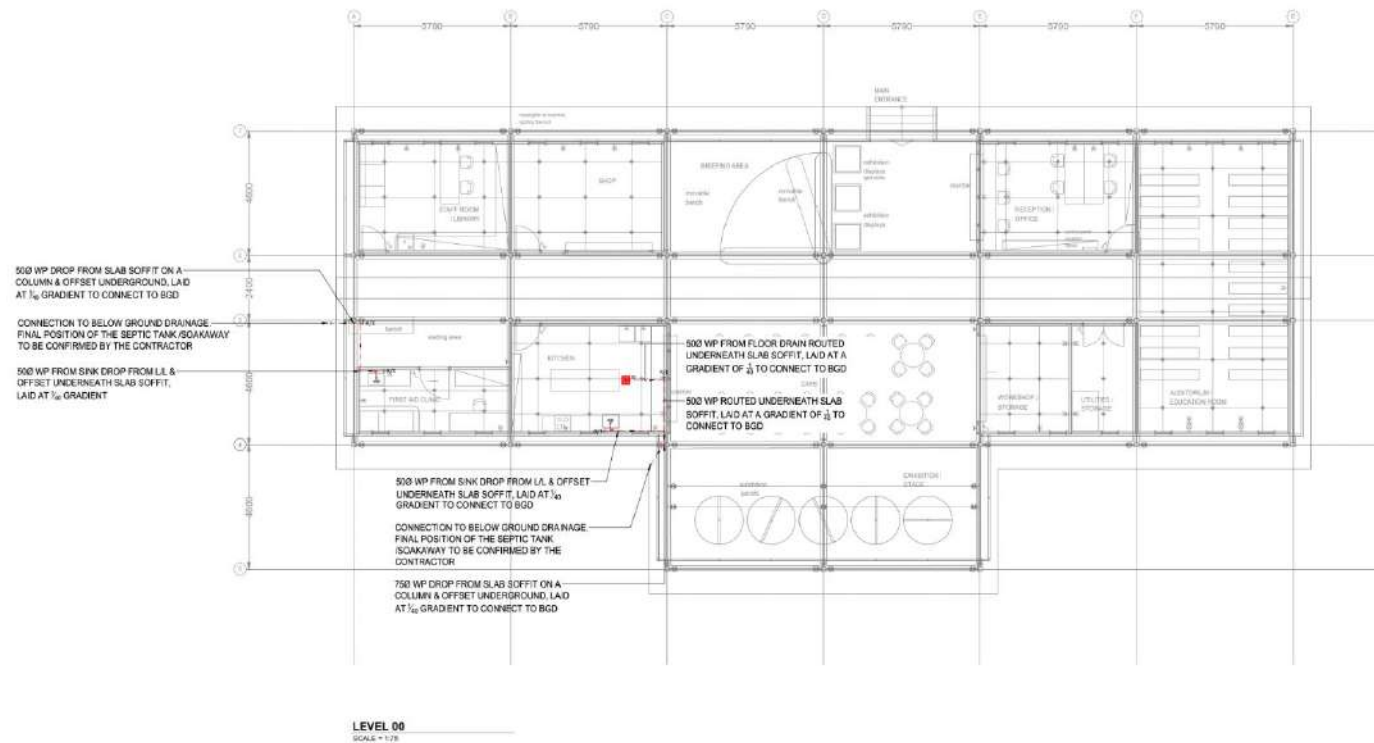
| NO. | DESCRIPTION                                              | QTY | UNIT | REMARKS |
|-----|----------------------------------------------------------|-----|------|---------|
| 1   | WALL MOUNTED EXTRACT FAN                                 | 1   | EA   |         |
| 2   | CEILING FAN                                              | 1   | EA   |         |
| 3   | CEILING FAN WIRING                                       | 1   | EA   |         |
| 4   | LOUVERED DOOR                                            | 1   | EA   |         |
| 5   | 3 nr FRESH AIR LOUVRES AT LL                             | 1   | EA   |         |
| 6   | WALL MOUNTED EXTRACT FANS AT HL (DUTY+STANDBY OPERATION) | 1   | EA   |         |

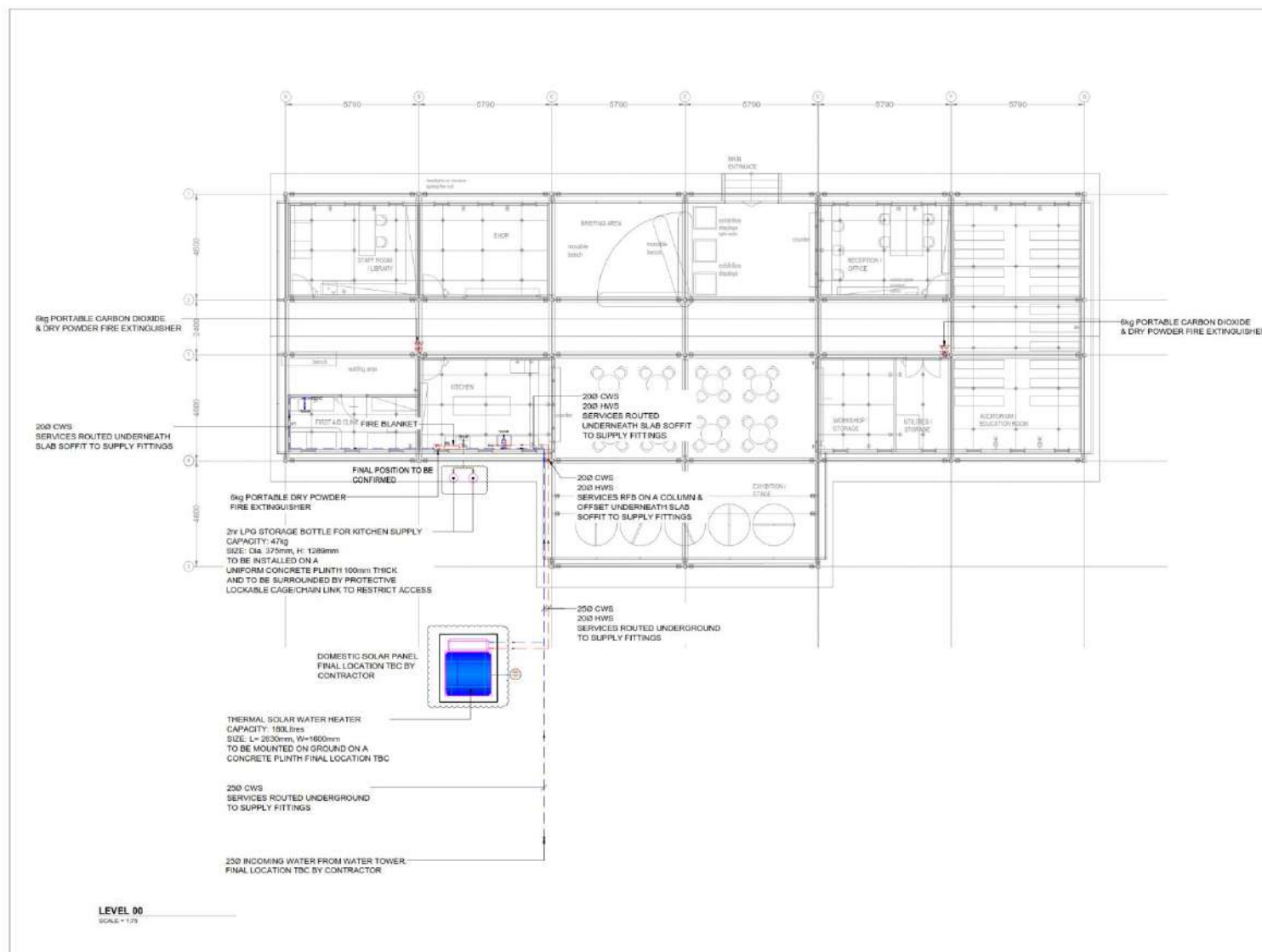
| NO. | DESCRIPTION                                              | QTY | UNIT | REMARKS |
|-----|----------------------------------------------------------|-----|------|---------|
| 1   | WALL MOUNTED EXTRACT FAN                                 | 1   | EA   |         |
| 2   | CEILING FAN                                              | 1   | EA   |         |
| 3   | CEILING FAN WIRING                                       | 1   | EA   |         |
| 4   | LOUVERED DOOR                                            | 1   | EA   |         |
| 5   | 3 nr FRESH AIR LOUVRES AT LL                             | 1   | EA   |         |
| 6   | WALL MOUNTED EXTRACT FANS AT HL (DUTY+STANDBY OPERATION) | 1   | EA   |         |

| NO. | DESCRIPTION                                              | QTY | UNIT | REMARKS |
|-----|----------------------------------------------------------|-----|------|---------|
| 1   | WALL MOUNTED EXTRACT FAN                                 | 1   | EA   |         |
| 2   | CEILING FAN                                              | 1   | EA   |         |
| 3   | CEILING FAN WIRING                                       | 1   | EA   |         |
| 4   | LOUVERED DOOR                                            | 1   | EA   |         |
| 5   | 3 nr FRESH AIR LOUVRES AT LL                             | 1   | EA   |         |
| 6   | WALL MOUNTED EXTRACT FANS AT HL (DUTY+STANDBY OPERATION) | 1   | EA   |         |

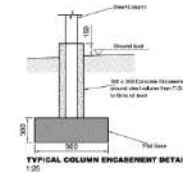
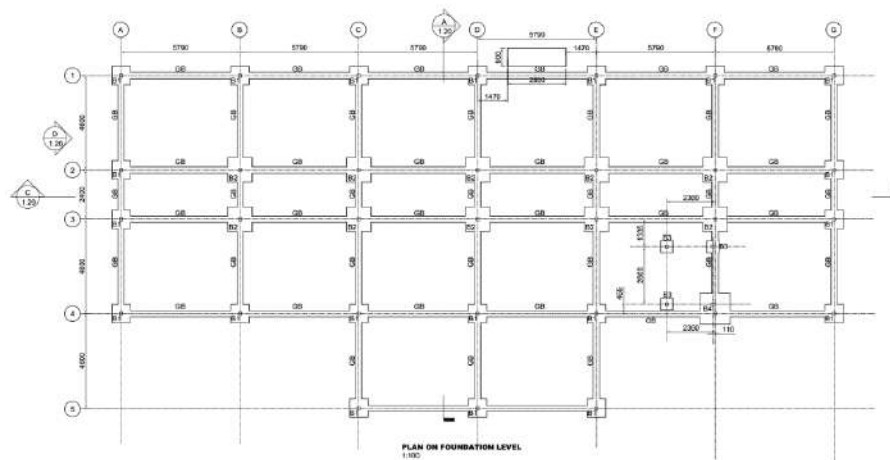
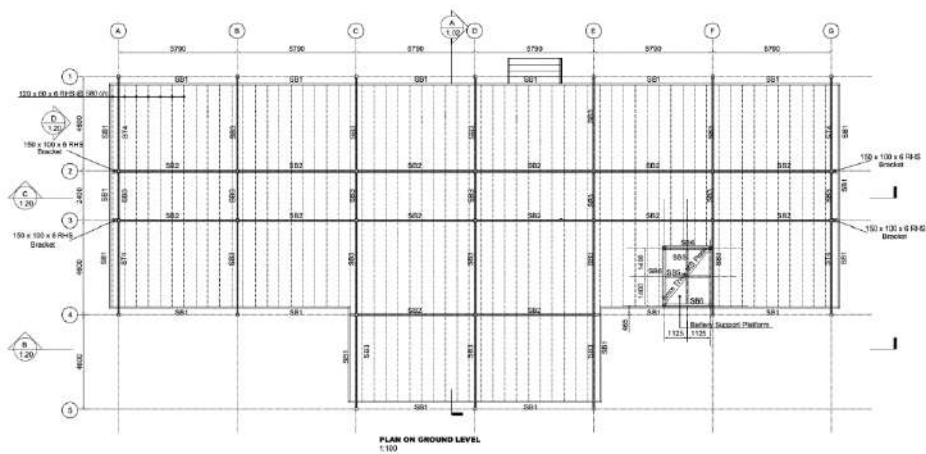
| NO. | DESCRIPTION                                              | QTY | UNIT | REMARKS |
|-----|----------------------------------------------------------|-----|------|---------|
| 1   | WALL MOUNTED EXTRACT FAN                                 | 1   | EA   |         |
| 2   | CEILING FAN                                              | 1   | EA   |         |
| 3   | CEILING FAN WIRING                                       | 1   | EA   |         |
| 4   | LOUVERED DOOR                                            | 1   | EA   |         |
| 5   | 3 nr FRESH AIR LOUVRES AT LL                             | 1   | EA   |         |
| 6   | WALL MOUNTED EXTRACT FANS AT HL (DUTY+STANDBY OPERATION) | 1   | EA   |         |

| NO. | DESCRIPTION                                              | QTY | UNIT | REMARKS |
|-----|----------------------------------------------------------|-----|------|---------|
| 1   | WALL MOUNTED EXTRACT FAN                                 | 1   | EA   |         |
| 2   | CEILING FAN                                              | 1   | EA   |         |
| 3   | CEILING FAN WIRING                                       | 1   | EA   |         |
| 4   | LOUVERED DOOR                                            | 1   | EA   |         |
| 5   | 3 nr FRESH AIR LOUVRES AT LL                             | 1   | EA   |         |
| 6   | WALL MOUNTED EXTRACT FANS AT HL (DUTY+STANDBY OPERATION) | 1   | EA   |         |









#### FOUNDATION SCHEDULE

|    |                 |
|----|-----------------|
| S1 | 900x1000x300dp  |
| S2 | 1200x1200x400dp |
| S3 | 900x1000x300dp  |
| S4 | 1500x1500x500dp |

| REF | SIZES             |
|-----|-------------------|
| S81 | 280 x 50 x 35 PFC |
| S82 | 305 x 105 x 40 LB |
| S83 | PI: 610           |
| S84 | 75 x 75 x 4 SHS   |
| S85 | 150 x 150 x 6 SHS |
| S86 | 204 x 148 x 31 LB |
| S87 | 200 x 150 x 5 RHS |

ALL COLOURS ARE 100 x 150 x 5 SHG UND

|    |                                    |
|----|------------------------------------|
| GB | 300watt e 300kg RC<br>Gruppi Bazar |
|----|------------------------------------|

1. The following are the main components of the system:

- 1.1. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.2. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.3. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.4. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.5. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.6. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.7. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.8. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.9. The system is designed to provide a secure and reliable environment for the storage and management of data.
- 1.10. The system is designed to provide a secure and reliable environment for the storage and management of data.

2. The system is designed to provide a secure and reliable environment for the storage and management of data.

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10. The system is designed to provide a secure and reliable environment for the storage and management of data.

NOTES:

1. ALL LEVELS TO BE EXAMINED
2. ALL COLUMNS CONTAINED IN A SINGLE COLUMNED SYSTEM

1. EXAMINING FOR VIOLATIONS TO THE PROHIBITION ON DISCRIMINATION
2. ADDRESSING VIOLATIONS TO THE PROHIBITION ON DISCRIMINATION
3. ADDRESSING VIOLATIONS TO THE PROHIBITION ON DISCRIMINATION

**CONCRETE NOTES:**

1. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH 0105
2. CONCRETE CLASS TO BE AS FOLLOWS:  
IS 4610 (M 30) (Slabs and beams support slab)  
IS 4610 (M 20) (Columns)

3. All findings, procedures, and data that were obtained and produced in conducting this project shall be available to the research community upon request, including electronic data.
4. The investigator shall ensure the integrity of all primary research

6. CONTRACTING OUTSIDE THE ORGANIZATION (10/20/2010)

6. The frequency of sampling should be such that the space between samples is small enough to ensure that the probability of missing any significant change in the data is small, but is not too small to be considered too expensive, too difficult, or too complex.
7. If the data show significant responsiveness to the test, the test should be used as a screening tool. If the data show no significant responsiveness, the test should be used as a confirmatory tool.

CONCRETE SHALL BE CLASSIFIED AS APPROXIMATELY 25,000 PSI COMPRESSIVE STRENGTH, WITH EFFECTIVE SLAB THICKNESS COMPENSATING FOR VARIATIONS IN STRENGTH. THE EFFECTIVE SLAB THICKNESS SHALL NOT BE LESS THAN 10 INCHES.

1. ALL SANCTIONS BY COUNTRIES SHALL BE STOPPED. COUNTRIES WILL BE ALLOWED TO REEVALUATE THEIR POLICIES.
2. REVENUE TO GOVERNMENTS FROM EXPORTS OF OIL AND MINERAL RESOURCES

5. ALL COMPANY INFORMATION TO BE RELEASED TO COMPANY'S SHAREHOLDERS, INCLUDING, BUT NOT LIMITED TO:
6. COMPANY AND PERSONAL TAX AND FINANCIAL INFORMATION, AS SET FORTH IN THE COMPANY'S 2012 ANNUAL REPORT AND 2013 FIRST QUARTER REPORT.

2. **PROVIDE COMMENTS** (1-2 SENTENCES) TO EACH SPECIFICATION AND DESIGN REQUIREMENT
3. **ALL SPECS & DESIGN REQUIREMENTS**
  - a. **REVISOR** (THE DESIGNER WHO CHANGED THE DESIGN)
  - b. **REVISION** (THE NUMBER OF THE DESIGN CHANGE)
  - c. **REASON** (THE WHY OF THE DESIGN CHANGE)

2. ALL OTHERS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING, SHALL BE SUBJECT TO THE FOLLOWING CONDITIONS:

1. All water bodies in the United States are under the jurisdiction of the U.S. Army Corps of Engineers.

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S.L. ALL STAGE 7080 SPKSD 007 (JND)  
S.S. ALL STAGE 92 02 04X0 006 (JND)  
S.S. ALL STAGE 7080 SPKSD 00  
S.L. STAGE 7080 SPKSD 00

**INTERNAL DELEGATION | INTERNAL PERMITS | STEEL AG**

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大塚ビル17F 299号  
 大塚ビル17F 299号  
 P.O. Box 29902  
 Toronto

**FBW** For more information on this product, call 1-800-368-5868 or visit our website at [www.fbw.com](http://www.fbw.com).

**VISITOR INFORMATION CENTRES**

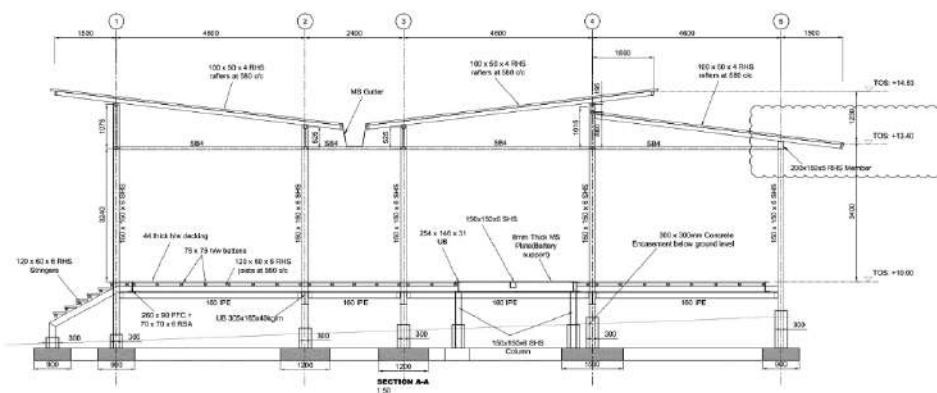
WORLD BANK GROUP UGANDA

| GENERAL ARRANGEMENT              |       |         |
|----------------------------------|-------|---------|
| FOUNDATIONS, GROUND FLOOR LAYOUT |       |         |
| area (sqm)                       | scale | section |
| KINAGAL                          | 1:500 | A-1     |

|             |          |             |       |
|-------------|----------|-------------|-------|
| project no. | division | drawing no. | sheet |
| 2033        | STRUC    | BUD-1.01    | 0     |



| TRUSS ST2, ST3 & ST4 MEMBERS |             |
|------------------------------|-------------|
| BOTTOM CHORD                 | 75x75x4 S4S |
| TOP CHORD                    | 75x75x4 S4S |
| INTERNALS                    | 50x50x3 S4S |



**ARCULISTOS & ASSOCIATES**  
P.O. Box 20490  
Nairobi  
Kenya  
Tel: 011-255-2548111  
Fax: 011-255-2548112  
E-mail: [info@arculistos.com](mailto:info@arculistos.com)

**FBW**

Project location:  
Strg. Joseph D. Daburi

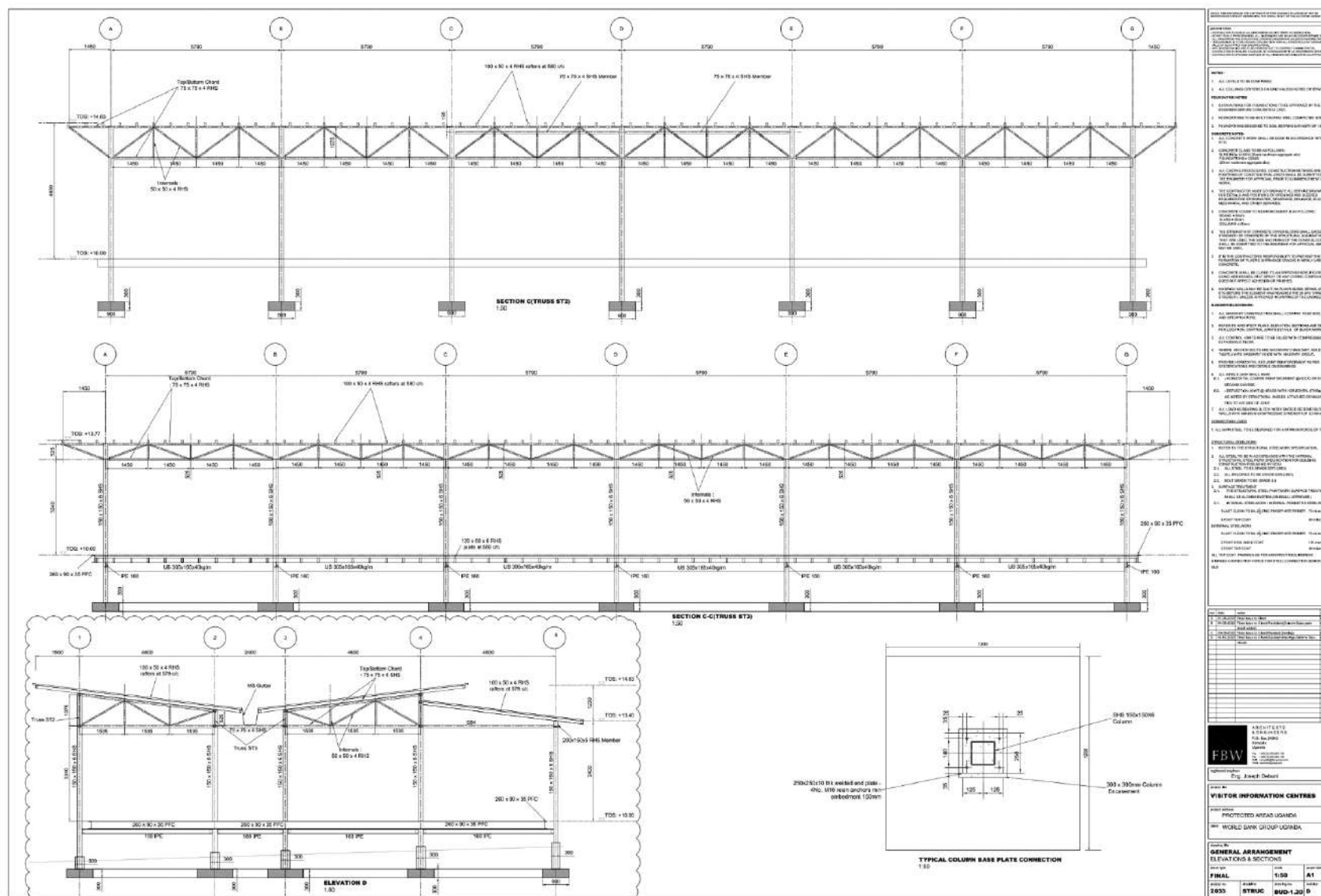
**VISITOR INFORMATION CENTRES**

Project address:  
PROTECTED AREAS UGANDA

2000 WORLD BANK GROUP UGANDA

Working file:  
**GENERAL ARRANGEMENT  
GEOT. LAYOUT & SECTIONS**

|              |              |                 |           |
|--------------|--------------|-----------------|-----------|
| <b>FINAL</b> |              | <b>11/10/08</b> | <b>A1</b> |
| 2003         | <b>STRUC</b> | <b>BUO-1.02</b> | <b>D</b>  |



## Appendix D: Records of stakeholder engagement Consultation with the Local community and CFM's

Table C.1: Summary of issues in meeting with CFM groups and the local community

| Agency: NFA, CFMs, Local leaders, Community members |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                       | 29 <sup>th</sup> June 2022 at St. John Bosco Primary School (36N 329744.43 m E 189928.50 m N)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Meeting attended by:                                | NFA (Budongo CFR) team, St. John Bosco P/S Administration, Local leaders and community members from Akiimi "B", Kalengeja TC, Kalengeja village, Udukuru "A" village, Udukuru "B" village, Kansimo village and Busingiro village                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Issues:                                             | <b>The aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Need to conserve Budongo CFR</i>                 | <ul style="list-style-type: none"> <li>Budongo is an important natural resource to the livelihoods of the surrounding communities and should be conserved to serve the current and future generations</li> <li>The local leaders should disseminate information related to conservation and ecotourism in Budongo CFR to the communities they serve; this will allow for more acceptability of development projects, including the proposed VIC, within those areas</li> <li>The forest supports livelihoods as a source of biomass fuel and rainfall formation that allows for agriculture</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Impact of NFA</i>                                | <ul style="list-style-type: none"> <li>NFA has distributed seedlings among the communities to encourage sustainable tree farming; tree species given to community members include <i>Tectona grandis</i> (Teak tree) and <i>Terminalia spp</i></li> <li>NFA has also supported apiary projects by distributing beehives and training local beekeepers through the CFMs</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Expected benefits</i>                            | <ul style="list-style-type: none"> <li>The VIC will promote tourism by disseminating accurate information on the species, cultures and activities available within the CFR</li> <li>Local communities will make economic gains through the sale of crafts and provision of other tourism-related services.</li> <li>The boost in tourism will also consolidate conservation efforts in the Budongo CFR</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Recommendations</i>                              | <ul style="list-style-type: none"> <li>NFA should create avenues through which the CFM groups can participate in project implementation. This can be through the provision of space and time for exhibitions, dances, poems and musical performances</li> <li>The VIC should have interactive spaces where visitors can wind down, engage in conversation and enjoy the Budongo forest environment.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>Questions and answer session</i>                 | <p><b>Q: Is the VIC a private project or a government program?</b><br/> <b>A:</b> The proposed VIC is being implemented by Government as part of the project "Investing in Forests and Protected Areas" with support from the World Bank Group. The VIC in Budongo will be managed by the National Forestry Authority (NFA).</p> <p><b>Q: Will the VIC be established within the Budongo CFR or within the community?</b><br/> <b>A:</b> The VIC will be established within the Budongo CFR adjacent to the existing NFA structures at Busingiro camp site</p> <p><b>Q: In consideration of the proposed VIC, will NFA fast-track the distribution of tree seedlings within the community?</b><br/> <b>A:</b> Consultative meetings have been held in Kalengeja "A", Kalengeja "B", Kalengeja Trading centre, Udukuru "A" and Udukuru "B" and tree seedlings for <i>Terminalia</i> (Umbrella tree) will be distributed among the communities from the 30<sup>th</sup> of June 2022.</p> |



|        |                                                                                                                                                                                                                                                                                                                                                                                |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p><b>Q: How does NFA resolve incidences of wild animals attacking people in the community or destroying gardens?</b></p> <p><b>A:</b> Human – wildlife conflicts issues are resolved jointly with the Uganda Wildlife Authority in accordance with the National regulatory framework and in consultation with the relevant stakeholders.</p>                                  |
| Plates | <div>  <p>Plate C.1: Project disclosure during the consultative meeting at St. John Bosco P/S</p> </div> <div>  <p>Plate C.2: Local leaders expressing their views at the consultative meeting</p> </div> |



**Stakeholders' Consultation Record**

|                                           |                                                                                |        |            |        |          |
|-------------------------------------------|--------------------------------------------------------------------------------|--------|------------|--------|----------|
| Project name/Code:                        | GFA 220109 ESIA FOR THE PROPOSED VIL AT BUSINGIRO CAMP SITE IN BUDONGO FOREST. |        |            |        |          |
| Date:                                     | 30-JUNE-2022                                                                   |        |            |        |          |
| Proponent:                                | NFA                                                                            |        |            |        |          |
| Location:                                 | Village                                                                        | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | AKIMI B                                                                        | GABOYA | KIHUNGYA   | BULISA | BULISA   |

**Purpose of the consultation: Environmental and Social Impact Assessment**

| Name of person/official | Designation & Contact (Tel / Mail)           | Key Issues Raised / Discussed | Signature/Initial                                                                     |
|-------------------------|----------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| Mubokhisa Robert        | Sector Manager<br>Budongo<br>0779522969      |                               |    |
| Ssemu John Kennedy      | Forest Supervisor<br>Biso beat<br>0789477791 |                               |  |

| KAKOZA JASTER            | BISO<br>FFU |                    |  |
|--------------------------|-------------|--------------------|-------------------------------------------------------------------------------------|
|                          |             |                    |                                                                                     |
|                          |             |                    |                                                                                     |
| Follow-up   Action Items |             | Person Responsible | Deadline                                                                            |
|                          |             |                    |                                                                                     |
|                          |             |                    |                                                                                     |
| Attachments:             |             |                    |                                                                                     |

Consultations by: .....

Signature: .....

Inquiries and comments please forward to: [talk2gissat@mail.com](mailto:talk2gissat@mail.com)

### Stakeholders' Consultation Record

|                                           |                                                                                                                                                |          |            |        |          |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|--------|----------|
| Project name                              | Code: GEA 220109. Environment & Social Impact Assessment for the proposed Visitor Information Centre at Busingiro camp site in Budongo Forest. |          |            |        |          |
| Date:                                     | 30 <sup>th</sup> JUNE 2022.                                                                                                                    |          |            |        |          |
| Proponent                                 | NFA.                                                                                                                                           |          |            |        |          |
| Location:                                 | Village                                                                                                                                        | Parish   | Sub-County | County | District |
| Individuals / Organizations in Attendance | AKIMI-B                                                                                                                                        | GARASOYA | KIHUNGYA   | BULISA | BULISA   |

### Purpose of the consultation: Environmental Impact Assessment

| Name of person/official | Designation & Contact (Tel   Mail)                                 | Key Issues Raised / Discussed | Signature/ Initial                                                                               |
|-------------------------|--------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------|
| KETWABIE ALFRED         | 0757196961<br>0770794950<br>HEAD TEACHER<br>ST JOHN BOSCO P/SCHOOL |                               | <br><br>c/g/v |
| KYAMANYWA TEGRALE       | 0778986894                                                         |                               |                                                                                                  |

**Abakwetagisa/Abakolagana Obuhandike**

|                       |                                                                                       |          |            |        |              |
|-----------------------|---------------------------------------------------------------------------------------|----------|------------|--------|--------------|
| Ibara lya porojekiti: | Environment & Social Impact Assessment for the proposed visitor Information Centre at |          |            |        |              |
| Ebiroyokwezi:         | 30 <sup>th</sup> JUNE 2022.                                                           |          |            |        |              |
| Mukama wa Porojekiti  | NFA.                                                                                  |          |            |        |              |
| Ekikyweka:            | Ekyaro                                                                                | Omuruka  | Igomborora | Isaza  | Disiturikiti |
| Kampuni               | AKIMI B                                                                               | GARASOYA | KIHUNGYA   | BULISA | BULISA       |

**Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti**

| Ibara             | Omulingwo gwokutunga<br>(Esimu) | Ebintu byamany ebikwatana hali eno porojekiti | Omukono/Ekinkumu |
|-------------------|---------------------------------|-----------------------------------------------|------------------|
| KARUNGI<br>JANEY  |                                 |                                               |                  |
| LUCINA<br>NGAMETA |                                 |                                               |                  |
|                   |                                 |                                               |                  |



**Abakwetagisa/Abakolagana Obuhandike**

|                       |                                                                                        |          |            |        |              |
|-----------------------|----------------------------------------------------------------------------------------|----------|------------|--------|--------------|
| Ibara Iya porojekiti: | Environment & Social Impact Assessment for the Proposed Visitor Information Centres at |          |            |        |              |
| Ebirobyokwezi:        | 30 <sup>th</sup> JUNE 2022.                                                            |          |            |        |              |
| Mukama wa Porojekiti  | NFA. Busingiro camp site in Budongo forest.                                            |          |            |        |              |
| Ekikyweka:            | Ekyaro                                                                                 | Omuruka  | Igomborora | Isaza  | Disiturikiti |
| Kampuni               | AKIIMI B                                                                               | GARASOYA | KIHUNGYA   | BULISA | BULISA.      |

**Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti**

| Ibara                  | Omulingwo gwokutungwa (Esimu)                        | Ebintu byamani ebikwatana hali eno porojekiti | Omukono/Ekinkumu |
|------------------------|------------------------------------------------------|-----------------------------------------------|------------------|
| AHEEBWA MOSES          | L.C.I C/PERSON<br>KAKENGEVIL<br>0780703928           |                                               |                  |
| BYARUHANGA CHRISTOPHER | L.C.I C/PERSON<br>KALENGEVI<br>VILLAGE<br>0783037603 |                                               |                  |
| CHUSA MICHAEL          | L.C.I C/PERSON<br>UDUKURU<br>VILLAGE<br>0785147311   |                                               |                  |





**Abakwetagisa/Abakolagana Obuhandike**

|                       |                                                                                                                             |          |            |        |              |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|----------|------------|--------|--------------|
| Ibara lya porojekiti: | Environment & Social Impact Assessment for the Proposed Visitor Information Centres at Busingiro campsite in Budongo forest |          |            |        |              |
| Ebirobyokwezi:        | 30 <sup>th</sup> JUNE 2022.                                                                                                 |          |            |        |              |
| Mukama wa Porojekiti  | NFA.                                                                                                                        |          |            |        |              |
| Ekikyweka:            | Ekyaro                                                                                                                      | Omuruka  | Igomborora | Isaza  | Disiturikiti |
| Kampuni               | AKIMI-B                                                                                                                     | GARASOYA | KIHUNGA    | BULIKA | BULISA.      |

**Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti**

| Ibara               | Omulingwo gwokutunga (Esimu)                 | Ebintu byamany ebikwatana hali eno porojekiti | Omukono/Ekinkumu |
|---------------------|----------------------------------------------|-----------------------------------------------|------------------|
| OGUGU<br>DIEDONE    | L.C.I C/PERSON<br>YDUKURU 'A'<br>0770.833768 |                                               |                  |
| ATUGOISA<br>KENNETH | L.C.I C/PERSON<br>KANSIMO<br>0779402043      |                                               |                  |
| OWONDA<br>MANUEL    | UDUKURU 'A'<br>L.C.I. D.F.C                  |                                               |                  |

**Abakwetagisa/Abakolagana Obuhandike**

|                       |                                                                                                                                            |          |            |       |              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|-------|--------------|
| Ibara lya porojekiti: | CFA 220109 - Environment & social Impact Assessment for the proposed visitor Information centres at Busingiro camp site in Budongo forest. |          |            |       |              |
| Ebiroyokwezi:         | 30 <sup>th</sup> JUNE 2022.                                                                                                                |          |            |       |              |
| Mukama wa Porojekiti  | NFA.                                                                                                                                       |          |            |       |              |
| Ekikyweka:            | Ekyaro                                                                                                                                     | Omuruka  | Igomborora | Isaza | Disiturikiti |
| Kampuni               | AKIMI B                                                                                                                                    | GARASOYA | KIHUNGYA   | BULWA | BULWA        |

**Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti**

| Ibara            | Omulingwo gwokutunga (Esimu)                   | Ebintu byamany ebikwatana hali eno porojekiti | Omukono/Ekinkumu |
|------------------|------------------------------------------------|-----------------------------------------------|------------------|
| UWINGI CHARLES   | C/PERSON WEI<br>AKIMI "B" VILLAGE<br>079940057 |                                               |                  |
| Jumwessige AUREA | Member<br>0715783683                           |                                               |                  |
| Okech Alex       | C/Man L.C.I<br>0782321263                      |                                               |                  |

### Stakeholders' Consultation Record

|                                           |                                                                                                                              |          |            |         |          |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------|------------|---------|----------|
| Project name  Code: GEA 220109            | Environment & Social Impact Assessment for the proposed Visitor Information Centre at Busingiro camp site in Budongo forest. |          |            |         |          |
| Date:                                     | 30 <sup>th</sup> JUNE 2022.                                                                                                  |          |            |         |          |
| Proponent                                 | NFA                                                                                                                          |          |            |         |          |
| Location:                                 | Village                                                                                                                      | Parish   | Sub-County | County  | District |
| Individuals / Organizations in Attendance | AKIIMI B                                                                                                                     | GARASOYA | KIHUNYA    | BULIISA | BULIISA. |

### Purpose of the consultation: Environmental Impact Assessment

| Name of person/official | Designation & Contact (Tel   Mail) | Key Issues Raised / Discussed | Signature/ Initial                                                                    |
|-------------------------|------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| ODONGO JACOB            | AKIIMI 'B'<br>077832 8079          |                               |    |
| MUGISA EDISON           | 0776059117<br>KANSIMO              |                               |  |

### Stakeholders' Consultation Record

|                                           |                                                                                                                                           |          |            |         |          |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|---------|----------|
| Project name  Code:                       | GEA 220109. Environment & Social Impact Assessment for the proposed Visitor Information Centres at Busingiro camp site in Budongo Forest. |          |            |         |          |
| Date:                                     | 30 JUNE 2022.                                                                                                                             |          |            |         |          |
| Proponent:                                | NFA                                                                                                                                       |          |            |         |          |
| Location:                                 | Village                                                                                                                                   | Parish   | Sub-County | County  | District |
| Individuals / Organizations in Attendance | AKIIMI B                                                                                                                                  | GARASOYA | KIHUNGYA   | BULIISA | BULIISA. |

### Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel / Mail)      | Key Issues Raised / Discussed | Signature / Initial                                                                 |
|-------------------------|-----------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| ITHOROM<br>MICHAEL      | C/PERSON LEJ<br>Busingiro<br>0780728954 |                               |  |
|                         |                                         |                               |                                                                                     |



## Consultation with the Buliisa District Local Government

Table C.2: Summary of issues in meeting with Buliisa District local Government

| Agency: NFA, CFMs, Local leaders, Community members |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                       | 30 <sup>th</sup> of May 2022 at the Buliisa District Local Government Headquarters (36N 324030.68 m E 232632.99 m N)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Meeting attended by:                                | <b>Representatives:</b> <ol style="list-style-type: none"> <li>1. Mr Tibasima Gilbert, District Vice Chairperson</li> <li>2. Mr Tumusiime Rogers – District Environment Officer</li> <li>3. Mr Barugahara Benard Atwooki - District Community Development Officer</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Issues:                                             | <b>The aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>Relevance of tourism to Buliisa DLG</i>          | <ul style="list-style-type: none"> <li>• Tourism is a major source of revenue for the district. Funds received as part of revenue sharing have allowed the District Local Government to implement several community development initiatives.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>Expected benefits from the VIC</i>               | <ul style="list-style-type: none"> <li>• The VIC will promote tourism by disseminating accurate information on the species, cultures and activities available within the CFR</li> <li>• Local communities will make economic gains through the sale of crafts, musical performances and provision of other tourism-related services.</li> <li>• The VIC will help to extend/share knowledge with academia, students and researchers</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <i>Recommendations</i>                              | <ul style="list-style-type: none"> <li>• The establishment of the VIC is obliged to have an environmental/ conservation/ tourism focal person</li> <li>• Technical guidance to protect the environment and natural resources shall be sought from an expert before the establishment of the VIC</li> <li>• An ESIA shall be conducted for the VIC to ensure project activities do not interfere with wildlife within the CFR</li> <li>• The Proponent shall adopt the measures to ensure construction and landscaping activities are not a source of invasive species within the CFR</li> <li>• The VIC should promote local content and offer fairly priced crafts; this will enhance gains made by local tourists to the facility</li> <li>• With the increase in cases of human-wildlife conflicts, considerations should be made to ensure the safety of personnel and property at the VIC.</li> <li>• The Proponent should consider naming the VIC after historically significant persons, events or locations; this will increase project acceptance among the local tourists and the indigenous communities.</li> <li>• Information relating to the history of the human-wildlife conflicts in the area should be disseminated at the VIC; this will increase awareness of the ongoing challenges and improve dialogue on the recommended way forward.</li> <li>• The history and heritage of indigenous communities such as the Batyawa, Bagungu, and the Bakibiro should be included as part of the cultural tourism products at the VIC.</li> <li>• The construction workers should be sensitized to desist from social vices and criminal activities</li> </ul> |



*Plates*



Plate C.3: Meeting with Buliisa District Environment Officer



Plate C.4: Meeting with Buliisa CDO



Plate C.5: Meeting with Deputy LC5 chairperson



**Gissat Inc**  
exceptional eco solutions

### Stakeholders' Consultation Record

|                                           |                                                                                                                                        |               |                   |        |                 |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------|-----------------|
| Project name/Code:                        | Environment & Social Impact Assessment for the proposed visitor Information Centres in five National Parks, 3 central forest Reserves. |               |                   |        |                 |
| Date:                                     | 30th May 2022                                                                                                                          |               |                   |        |                 |
| Operator                                  | Uganda Wildlife Authority.                                                                                                             |               |                   |        |                 |
| Location:                                 | Village                                                                                                                                | Parish        | Sub-County        | County | District        |
| Individuals / Organizations in Attendance | PAARA VILLAGE                                                                                                                          | NGWEDO PARISH | NGWEDO SUB-COUNTY |        | BULUSA DISTRICT |

### Purpose of the consultation: Environmental Compliance Audit

|                                 |                                 |                                                                                                                                                                                                                                                                 |      |
|---------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| BAQUAATARA<br>BENARA<br>ATWOOKI | DCAO<br>Bulusa                  | <ul style="list-style-type: none"> <li>Community dialogues on the introduction of the Information Centre.</li> <li>Look into the Human wildlife conflict to bring hope into the people/stakeholders.</li> <li>UWA RSP has done alot in terms of devt</li> </ul> | BB-1 |
| NYAKATO<br>EVARLYNE             | District<br>COUNCILOR<br>NGWEDO | <ul style="list-style-type: none"> <li>Fear of workers to cause Teenage Pregnancies and transmission of diseases.</li> <li>Good Project which will attract more tourists.</li> </ul>                                                                            | BB-2 |

|                |                                                                        |                                                                                                                                        |                                                                                     |
|----------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lydia Bonabana | 0772356841<br>ED - COCENET<br>Comfort Community<br>Empowerment Network | The VIC must allow for participation of the community members. The community must be allowed to be involved in project implementation. |  |
|                |                                                                        |                                                                                                                                        |                                                                                     |
|                |                                                                        |                                                                                                                                        |                                                                                     |
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|                |                                                                        |                                                                                                                                        |                                                                                     |

Consultations by: .....

Signature: .....

Inquiries and comments please forward to: [talk2gissat@mail.com](mailto:talk2gissat@mail.com)





### Stakeholders' Consultation Record

|                                                               |                                                            |                 |                        |                  |          |
|---------------------------------------------------------------|------------------------------------------------------------|-----------------|------------------------|------------------|----------|
| Project name  Code:                                           | VISITOR INFORMATION CENTRES FOR PROTECTED AREAS IN UGANDA. |                 |                        |                  |          |
| Date:                                                         | 30/5/22                                                    |                 |                        |                  |          |
| Operator / DRP/DP/ENT                                         | UWA / NFA                                                  |                 |                        |                  |          |
| Location: BULISA DISTRICT<br>LOCAL GOVERNMENT<br>HEADQUARTERS | Village                                                    | Parish          | Sub-County             | County           | District |
| Individuals / Organizations in Attendance                     | NYAPEA<br>CU                                               | EASTERN<br>ward | BULISA TOWN<br>COUNCIL | BULISA<br>COUNTY | BULISA   |

### Purpose of the consultation: Environmental Compliance Audit

|                                                                                             |  |  |  |
|---------------------------------------------------------------------------------------------|--|--|--|
| Name of Stakeholder                                                                         |  |  |  |
| Description                                                                                 |  |  |  |
| Tumusiime Rogers<br>Environment Officer - Bulisa<br>tumusiimoroger@gmail.com<br>0784 986552 |  |  |  |
|                                                                                             |  |  |  |

### Stakeholders' Consultation Record

|                                           |                                                                                                                                             |               |                   |        |                 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------|-----------------|
| Project name/ Code:                       | Environment & Social Impact Assessment for the proposed Visitor Information centres in (5) five National parks & 3 Central Forest Reserves. |               |                   |        |                 |
| Date:                                     | 30 <sup>th</sup> May 2022                                                                                                                   |               |                   |        |                 |
| Operator                                  | UGANDA WILDLIFE AUTHORITY.                                                                                                                  |               |                   |        |                 |
| Location:                                 | Village                                                                                                                                     | Parish        | Sub-County        | County | District        |
| Individuals / Organizations in Attendance | PAARA VILLAGE                                                                                                                               | NGWEDO PARISH | NGWEDO SUB-COUNTY |        | BULIKA DISTRICT |

### Purpose of the consultation: Environmental Compliance Audit

|                     |                                            |  |                                                                                      |
|---------------------|--------------------------------------------|--|--------------------------------------------------------------------------------------|
| TIBASIMA<br>GILBERT | District Vice<br>Chairperson<br>LC5 - BDLG |  |  |
|                     |                                            |  |                                                                                      |



## Consultation with the National Forestry Authority

Table C.3: Summary of issues in meeting with the National Forestry Authority

| Agency: National Forestry Authority                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                                              | 6 <sup>th</sup> June, 2022 at NFA Headquarters - Bugolobi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Meeting attended by:                                                       | <b>NFA representatives:</b> <ol style="list-style-type: none"> <li>1. Stuart Maniraguha – Director Plantations</li> <li>2. Tom Rukundo – Director Natural Forests</li> <li>3. Sylvia Tumusiime – Eco-Tourism Officer</li> <li>4. Rashid Sekiito – Landuse / GIS Specialist</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Issues:</b>                                                             | Aspects discussed are presented below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Proposed VIC location options within Budongo Central Forest Reserve</i> | <ul style="list-style-type: none"> <li>• NFA proposed a number of sites based on the information / parameters they were given to guide site selection. In Budongo these included the Amaply Saw Mill; Kaniyo Pabidi eco-lodge and Busingiro. Target was to have the VIC near the canopy walk.</li> <li>• Target was to have different activities within the various areas of the reserve e.g Canopy walks; VIC</li> <li>• Proposed locations included: Busingiro (near the Royal Mile), Kaniyo Pabidi eco-tourism site was also identified for development of a canopy walk because it already has established infrastructure and good traffic (lies along Paara-Murchison Road).</li> <li>• The Royal Mile could not be considered because it has the Bunyoro kingdom influence which would mean undue influence on proposed activities including revenue sharing conditions. There is also an increasing number of chimpanzees that are always crossing the road which is risky (chimp welfare and health). It was also observed that there is a research centre on primates within the area (Budongo Conservation Site) therefore establishment of a VIC could interfere with ongoing research activities.</li> </ul> <p><u>Kaniyo Pabidi - advantages</u></p> <ul style="list-style-type: none"> <li>• Existing infrastructure</li> <li>• It is already known – visibility</li> <li>• Location enroute to MFPA – famous for wild game and the falls – busy</li> <li>• VIC should be an entry point for selling of identified products – the Kichumbanyobo gate is UWA and NFA has no visibility there. Therefore, need to consider positioning NFA VIC in a different location.</li> </ul> <p><u>Amaply - disadvantages</u></p> <ul style="list-style-type: none"> <li>• Site located off the access road;</li> <li>• Site already under concession (licence) since 1960s to harvest Cinometra (Iron Wood) that expires in 2026 so this cannot be considered.</li> </ul> <p><u>General disadvantages</u></p> <ul style="list-style-type: none"> <li>• Host communities do not benefit from the forests.</li> </ul> |

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  | <ul style="list-style-type: none"> <li>• There would be a requirement for both the kingdom and the Sub Counties to request to share revenue from any facility set up within premises under their influence / control.</li> </ul> <p>Busingyiro site:</p> <ul style="list-style-type: none"> <li>• Advantages include centrality of location from all sides of the reserve;</li> <li>• There are plans to construct the road to the area (WB funding).</li> <li>• There is a 48km road stretch proposed between Busingyiro in Biiso and the Royal Mile through to Kaniyo Pabidi – out of this there is 20km stretch used as biking trail that goes up to the research centre up to Alimugonza in Hanga. Busingyiro has proposed chimp habituation; biking can be done and viewing of the escarpment in Hanga within Budongo i.e one can drive through the escarpment to see L. Albert and Budongo forest, etc.</li> <li>• There was another site that had been previously considered at Nyabyeya Refugee Station (337379.49E and 187314.68N). It is less forested (bushy) not multi-layered forest and well stocked. Site is mostly bush and grass and it is borderline Nyabyeya and Budongo Reserves. It has nurseries / arboretum (natural forest used for study) – interference with student research activities can have a detrimental impact thus the site is not a good option.</li> <li>• VIC is supposed to provide information on eco-tourism, historical background and conservation education for potential visitors. The facility needs to achieve the objectives of sustainable tourism.</li> <li>• The design team shall follow land use planning guidelines when setting up the VIC (eco-tourism planning).</li> <li>• All proposed plans shall be issued to the DLGs for approval by the concerned district officials (Engineer, Physical Planner, public Health Officer and a certificate of occupancy issued).</li> </ul> |
| <i>Observations / comments / recommendations</i> | <ol style="list-style-type: none"> <li>a) There is need for Tourism Management Plans to ensure collaboration and proper planning with all stakeholders.</li> <li>b) Project considers livelihood aspects in host communities who will be engaged to ensure improved living standards. They should consider training them in SMEs, budgeting, planning, product development, forest-based enterprises and tourism. Once they have a strong cohesion, they can negotiate better to take lead in supply of products e.g cultural tourism.</li> <li>c) In Echuya, CFM is proposed with Batwa tailored activities to support them given levels of marginalization.</li> <li>d) Illegal activities will stop once host communities are involved in forest conservation.</li> <li>e) NFA shares non-financial benefits from forests; these need to be quantified and given a financial value.</li> <li>f) NFA partners through participatory management with communities through sensitization and then agreements which are signed by the groups (CFMs) with defined roles and responsibilities, rights and benefits.</li> <li>g) The benefits are from access to forest products (compartments) where communities can do their activities – these are discussed and put in the agreements.</li> <li>h) PAs are sources of livelihoods and they are the safety nets for these communities where they derive food, money, etc. Tourism is an alternative way for people to earn money without taking out – which eases pressure on the natural resources and helps the forests to regenerate. When people visit the forests to view the existing biodiversity – this helps NFA to earn revenue.</li> <li>i) Consider non-consumptive use of forests to improve its eco-system function; tourism does this very well.</li> </ol>                                                                                                                   |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <ul style="list-style-type: none"> <li>j) No licences are given for logging within the CFRs.</li> <li>k) Eco-tourism are promoted to boost tourism within the reserves.</li> <li>l) In comparison, host communities benefit from forests – they get firewood, medicinal plants, fruits, make crafts, etc</li> <li>m) NFA plans to promote conservation, eco-tourism and information about the CFRs, negative effects on PAs resulting from climate change through the VIC. Others include impacts on biodiversity, mitigation of social aspects and community benefits from the VICs.</li> <li>n) The VICs have to be incorporated into the annual management plans of NFA to ensure sustainability.</li> <li>o) VIC should be used to market the forest as a centre of all activities.</li> <li>p) To boost eco-tourism, NFA suspended high impact activities e.g logging to increase conservation.</li> <li>q) Engage licenced investors to run the eco-lodges within the CFRs.</li> <li>r) NFA ensures that all licence conditions are followed for operations within the CFRs.</li> <li>s) There are 506 CFRs countrywide.</li> </ul> |
| <i>Management of VICs</i> | <ul style="list-style-type: none"> <li>• The activities planned within the VICs are included in the 2022 – 2025 Strategic Plan i.e development of infrastructure in eco-tourism as a way of protecting forests. It should be noted here that using armed protection in PAs does not help.</li> <li>• It is proposed to have sustained management of PAs, generate revenue which is needed but ultimately promoting the livelihoods of the communities within these areas.</li> <li>• NFA is proposing to increase tourism packages that promote successful conservation in PAs.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

### Consultation with the Ministry of Tourism, Wildlife and Antiquities (Department of Museums and Monuments)

Table C.4: Summary of issues in meeting with the Ministry of Tourism, Wildlife and Antiquities (Department of Museums and Monuments)

| <b>Agency: Department of Museum and Monuments - Ministry of Tourism, Wildlife and Antiquities (MTWA)</b> |                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                                                                            | 4 <sup>th</sup> November, 2022 at the Uganda National Museum, Kira Road                                                                                                                                                                                                                      |
| Meeting attended by:                                                                                     | <p><b>DMM representatives:</b></p> <ol style="list-style-type: none"> <li>1. Nyiracyiza Jackline Besigye – Ag. Commissioner</li> <li>2. Asiimwe Raymond – Senior Conservation Officer</li> </ol> <p><b>Gissat consultant:</b></p> <p>Harriet Mujuni<br/>Hilda Namitala<br/>Anita Nabwami</p> |
| Issues:                                                                                                  | <b>Aspects discussed are presented below:</b>                                                                                                                                                                                                                                                |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Heritage Impact Assessments</i>                | <ul style="list-style-type: none"> <li>• Archaeological and Cultural Heritage Assessments determine, as far as reasonably possible from existing records, the nature of the archaeological and cultural heritage resources within the proposed development area, using appropriate methods of study.</li> <li>• As part of the project ESIA, there is need to survey, locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the areas where the developments are to take place. This is important to ensure sustainable conservation of the sites especially those that are on World Heritage Status.</li> <li>• Negative impacts on local people occur (e.g., commodification of culture, disruption of traditional life, crime, overcrowding, displacement of local communities to accommodate tourism development, loss of access to traditional resources, damage or desecration of sacred places, pressures caused by high levels of visitation); high cost of living and inflation results from tourism. These all need to be addressed and mitigated during assessment.</li> <li>• The significance of heritage sites and artefacts is determined by aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It shall be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.</li> </ul> |
| <i>Uganda National Cultural Heritage Database</i> | <ul style="list-style-type: none"> <li>• Uganda's cultural identity is comprised of i) Traditional Expressions and Traditional Knowledge (intangible cultural heritage – under the department of culture and family affairs in Ministry of Gender); ii) the tangible heritage – under the department of Museums and Monuments; iii) creative industries, which is varied, complex, and in constant evolution.</li> <li>• There is a government inventory (database) both national and world level (this process is continuous). The department has a section concerned with surveying and recording historical, archaeological, traditional, etc sites as they are discovered within the country. These are usually from chance finds and from community traditional cultural heritage.</li> <li>• Uganda has over 650 registered archaeological, Paleontological, historical and traditional sites but only 10 are gazetted, 1 developed (Fort Partiko) and 1 under redevelopment (Kasubi Royal Tombs). The rest have deteriorated due to lack of conservation, preservation, interpretation and promotion.</li> <li>• There are over 736 cultural sites across all regions with 20 gazetted by Government (Uganda Monuments Policy 2015). Of these about 20 are private community museums and cultural centres across the country. These provide detailed information on history, culture and artefacts and instruments of the indigenous communities.</li> </ul>                                                                                                                               |
| <i>Policy and Legislative Framework</i>           | <ul style="list-style-type: none"> <li>• The Constitution of Uganda, 1995</li> <li>• Uganda Vision 2040 (Chapter 5) emphasizes the development of a National Value system to change citizen's mindsets, promotion of patriotism, and enhancement of national identity and nurturing of an appropriate ideological orientation. The Vision further provides for harmonized coordination, implementation, monitoring and evaluation at all levels for Government's effectiveness and regulatory control.</li> <li>• The National Development Plan (NDPII) 2015/2016 - 2019/2020 recognizes that culture is manifested in various forms and influences different aspects of perception and aspirations in life and development options.</li> </ul> <p><u>Policies</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>• National Youth Policy (2018).</li> <li>• The Uganda Gender Policy (2016)</li> <li>• The Community Development Policy (2016)</li> <li>• The National Museum and Monuments Policy, (2015)</li> <li>• National Ethical Values Policy (2013)</li> <li>• The Equal Opportunities Policy (2006)</li> </ul> <p>Laws</p> <ul style="list-style-type: none"> <li>• Museum and Monuments Act, 2023</li> <li>• National Environment Act and Regulations thereunder;</li> <li>• The Uganda Communications Commission Act (2013);</li> <li>• The Female Genital Mutilation Act and Regulations (2013),</li> <li>• The Complimentary Alternative Medicine Bill (2019);</li> <li>• The Institution of Traditional or Cultural Leaders Act (2011);</li> <li>• The Sexual Harassment Regulations (2012),</li> <li>• The Prevention of Trafficking in Persons Act (2009);</li> <li>• The Children's Act (Cap 59);</li> <li>• The Penal Code Act, (Cap 120);</li> <li>• The Local Government Act (section 178 (a) (ii) which assigns responsibility for promoting local cultures to local authorities, while section 33(2) specifies sites/places to be preserved by local authorities;</li> <li>• The Employment Act (2006).</li> </ul> <p>Uganda is also signatory to:</p> <ul style="list-style-type: none"> <li>• The Convention on the Protection of the World Cultural and Natural Heritage (1972).</li> <li>• The Universal Declaration of Human Rights (1948)</li> <li>• The Convention on the Safeguarding of the Intangible Cultural Heritage (2003)</li> </ul> |
| <i>Chance Finds</i> | <ul style="list-style-type: none"> <li>• There is a given procedure followed under guidance from the Department of Museums and Monuments for handling chance finds.</li> <li>• Host communities within the respective areas are sensitized about the cultural heritage (immovable) and then a management plan is developed by a consultant together with the concerned communities. The consultant draws up a masterplan for further development of the site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <ul style="list-style-type: none"> <li>• The cultural heritage management plan provides guidelines on future operations of the identified site. It ensures that each CHS area has a defined direction for resource preservation and visitor use.</li> <li>• Currently, DMM has developed 15 management plans out of the 650 sites in its database.</li> <li>• Following chance finds, government engages / sensitizes the host communities who are custodians to these cultural heritage sites in order for them to protect, conserve and benefit from the opportunities presented by presence of the site within their localities.</li> <li>• All cultural heritage belongs to the communities. However, management and protection of these sites is the role of government (through the department) to conserve and sustain.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Institutional Framework</i> | <p>Government MDAs</p> <ul style="list-style-type: none"> <li>• Ministry of Gender, Labour and Social Development (MoGLSD)</li> <li>• Ministry of Education and Sports (MoES)</li> <li>• Ministry of Tourism, Wildlife and Antiquities (MTWA)</li> <li>• Ministry of Tourism, Trade and Industry (MTTI)</li> <li>• Ministry of Water and Environment (MoWE)</li> <li>• Ministry of Justice and Constitutional Affairs (MoJCA)</li> <li>• Ministry of Foreign Affairs (MoFA)</li> <li>• Ministry of Energy and Mineral Development (MoEMD)</li> <li>• Ministry of Health (MoH)</li> <li>• Ministry of Finance, Planning and Economic Development (MFPED)</li> <li>• Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)</li> <li>• Ministry of Local Government (MoLG)</li> <li>• Ministry of Internal Affairs (MoIA)</li> <li>• The Department of Museums and Monuments (DMM)</li> <li>• Uganda Tourism Board (UTB) (markets/creating awareness / advertise /money making / conservation / protection)</li> <li>• The Uganda National Cultural Centre (UNCC)</li> <li>• The National Library of Uganda (NLU)</li> <li>• The National Planning Authority (NPA)</li> </ul> <p>NGOs /CBOs</p> <ul style="list-style-type: none"> <li>• Cross Cultural Foundation of Uganda</li> </ul> |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <p>International Organizations</p> <ul style="list-style-type: none"> <li>• United Nations Educational, Scientific and Cultural Organization (UNESCO)</li> <li>• Uganda National Commission for UNESCO (UNATCOM)</li> </ul> <p><u>Districts</u></p> <p>There are site management committees which involve district leaders (both political and administrative). Some districts have district cultural officers or community development officers or Tourism Officers who take on the development of cultural heritage conservation.</p>                                                                                                                                              |
| <i>Training and Monitoring</i> | <p>The Department trains stakeholders in carrying out heritage impact assessments in order to build capacity. They also help in the development of management plans for identified sites.</p> <p>Legislation in Uganda gives the Minister responsible for Lands the authority to acquire land compulsorily where the land owner or occupier is not willing to sell by agreement to authorised government bodies.</p> <p>Monitoring is done by department and district staff across the country. This area still needs capacity building. For sites which have attendants, these carry out the routine monitoring.</p>                                                                |
| <i>Recommendations</i>         | <ul style="list-style-type: none"> <li>• If construction takes place and archaeological sites are exposed, it should immediately be reported to the department of museums and monuments so that an investigation and evaluation of the finds can be made by the archaeologists.</li> <li>• The ESIA should recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.</li> <li>• For the construction phase, project development should commit to: <ul style="list-style-type: none"> <li>- avoid disturbing sites of heritage importance; and</li> <li>- avoid disturbing burial sites.</li> </ul> </li> </ul> |

*Plates*



Plate C.6: Meeting with the Ag. Commissioner DMM

### Stakeholders' Consultation Record

|                                           |                                                           |        |            |        |          |
|-------------------------------------------|-----------------------------------------------------------|--------|------------|--------|----------|
| Project name/Code:                        | GEA22009 ESIA FOR THE PROPOSED VIC IN 08 PROTECTED AREAS  |        |            |        |          |
| Date:                                     | 4th NOVEMBER 2022                                         |        |            |        |          |
| Proponent                                 | UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY |        |            |        |          |
| Location:                                 | Village                                                   | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | Department of Museums and Monuments                       |        |            |        |          |

### Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel / Mail) | Key Issues Raised / Discussed | Signature/ Initial |
|-------------------------|------------------------------------|-------------------------------|--------------------|
| Salline Myiracyza B.    | Ag-comm.                           |                               | MA                 |
|                         |                                    |                               |                    |

### Stakeholders' Consultation Record

|                                           |                                                               |        |            |        |          |
|-------------------------------------------|---------------------------------------------------------------|--------|------------|--------|----------|
| Project name/ Code:                       | GEP 220109 ESIA FOR THE PROPOSED VIC IN EIGHT PROTECTED AREAS |        |            |        |          |
| Date:                                     | 4th NOVEMBER 2022                                             |        |            |        |          |
| Proponent                                 | UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY     |        |            |        |          |
| Location:                                 | Village                                                       | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | DEPARTMENT OF MUSEUMS AND MONUMENTS                           |        |            |        |          |

### Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel   Mail) | Key Issues Raised / Discussed        | Signature/ Initial                                                                  |
|-------------------------|------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------|
| Asiimwe Raymond         | Senior Conservator                 | 0757031243 asiimwe.raymond@yahoo.com |  |
|                         |                                    |                                      |                                                                                     |



## Consultation with the Ministry of Tourism, Wildlife and Antiquities (Department of Wildlife Conservation)

Table C.5: Summary of issues in meeting with the Ministry of Tourism, Wildlife and Antiquities (Department of Wildlife Conservation)

| <b>Agency: Ministry of Tourism, Wildlife and Antiquities (Department of Wildlife Conservation)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                                                                      | 11 <sup>th</sup> September, 2022 at MTWA, Rwenzori Towers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Meeting attended by:                                                                               | <p><b>MTWA representatives:</b></p> <ol style="list-style-type: none"> <li>1. Baluku Joward – Senior Wildlife Officer – 0776165072 – <a href="mailto:joward.baluku@tourism.go.ug">joward.baluku@tourism.go.ug</a></li> <li>2. Kijjambu Charles – Wildlife Officer – 0787307430 – <a href="mailto:charles.kijjambu@tourism.go.ug">charles.kijjambu@tourism.go.ug</a></li> <li>3. Stephen Fred Okiror – Ag. Principal Wildlife Officer – 0772931963 – <a href="mailto:sfokiror@gmail.com">sfokiror@gmail.com</a></li> <li>4. Micheal Mutebi – Wildlife Officer – 0758468731 – <a href="mailto:michealmutebi256@gmail.com">michealmutebi256@gmail.com</a></li> </ol> <p><b>Gissat consultant:</b><br/>Harriet Mujuni<br/>Ronald Kyomuhendo<br/>Julius Nsereko</p>                                                                                                                                                                                                                                                                                                                                                       |
| <b>Issues:</b>                                                                                     | Aspects discussed are presented below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Environmental and social impact assessment</i>                                                  | <ul style="list-style-type: none"> <li>• The ESIA shall critically examine the following impacts and propose feasible mitigation measures to address them: <ul style="list-style-type: none"> <li>○ Introduction of invasive species</li> <li>○ Behaviour of the workers (risk of poaching)</li> <li>○ Inconvenience to the visitors during the construction phase</li> <li>○ Social disruptions (HIV/AIDS risks)</li> <li>○ Durability of the construction materials</li> <li>○ Waste management during all phases of project implementation</li> <li>○ Limitation of the project footprint</li> <li>○ Unintended development around the VICs</li> </ul> </li> <li>• The ESIA must assess alternatives to the proposed VICs including alternative locations</li> <li>• A biodiversity assessment must be conducted for all the proposed sites and alternatives. The findings of this assessment will be used to determine the potential ecological impacts of developing the VICs</li> <li>• With reference to the fire management plans for the subject PAs, develop fire management plans for each VIC</li> </ul> |
| <i>Administrative changes in the CFRs</i>                                                          | <ul style="list-style-type: none"> <li>• In consideration of the recommendations made under the Protected Areas Assessment Report, the establishment and operation of the VICs should consider the pending changes in the conservation status of Echuya, Bugoma and Budongo CFRs. Plans are underway to upgrade the CFRs to National Parks or Wildlife Reserves to accord them higher conservation statuses.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>Proposed locations</i>                                                                          | <ul style="list-style-type: none"> <li>• The proposed locations within the PAs will limit access to the valuable information and other benefits of the VICs to tourists only. This excludes the general public from the tourism promotion programs at the VICs.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Conservation efforts</i> | <ul style="list-style-type: none"> <li>• MTWA, in exercising its mandate, is implementing several wildlife conservation initiatives including: <ul style="list-style-type: none"> <li>○ Review of the Tourism Act to streamline mandates of various Government MDAs in tourism development and wildlife conservation</li> <li>○ The development of a management plan for wildlife outside protected areas</li> <li>○ Establishing the National Wildlife Crime Coordination Taskforce (NWCCT) comprised of UWA, UPF, FIA, Interpol, UPDF, Customs, and NFA</li> <li>○ Diversifying tourism products by adopting religious tourism, dark tourism and cultural tourism</li> <li>○ Building capacity among sector players through training and support, for example, through the Uganda Crafts and Souvenir Development Project</li> <li>○ Putting in place avenues to establish sport hunting on private land</li> <li>○ Supporting the establishment of ranches and mini zoos by the private sector</li> <li>○ Implementing the Uganda Wildlife (Compensation Scheme) Regulations 2022 No.64, and the Uganda Wildlife (Revenue Sharing) Regulations 2022 No.65 were gazetted on 05 August 2022</li> <li>○ Engaging in Transboundary conservation programs such as the Great Virunga Transboundary Collaboration (GVTC) and Mount Elgon Regional Ecosystem Conservation Programme (MERECP)</li> <li>○ MTWA has enhanced the operations and revised the curriculum at the Uganda Hotel and Tourism Training Institute (UHTTI) and Uganda Wildlife Training Institute (UWTI)</li> <li>○ Building the capacity of UWEC to exercise its mandate of implementing conservation education programs across the country</li> </ul> </li> </ul> |
| <i>Recommendations</i>      | <ul style="list-style-type: none"> <li>• The VICs should be operated as a business model which generates revenue. This will allow them to become self-sustaining and increase their longevity.</li> <li>• Rapid inquiry on the location and condition of existing VICs in and around the protected areas</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Stakeholders' Consultation Record

|                                           |                                                           |        |            |        |          |
|-------------------------------------------|-----------------------------------------------------------|--------|------------|--------|----------|
| Project name  Code: 624220109             | ESIA FOR THE PROPOSED VIC IN OR PROTECTED AREAS.          |        |            |        |          |
| Date:                                     | 11-OCTOBER-2022                                           |        |            |        |          |
| Proponent                                 | UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY |        |            |        |          |
| Location:                                 | Village                                                   | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | MINISTRY OF TOURISM, WILDLIFE AND ANTIQUITIES.            |        |            |        |          |

Purpose of the consultation: Environmental Impact Assessment

| Name of person/official | Designation & Contact (Tel   Mail)                          | Key Issues Raised / Discussed | Signature   Initial                                                                 |
|-------------------------|-------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| Stephen Fred Okiror     | Ag. PWD<br>0772931963<br>sokiror@gmail.com                  |                               |  |
| Michael Mutebi          | Wildlife officer<br>0758468751<br>mchealmutebi256@gmail.com |                               |                                                                                     |

**Stakeholders' Consultation Record**

|                                           |                                                                   |        |            |        |          |
|-------------------------------------------|-------------------------------------------------------------------|--------|------------|--------|----------|
| Project name/ Code: <b>GEA 220109</b>     | <b>ESIA FOR THE PROPOSED OS VICA IN THE PROTECTED AREAS.</b>      |        |            |        |          |
| Date:                                     | <b>11-OCTOBER-2022</b>                                            |        |            |        |          |
| Proponent:                                | <b>UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY.</b> |        |            |        |          |
| Location:                                 | Village                                                           | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | <b>MINISTRY OF TOURISM, WILDLIFE AND ANTIQUITIES.</b>             |        |            |        |          |

**Purpose of the consultation: Environmental and Social Impact Assessment**

| Name of person/official     | Designation & Contact (Tel / Mail)                                   | Key Issues Raised / Discussed | Signature/ Initial                                                                    |
|-----------------------------|----------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| <b>BALUKU<br/>JOWARD</b>    | Senior Wildlife<br>officer<br>076165072<br>joward.baluku@kumungu.org |                               |    |
| <b>Kijjambu<br/>Charles</b> | Wildlife<br>officer<br>0787307430<br>charles.kijjambu@kumungu.org    |                               |  |

## Consultation with the Ministry of Gender, Labour and Social Development (Department of Culture and Family Affairs)

Table C.6: Summary of issues in meeting with the Ministry of Gender, Labour and Social Development (Department of Culture and Family Affairs)

| Agency: Ministry of Gender, Labour and Social Development (Department of Culture and Family Affairs) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                                                                        | 14 <sup>th</sup> November 2022, Gender, Labour and Development House                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Meeting attended by:                                                                                 | <b>Ministry of Gender, Labour and Social Development representative</b><br>Ruth Muguta Tusaasirwe, Commissioner Cultural Affairs<br><br><b>Gissat consultant:</b><br>Hilda Namitala                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Issues:</b>                                                                                       | <b>Aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Conservation of Culture                                                                              | <ul style="list-style-type: none"> <li>The department conserves the cultural values and heritages through encouraging the traditional institutions to protect and preserve the culture.</li> <li>The cultural sites are divided into two depending on the agencies who take the upper hand in conserving and preserving the heritage <ul style="list-style-type: none"> <li>i. The formal/national cultural sites are monitored by different ministries which include Ministry of Tourism which takes lead in the documentation and archiving all the necessary information about the sites, Ministry of Trade Industry and Cooperatives whose mandate is on exporting and importing of the cultural tangible and intangible heritage, the Parliament that sets the laws that guide on the conservation and preservation of culture.</li> <li>ii. The informal cultural sites on the other hand are majorly monitored by the traditional institutions and the local leaders. This mainly points at sites that the community take as ancestral source of belief.</li> </ul> </li> <li>The government involves the local leaders through discussion to identify any new cultural sites as well as creating awareness to the community about the need to preserve the culture. The planning and management process is done with the involvement of the local community mainly because there are immovable sites that are effective to the revenue of the country.</li> <li>The preservation and conservation of the cultural heritage is mostly done through awareness creation, documentation of all cultural information as well as preservation of other requirements that contribute to the intangible cultural heritage for example, the government encouraged the district to make laws to preserve the Sheer butter tree that is used during the male cleansing ceremony among the Langi. This aids the continuity of the cultural practice.</li> <li>There are various staff and community training that help in the preservation and conservation of the cultural heritage. The department submits a report every after four years indicating the training sessions conducted.</li> </ul> |
| Intangible elements                                                                                  | <ul style="list-style-type: none"> <li>The government supports the promotion of the intangible cultural heritage through the Ministry of Gender, Labour and Social Development by documentation and funding.</li> <li>The five intangible elements that are recognised by UNESCO include; <ul style="list-style-type: none"> <li>➤ Back cloth making;</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     | <ul style="list-style-type: none"> <li>➤ Male cleansing ceremony in Lango</li> <li>➤ The Madi bola in Moyo</li> <li>➤ The Mpaako naming in Tooro</li> <li>➤ Bigwala in Busoga (Blowing of the local flute)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Domains for cultural heritage                                       | <ul style="list-style-type: none"> <li>• Intangible culture is an indirect export. This is through the export of the tangible culture for example the performing artists who travel take the intangible art of singing or performing.</li> <li>• The numerous domains for the cultural heritage include; <ul style="list-style-type: none"> <li>➤ Performing Arts (Music, dance, song writing, music publishing, comedy, drama and theatre)</li> <li>➤ Audio, Visual and interactive media (Film and video, TV cinema and Radio drama)</li> <li>➤ Books and press (Books, Newspapers and magazines, printed matter libraries which include virtual, book fairs)</li> <li>➤ Design and creative services (Fashion, graphics, interior design)</li> <li>➤ Visual Arts and Crafts (Crafts, paintings, sculpture, photography and weaving)</li> <li>➤ Cultural and Natural heritage.</li> </ul> </li> </ul> |
| Protection of community rights from internal and external influence | <ul style="list-style-type: none"> <li>• To protect the community rights from external and internal influence, the government has a policy that is under review since 2006 that is protecting the culture and human rights, there is also a law on traditional leaders which indicates the need to preserve the cultural activities which are not human rights violent.</li> <li>• The law of the Uganda Cultural Centre which indicates the promotion and development of a currency under culture.</li> <li>• The legal framework which involves; <ul style="list-style-type: none"> <li>➤ National parenting guidelines</li> <li>➤ The Ethical values</li> <li>➤ The child policy</li> </ul> </li> </ul>                                                                                                                                                                                              |
| Challenges                                                          | <p>Uganda's cultural sector is restrained by a multitude of factors and challenges including;</p> <ul style="list-style-type: none"> <li>• Gaps in funding: These are manifested by shortages of essential training requirements due to poor funding, there are shortages of skilled staff. The monitoring and evaluation process is also slowed down.</li> <li>• Dying cultural activities: These are mostly spear headed by the community who copy the modern culture. This is through the use of the internet. The religion also discourages some cultural practices which makes preservation hard.</li> <li>• Addressing poor coordination within various Ministries that are in the cultural heritage sector: This makes work difficult because each ministry has a different framework.</li> </ul>                                                                                                |

### Stakeholders' Consultation Record

|                                           |                                                                                          |        |            |        |          |
|-------------------------------------------|------------------------------------------------------------------------------------------|--------|------------|--------|----------|
| Project name/ Code:                       | GEA220K9 ESIA for the proposed development of Visitor Information Centers in Pongwe area |        |            |        |          |
| Date:                                     | 14th November, 2022                                                                      |        |            |        |          |
| Proponent                                 |                                                                                          |        |            |        |          |
| Location:                                 | Village                                                                                  | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | Ministry of Gender, Labour and Social Development                                        |        |            |        |          |

### Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official  | Designation & Contact (Tel / Mail) | Key Issues Raised / Discussed                                                                                                                                                                                                                                                                                                                                                                                   | Signature/ Initial |
|--------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Ruth Mugizi<br>Tusasirwa | PSO/S                              | <ul style="list-style-type: none"> <li>The department considered the cultural values and heritages through encouraging the traditional institutions to protect and preserve culture.</li> <li>The cultural sites are divided into two depending on the agencies.</li> <li>Community rights are protected. There is a policy under review since 2006 that is protecting the culture and human rights.</li> </ul> | <i>[Signature]</i> |
|                          |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |

## Consultation with the International Union for Conservation of Nature

Table C.7: Summary of issues in meeting with the International Union for Conservation of Nature (IUCN)

|                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project:</b> Environmental and Social Impact Assessment for the proposed development of Visitor Information Centres in selected Protected Areas |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Agency: International Union for Conservation of Nature (IUCN)</b>                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Date & place:                                                                                                                                      | 17 <sup>th</sup> November 2022 at IUCN – Uganda Offices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Meeting attended by:                                                                                                                               | <b>IUCN representative:</b><br>Mr James Omoding – Senior Programmes Officer<br><br><b>Gissat consultant:</b><br>Ronald Kyomuhendo<br>Julius Nsereko                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Issues:</b>                                                                                                                                     | The aspects discussed are presented below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Status of the prioritized PAs and design of the VICs                                                                                               | The prioritized PAs are areas of <b>rich biodiversity</b> . They are prime areas of great importance to the local, national and international communities. The design of the VIC should enhance the specific functionality of the subject ecosystems. This will enable the conservation of biodiversity and maintain the existing ecological pressures.                                                                                                                                                                                                  |
| Impact assessment                                                                                                                                  | Comprehensively analyse the cumulative impacts that may accrue due to other projects in the PAI. These activities include but are not limited to the oil and gas sector, projects fronted by district local governments, private sector involvement and activities of the host communities                                                                                                                                                                                                                                                               |
| Interventions of the IUCN                                                                                                                          | (i) IUCN has worked with the NFA and UWA on Protected Area governance systems, through Protected area governance effectiveness on the biodiversity and social fronts<br>(ii) Curbing wildlife trafficking and trade through the programme “traffic” which empowers local communities to as first lines of defence<br>(iii) Following the IUCN Africa Protected Area Conference (APAC) in June 2022, IUCN and MTWA have embarked on reviewing local laws and policies by domesticating the majority of the declarations in the Kigali declaration of 2022 |
| Key Principles of tourism and visitor management                                                                                                   | The fundamental principle governing the two aspects is visitor experience which entails value for money, available facilities and the type of tour guides (knowledge and professionalism)                                                                                                                                                                                                                                                                                                                                                                |
| Documentation of the attributes of the PAs                                                                                                         | Attributes of the prioritized PAs are documented although some information is not updated. Information mishap usually rotates around the animal surveys and counts (species composition)                                                                                                                                                                                                                                                                                                                                                                 |
| Justification for establishing VICs in PAs                                                                                                         | <ul style="list-style-type: none"> <li>VICs and tourism can create economic benefits for protected areas and surrounding communities and help to create greater support for conservation. There is therefore a need to establish ultra-modern VICs to achieve these objectives.</li> <li>Tourism (VICs) provides a crucial and unique way of fostering visitors’ connection with protected area values, making it a potentially positive force for conservation.</li> </ul>                                                                              |
| Involvement of Host Communities                                                                                                                    | <ul style="list-style-type: none"> <li>Host communities can be involved in the VIC operation through local performances; the sale of culture; support conservation; outsourcing the curio shop at the facility to the local communities inter alia.</li> </ul>                                                                                                                                                                                                                                                                                           |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Recommendation</i> | <ul style="list-style-type: none"> <li>• Enhancing PA governance through increased research into the challenges facing PAs, avenues for collaboration and biodiversity conservation</li> <li>• GOU and the private sector should fill the existing gap in quality accommodation services; these should address all income groups to increase the number of participants and maximize the gains from the tourism sector</li> <li>• Utilising the funds from revenue sharing (20%) to establish quality tourism facilities by host communities that can generate revenue</li> </ul> |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Stakeholders' Consultation Record

|                                           |                                                               |        |            |        |          |
|-------------------------------------------|---------------------------------------------------------------|--------|------------|--------|----------|
| Project name/ Code: GEA 220109            | ESIA FOR THE PROPOSED VICO                                    |        |            |        |          |
| Date:                                     | 19. NOVEMBER - 2022                                           |        |            |        |          |
| Proponent                                 | UGANDA WILDLIFE AUTHORITY AND THE NATIONAL FORESTRY AUTHORITY |        |            |        |          |
| Location:                                 | Village                                                       | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | INTERNATIONAL UNION FOR CONSERVATION OF NATURE - IUCN         |        |            |        |          |

### Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel / Mail)                               | Key Issues Raised / Discussed                                                                                                                                                                                                                                                                                                                                       | Signature/ Initial                                                                  |
|-------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| James Omukungu          | Senior Program Officer,<br>0772437169<br>James.Omukungu@iucn.org | Design of the VICO:- The design of the VICO should enhance the functionality of the ecosystem; maintain the biodiversity; Reduce the pressures (existing).<br>The proposed project is a good move towards tourism development. The areas chosen are of high biodiversity/ prime areas of great importance to the local, national and international community (ies). |  |
|                         |                                                                  | Assess the cumulative impacts of other projects in the project areas:<br>(i) Oil and gas<br>(ii) Plans by local NGOs<br>(iii) Private sector<br>(iv) Host communities.                                                                                                                                                                                              |                                                                                     |

\* Fight wildlife trafficking and poaching through the programme "Traffic" which encourages use of communities as the first line of defence.

Interviewed by: IUCN

IUCN has worked with NFA/UGA on area governance system. Protected area governance effectiveness on the biodiversity & social fronts.  
- IUCN advocates for sustainable financing towards biodiversity conservation & tourism.



Enhance Pt governance through increase visitors.

|                                                                                                                                                                                                                          |  |                                                                                                                                                             |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Following the IACH Africa Protected Area Conference (APAC) in June, 2022; ICUM + MUCAT are trying to review the existing laws + policies by domesticating some / majority of the declarations in the Kigali declaration. |  |                                                                                                                                                             |          |
| Key principles of tourism and visitor management:                                                                                                                                                                        |  | (i) The visitor experience a value for money<br>• Facilities v social amenities.<br>• Infrastructure.<br>• The type of guides (knowledge + professionalism) |          |
| The attributes of the chosen PAs are documented although not updated. Some of the information that need constant updating include the species composition, animal counts / census.                                       |  |                                                                                                                                                             |          |
| How communities can actively benefit + participate:                                                                                                                                                                      |  | The communities near the PAs should establish / mobilize resources to establish decent accommodation + hospitality facilities.                              |          |
| Follow-up / Action Items                                                                                                                                                                                                 |  | Person Responsible                                                                                                                                          | Deadline |
|                                                                                                                                                                                                                          |  |                                                                                                                                                             |          |
|                                                                                                                                                                                                                          |  |                                                                                                                                                             |          |
| Attachments:                                                                                                                                                                                                             |  |                                                                                                                                                             |          |

Consultations by: Donald Kyomulinda  
Salus Hsabo  
 Inquiries and comments please forward to: [talk2qissat@mail.com](mailto:talk2qissat@mail.com)

Signature: [Signature]

## Consultation with the Association of Uganda Tour Operators

Table C.8: Summary of issues in meeting with the Association of Uganda Tour Operators

| <b>Agency: Association of Uganda Tour Operators</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                       | 11 <sup>th</sup> September 2022 at AUTO Headquarters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Meeting attended by:                                | <b>AUTO representatives:</b> <ol style="list-style-type: none"> <li>1. Albert Kasozi – Chief Executive Officer</li> <li>2. Nancy Okwong – Public Relations Officer – 0772183898</li> <li>3. Jackson Sebugwawo – Executive Assistant</li> </ol><br><b>Gissat consultant:</b><br>Ronald Kyomuhendo<br>Julius Nsereko<br>Harriet Mujuni                                                                                                                                                                                                                                                                                                     |
| <b>Issues:</b>                                      | <b>Aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <i>The Association's role</i>                       | <ul style="list-style-type: none"> <li>• The association's main role is "to uphold the good reputation of Uganda as a tourist destination by ensuring that the Uganda Tour Operators maintain the highest standards of service and value."</li> <li>• AUTO has been in existence for over 2 decades and has more than 350 active members including tour operators and corporate bodies such as airline companies, lodges and the Private Sector Foundation Uganda (PSFU)</li> <li>• Training of the association members in various fields to raise the quality of services provided and professionalism in the tourism sector</li> </ul> |
| <i>Anticipated Benefits</i>                         | <ul style="list-style-type: none"> <li>• The VICs will enhance the visitor experience, encourage visitors to stay longer, engage in more activities and explore more. This will generate more revenue for tour operators and the Country.</li> <li>• The VICs will ease the jobs of tour operators and guides by way of acting as "information banks" where one can access accurate information related to the tourist attractions, activities, local cultures, customs and other products of interest to the visitors.</li> <li>• The VICs will create spaces for Tour Operators to advertise their products and services</li> </ul>    |
| <i>Recommendations</i>                              | <ul style="list-style-type: none"> <li>• The design of the VIC should, as much as possible, align with the unique character of the protected area where it is established</li> <li>• Tour operators and guides should be engaged throughout the implementation of the project. This will allow the tour operators to understand the potential benefits and embrace the VICs.</li> <li>• Tour guides should be engaged as part of the VIC project, this will ensure guides do not share information contrary to that in the VICs. This may be done by the Uganda Safari Guides Association (USAGA)</li> </ul>                             |



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### Stakeholders' Consultation Record

|                                           |                                                                                          |        |            |        |          |
|-------------------------------------------|------------------------------------------------------------------------------------------|--------|------------|--------|----------|
| Project name/ Code:                       | GEA 220109: EIA for the proposed Visitor Information Centres in Selected protected areas |        |            |        |          |
| Date:                                     | 11 <sup>th</sup> October 2022                                                            |        |            |        |          |
| Proponent                                 | UGANDA WILDLIFE AUTHORITY & NATIONAL FORESTRY AUTHORITY                                  |        |            |        |          |
| Location:                                 | Village                                                                                  | Parish | Sub-County | County | District |
| Individuals / Organizations in Attendance | ASSOCIATION OF UGANDA TOUR OPERATORS                                                     |        |            |        |          |

### Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel   Mail)          | Key Issues Raised /Discussed                                                         | Signature/ Initial |
|-------------------------|---------------------------------------------|--------------------------------------------------------------------------------------|--------------------|
| Nancy Okwong            | PRO 0772183879<br>admin@ugandatouroperators | - Benefits of the VIC to Tour Operators<br>- Possible conflicts<br>- Recommendations |                    |
| Jackson Ssebunyu        | Executive Assistant                         | - How beneficial can it be to tour operators?                                        |                    |

## Consultation with the Uganda Safari Guides Association

Table C.9: Summary of issues in meeting with the Uganda Safari Guides Association (USAGA)

| Agency: Association of Uganda Tour Operators |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                | 11 <sup>th</sup> September, 2022 at USAGA – UTA offices in Nakawa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Meeting attended by:                         | <b>USAGA – UTA representatives:</b><br>Herbert Byaruhanga – President (UTA) & General Secretary (USAGA)<br><br><b>Gissat consultant:</b><br>Ronald Kyomuhendo                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Issues:                                      | Aspects discussed are presented below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| USAGA                                        | <ul style="list-style-type: none"> <li>The association's main role is "to provide a platform to increase tour guides' visibility and recognition as key actors in the tourism industry."</li> <li>USAGA was established in 2004 and has over 1,000 active members grouped in several clubs including the birds, butterflies, reptiles and cultural tourism clubs.</li> <li>The Association offers training for tour guides; dissemination of information and knowledge on developments in the tourism industry; lobby and advocacy to improve the image of guiding services; and job recommendations to members</li> </ul>                  |
| UTA                                          | <ul style="list-style-type: none"> <li>UTA is the umbrella association for all tourism associations in Uganda. Its members include: <ul style="list-style-type: none"> <li>- Association of Uganda Tour Operators (AUTO)</li> <li>- Uganda Safari Guides Association (USAGA)</li> <li>- Uganda Hotel Owners Association (UHOA)</li> <li>- Uganda Association of Travel Agents (UATA)</li> <li>- Uganda Community Tourism Association (UCTA)</li> </ul> </li> </ul>                                                                                                                                                                          |
| Inadequacies in existing VICs                | <ul style="list-style-type: none"> <li>The existing information centres lack content on the available tourism products within the areas that they serve.</li> <li>They also lack proper facilities such as sitting areas, refreshments and storage of essential items</li> </ul>                                                                                                                                                                                                                                                                                                                                                            |
| Areas for collaboration                      | <ul style="list-style-type: none"> <li>Comprehensive capacity building initiatives should be instituted for tour guides to enhance their skills and knowledge base. These initiatives will consolidate the benefits of the VICs since tour guides are often the first points of contacts with tourists in the parks and a crucial source of information and contribute immensely to visitor experience</li> <li>NFA should involve guides during product development; this is because guides are an important avenue for gathering feedback from tourists on their experiences, expectations and possible areas for improvement.</li> </ul> |
| Recommendations                              | <ul style="list-style-type: none"> <li>The proposed VICs must act as information banks, to allow for the archiving and retrieval of tourism-related information.</li> <li>NFA should collaborate with tour operators to ensure the success of the revenue generating components of the VIC. This will make the project self-sustaining and give it longevity.</li> </ul>                                                                                                                                                                                                                                                                    |

### Stakeholders' Consultation Record

|                                           |                                                               |        |                    |        |          |
|-------------------------------------------|---------------------------------------------------------------|--------|--------------------|--------|----------|
| Project name  Code:                       | GEA 220109: ESI4 for the Proposed Visitor Information Centres |        |                    |        |          |
| Date:                                     | 17 <sup>th</sup> October 2022                                 |        |                    |        |          |
| Proponent                                 | UWA & NFA                                                     |        |                    |        |          |
| Location:                                 | Village                                                       | Parish | Sub-County         | County | District |
| Individuals / Organizations in Attendance | UGANDA                                                        | SAFARI | GUIDES ASSOCIATION |        |          |

### Purpose of the consultation: Environmental Impact Assessment

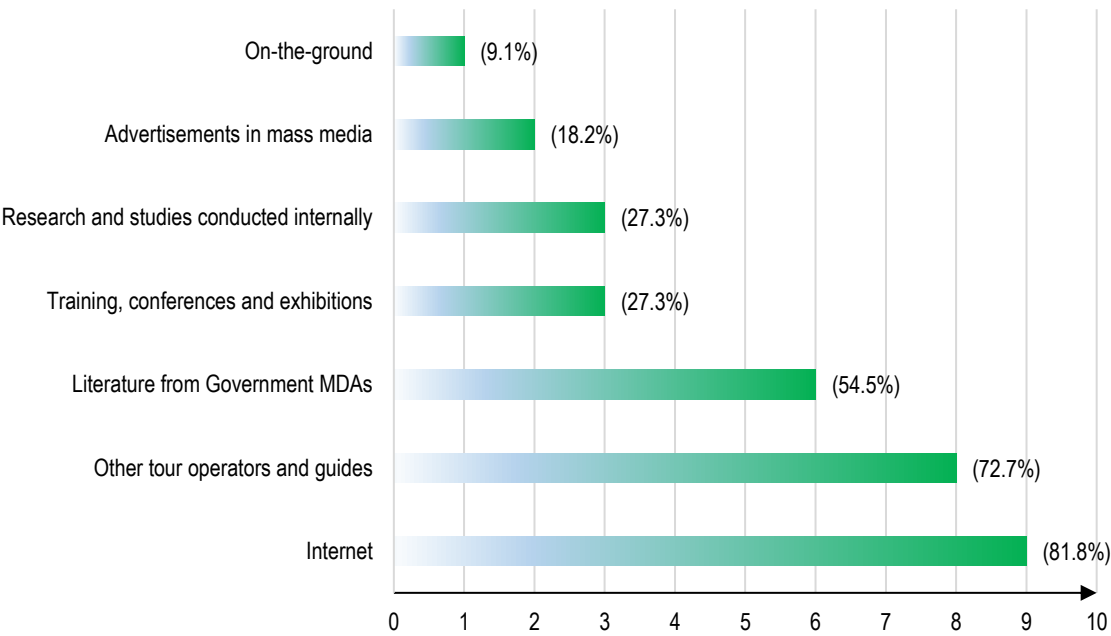
| Name of person/official | Designation & Contact (Tel   Mail) | Key Issues Raised / Discussed                                                                 | Signature/ Initial                                                                  |
|-------------------------|------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Herbert Boyanlungu      | Ct Secretary<br>Admin<br>ugasa@.ug | Involve Tourist Guides in the implementation of the project -<br>Packaging, capacity building |  |
|                         |                                    |                                                                                               |                                                                                     |



## Consultation with Private Tour Operators

Table C.10: Summary of issues in meeting with private tour operators

| Agency: Private Tour Operators                                |                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date &amp; place:</b>                                      | Google form: <a href="https://forms.gle/YdmEwTLSUY8DTQuY7">https://forms.gle/YdmEwTLSUY8DTQuY7</a>                                                                                                                                                                                                                                                                                               |
| <b>Respondents</b>                                            | <ol style="list-style-type: none"> <li>1. Thavma Travels Ltd</li> <li>2. Kara-Tunga Arts &amp; Tours</li> <li>3. Mogambo, Pasion Por Africa, Ltd.</li> <li>4. G&amp;C Tours Ltd</li> <li>5. Y Save Safaris Ltd</li> <li>6. Hanze Tours</li> <li>7. Magic Safaris</li> <li>8. Canaan Travels Limited</li> <li>9. Kagera Safaris</li> <li>10. Marasa Africa</li> <li>11. Lets Go Travel</li> </ol> |
| <b>Question</b>                                               | <b>Response</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| What are the current tourism offerings provided by your firm? | <ul style="list-style-type: none"> <li>• Booking, air ticketing, visa processing and accommodation.</li> <li>• Insurance and consultancy</li> <li>• Cultural and eco tours, Boat Excursions, game drives</li> <li>• Birding, gorilla and chimpanzee tracking, hiking and cultural experiences</li> </ul>                                                                                         |

| <p>What are your sources of information related to protected areas, tourist attractions and other related information?</p>                                                  |  <table border="1"> <thead> <tr> <th>Source of Information</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>On-the-ground</td> <td>9.1%</td> </tr> <tr> <td>Advertisements in mass media</td> <td>18.2%</td> </tr> <tr> <td>Research and studies conducted internally</td> <td>27.3%</td> </tr> <tr> <td>Training, conferences and exhibitions</td> <td>27.3%</td> </tr> <tr> <td>Literature from Government MDAs</td> <td>54.5%</td> </tr> <tr> <td>Other tour operators and guides</td> <td>72.7%</td> </tr> <tr> <td>Internet</td> <td>81.8%</td> </tr> </tbody> </table> | Source of Information | Percentage | On-the-ground | 9.1% | Advertisements in mass media | 18.2% | Research and studies conducted internally | 27.3% | Training, conferences and exhibitions | 27.3% | Literature from Government MDAs | 54.5% | Other tour operators and guides | 72.7% | Internet | 81.8% |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|---------------|------|------------------------------|-------|-------------------------------------------|-------|---------------------------------------|-------|---------------------------------|-------|---------------------------------|-------|----------|-------|
| Source of Information                                                                                                                                                       | Percentage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| On-the-ground                                                                                                                                                               | 9.1%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| Advertisements in mass media                                                                                                                                                | 18.2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| Research and studies conducted internally                                                                                                                                   | 27.3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| Training, conferences and exhibitions                                                                                                                                       | 27.3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| Literature from Government MDAs                                                                                                                                             | 54.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| Other tour operators and guides                                                                                                                                             | 72.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| Internet                                                                                                                                                                    | 81.8%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| <p>Other than enhancing the visitor experience and an increase in the number of tourists, what other benefits do you envisage will come from the operation of the VICs?</p> | <ul style="list-style-type: none"> <li>• Awareness of natural treasure among the locals</li> <li>• Employment and job placement for the locals</li> <li>• Preservation of culture through the display of information and knowledge</li> <li>• Knowledge transfer from older generations to the younger ones and upskilling</li> </ul>                                                                                                                                                                                                                                                                                                                                  |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| <p>How has your firm benefited from the existing Information centres in and around protected areas?</p>                                                                     | <ul style="list-style-type: none"> <li>• Maps provided by the VICs have been very helpful</li> <li>• Useful information has been provided to clients</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |
| <p>What challenges have you faced with the existing information centres in and around the protected areas, if any?</p>                                                      | <ul style="list-style-type: none"> <li>• Limited information at the VICs about communities especially in written format</li> <li>• The VICs cover only specific regions leaving out other tourism destinations in the country such as the Karamoja sub-region</li> <li>• Renovation and redesigning the VICs to attract even more visitors</li> <li>• Misinformation provided by the VICs implies the need for more VICs spread across</li> <li>• Poor sanitation and housekeeping at some of the VICs</li> </ul>                                                                                                                                                      |                       |            |               |      |                              |       |                                           |       |                                       |       |                                 |       |                                 |       |          |       |

|                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| From your experience with the tourism sector in the country and the past and present operation of information centres, which measures do you recommend UWA and NFA put in place to ensure the proposed VICs meet their objective? | <ul style="list-style-type: none"> <li>• Provide skilled, trained and informed staff and involve private stakeholders</li> <li>• Provide maps to visitors</li> <li>• Acquire and share more accurate information</li> <li>• Encourage private companies to engage and partner with VICs</li> <li>• Redesign the structures with modern facilities to attract even more visitors</li> </ul> |
| Through which avenues should UWA and NFA collaborate with Tour Operators to ensure the successful operation of the VICs?                                                                                                          | <ul style="list-style-type: none"> <li>• Conducting training workshops</li> <li>• Sub-contracting with the operation offices</li> <li>• Provide information and share ideas to attract more tourists</li> </ul>                                                                                                                                                                            |

### Consultation with the Ministry of Water and Environment (Department of Environment Support Services)

Table C.11: Summary of issues in meeting with the Ministry of Water and Environment (Department of Environment Support Services)

| Agency: Ministry of Water and Environment - Department of Environment Support Services |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                                                          | 14 <sup>th</sup> March 2023 at the Ministry of Water and Environment - Department of Environment Support Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Meeting attended by:                                                                   | <p><b>Ministry of Water and Environment representatives:</b></p> <ol style="list-style-type: none"> <li>1. Maureen Anino – Assistant Commissioner – Department of Environment Support Services</li> <li>2. Bob Kazungu – Ag. Assistant Commissioner Forestry Assessment and Monitoring</li> <li>3. Patrick Otim – Environment Officer – 0772643692</li> <li>4. Wafula Dickson – Environment Officer</li> <li>5. Kato Gabriel – Environment Officer – 0785165405</li> <li>6. Nakiyingi Eva – Forest Officer – 0701209504</li> <li>7. Apiyo Kevin – Wetlands Officer</li> <li>8. Firmina Acuba – Senior Sociologist - Water and Environment Sector Liaison Department – 0752625837</li> </ol> <p><b>Uganda Wildlife Authority representative:</b></p> <ol style="list-style-type: none"> <li>1. Edgar Buhanga – Project Officer, IFPA – CD Project, Uganda Wildlife Authority (UWA)</li> </ol> <p><b>Gissat consultant:</b><br/>Harriet Mujuni<br/>Julius Nsereko</p> <p>Absent with apology:</p> |

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  | <ol style="list-style-type: none"> <li>1. Justine Namaara – UWA</li> <li>2. Sylvia Tumusiime – NFA</li> <li>3. Shallon Challenge - NFA</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Issues:</b>                                   | <b>Aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Rationale for the development of the VICs</b> | <ul style="list-style-type: none"> <li>• The rapidly expanding demand for tourism development associated with protected areas emphasizes the need to provide clear guidance that will contribute towards sustainable tourism consistent with the primary conservation objectives of protected areas.</li> <li>• VICs and tourism can create economic benefits for protected areas and surrounding communities and help to create greater support for conservation. There is therefore a need to establish ultra-modern VICs to achieve these objectives.</li> <li>• Tourism (VICs) provides a crucial and unique way of fostering visitors' connection with protected area values, making it a potentially positive force for conservation.</li> <li>• VICs are one-stop points where visitors arrive to get an “appetite” to experience the PAs. They are information points that can showcase historical, and cultural information among others. When they are established at the gates or near gates to the PAs, this makes a lot of sense and helps the visitors benefit more from their experience.</li> </ul> |
| <b>Involvement of local communities</b>          | <p>During all phases of the project, establish a definite connection between the VICs and the indigenous and/or host communities. During the ESIA stage, this may be accomplished by comprehensively analyzing all project-related impacts. Community resource management (CRM) and Community Forest Management (CFM) groups should be consulted on how the VICs can be equipped to benefit the host communities.</p> <p>Host communities can be involved in the VIC operation through local performances; the sale of cultural artefacts; support conservation; outsourcing the curio shop at the facility to the local communities <i>inter alia</i>.</p> <p>The ESIA report should elaborate on the social impacts of the project on host communities or social groups within the Project Area of Influence (AoI).</p>                                                                                                                                                                                                                                                                                           |
| <b>Resource consumption</b>                      | <p>Harvesting of rainwater as proposed by the design team is highly recommended, however, the collected water should be subjected to the conventional treatment processes to make it potable before consumption (usage). Rainwater can carry bacteria, parasites, viruses, and chemicals that could make consumers sick, and it has been linked to disease outbreaks.</p> <p>Resource consumption should be guided by the carrying capacity targeted for each VIC. The number of visitors/users for each VIC should be specified in each report to guide on the planned usage of resources and attendant waste generation impacts.</p> <p>Water abstraction both from the surface and underground sources require permission from the Directorate of Water Resources.</p> <p>Consider the use of steel members during the structural construction of the VICs to limit tree cutting and excessive use of timber during project establishment. The design team should consider using existing resources/staff residences/access roads, borrow pits and quarries</p>                                                  |

|                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                            | to minimize project-generated impacts within the sensitive ecosystems / avoid vegetation clearance or when unavoidable it should be to the bare minimum possible. All considerations must be made to minimize the project footprint within the selected PAs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Impact Assessment Mitigation Hierarchy (Section 115 National Environment Act, 2019)</b> | For the project ESIA, the consultants should use the mitigation hierarchy that consists of four steps and it is recommended that these are followed in order i.e Avoid, then Minimize, then Restore impacted areas and finally Offset any impacts that remain. Have a Biodiversity Action Plan and offsets should be triggered where necessary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Use of Performance Standards</b>                                                        | For the assessment of impacts on each habitat area, the consultants should use the PS4 guidance note: i.e recognizing that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration and/or intensification of impacts due to project activities. There is a need to avoid or minimize the risks and impacts to community health, safety, and security that may arise from project related-activities, with particular attention to vulnerable groups.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Siting of VICs</b>                                                                      | Clearly define the site selection criteria utilized by UWA and the National Forestry Authority (NFA) in prioritizing the VIC sites. This should clearly be outlined under the analysis of alternatives chapter. Project construction activities and the location of VICs within the selected PAs should not hinder the movement of wild animals or trails or impact fragile ecosystems. Minimize the requirements for landscaping.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Water Supply</b>                                                                        | For cases where the existing water supply infrastructure at the various VIC sites needs to be upgraded or there is a need to sink new boreholes, the proponents should apply for the necessary permits from the responsible lead agencies. This should also be done for all project structural plans and architectural drawings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Environmental and social impact assessment</b>                                          | <p>The ESIA must critically examine the following impacts and propose feasible mitigation measures to address them:</p> <ul style="list-style-type: none"> <li>• Introduction of invasive species</li> <li>• The behaviour of the workers (risk of poaching)</li> <li>• Social disruptions (cultural changes, social vices, HIV/AIDS and other infectious diseases)</li> <li>• The durability of the construction materials. All material should be acquired from licensed and monitored areas; consider material substitution where possible</li> <li>• Waste management during all phases of project implementation especially ESMP</li> <li>• Limitation of the project footprint</li> <li>• A biodiversity assessment must be conducted for all the proposed sites and alternatives. The findings of this assessment will be used to determine the potential ecological impacts of developing the VICs.</li> <li>• Detail a clear description of both project cumulative and residual impacts</li> <li>• Include a waste management specialist in the ESIA team to develop site-specific waste management plans and to guide further on the waste management principles</li> </ul> |



**Stakeholders' Consultation Record**

|                                           |                                                                                                |  |  |
|-------------------------------------------|------------------------------------------------------------------------------------------------|--|--|
| Project name  Code: GFA 220109            | ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED VIC IN OS PROTECTED AREAS & OS CFS |  |  |
| Date:                                     | 14-MARCH-2023                                                                                  |  |  |
| Proponent                                 | UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY                                      |  |  |
| Individuals / Organizations in Attendance | MINISTRY OF WATER AND ENVIRONMENT                                                              |  |  |
| Location                                  |                                                                                                |  |  |

Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel   Mail)               | Key Issues Raised / Discussed | Signature  Initial |
|-------------------------|--------------------------------------------------|-------------------------------|--------------------|
| Mawani Anino            | Assistant Commissioner - DESS                    |                               | Mawani             |
| Bob Kazungu             | Ag. Asst. Comm. Forestry Assessment & Monitoring |                               | [Signature]        |
| Patrick Otim            | Env. Officer 0772643692                          |                               | [Signature]        |
| Wafala Dickson          | Env. Officer                                     |                               | [Signature]        |
| Kato Gabriel            | Environment Officer - MWE 0785165405             |                               | [Signature]        |
| NAKITINGI EVA           | Forest officer MWE 0701209504                    |                               | [Signature]        |
| Edgar Buhanga           | Project officer IFPACB Project UWA               |                               | [Signature]        |

| API-TO KEVIN             | Wetlands Officer-Mr                              |  |          |
|--------------------------|--------------------------------------------------|--|----------|
| MUTUNU HARRIET           | head Consultant                                  |  |          |
| Firmina Acuba            | ESIA Team<br>Sen Sociologist<br>WESLD -082625837 |  |          |
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|                          |                                                  |  |          |
| Follow-up   Action Items | Person Responsible                               |  | Deadline |
|                          |                                                  |  |          |

## Consultation with the Ministry of Water and Environment (Directorate of Water Resources Management)

Table C.12: Summary of issues in meeting with the Ministry of Water and Environment (Directorate of Water Resources Management)

| Agency: Ministry of Water and Environment - Department of Environment Support Services |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date & place:                                                                          | 21 <sup>st</sup> March 2023 at the Ministry of Water and Environment – Level I – Nile Boardroom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Meeting attended by:                                                                   | <p><b>Directorate of Water Resources Management (DWRM) staff:</b></p> <ol style="list-style-type: none"> <li>1. Brenda Atuhaire – Senior Water Officer – <a href="mailto:brendathr141@gmail.com">brendathr141@gmail.com</a></li> <li>2. Kajimu Athamah - Senior Water Officer – <a href="mailto:kajimujr@gmail.com">kajimujr@gmail.com</a></li> <li>3. Denis Ocoromoc – Water officer</li> <li>4. Lillian Bainemirembe – Water officer – <a href="mailto:baineliliangabriella@gmail.com">baineliliangabriella@gmail.com</a></li> <li>5. Sekindi Isaac – Senior Water Officer - <a href="mailto:Isaac.Sekindi@mwe.go.ug">Isaac.Sekindi@mwe.go.ug</a></li> <li>6. Odong Joseph – Senior Water Officer – <a href="mailto:odongjoze@gmail.com">odongjoze@gmail.com</a></li> <li>7. Victoria Kinobe Nakatudde – Water Officer – <a href="mailto:victoriakinobe16@gmail.com">victoriakinobe16@gmail.com</a></li> <li>8. Ajok Paska – Hydrologist – <a href="mailto:paskaajok@gmail.com">paskaajok@gmail.com</a></li> <li>9. David Kataratambi – Senior Water Officer</li> <li>10. Rwarinda E. Martin – Ag. Assistant Commissioner DWRM</li> <li>11. Atesa Abigail – Senior Water Officer</li> <li>12. Okurut Daniel – Senior Water Officer</li> <li>13. Julius Ahaabwe - Senior Water Officer</li> <li>14. Nicholas Tumwine – Engineer</li> <li>15. Boaz Mwebaze - Senior Water Officer</li> </ol> <p><b>Uganda Wildlife Authority representative:</b></p> <ol style="list-style-type: none"> <li>1. Edgar Buhanga – Project Officer, IFPA – CD Project, Uganda Wildlife Authority (UWA)</li> </ol> <p><b>Consultant:</b> Gissat Environment Associates</p> |
| Agenda                                                                                 | <ol style="list-style-type: none"> <li>1. Opening Prayer</li> <li>2. Self-Introduction</li> <li>3. Opening Remarks by Chairperson</li> <li>4. Introductory Remarks by IFPA-CD Project Manager</li> <li>5. Presentation of the VIC Key Project Components and Impacts</li> <li>6. Reactions / Discussions</li> <li>7. Way forward</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|                                                                                                                                                   | <p>8. Concluding Remarks</p> <p>9. Closing Prayer</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>Opening Remarks by Asst. Commissioner – DWRM</p> <p>1. Requirement and Rationale of Public Consultation and Project Disclosure during ESIA</p> | <ul style="list-style-type: none"> <li>- Any developer of a scheduled project under the National Environment Act, 2019 (NEA) is required among other things to carry out an EIA to determine whether project arising impacts will not be harmful to the environment and if it has negative impacts, how these can be mitigated. The National Environment (Environment and Social Assessment), Regulations 2020 address the need for stakeholder engagement during the EIA process.</li> <li>- Key among the EIA process is the requirement to consult key stakeholders that include lead agencies and project affected communities.</li> <li>- Project developers are required to prepare a draft scoping report that is submitted to NEMA and other concerned Lead Agencies who review and provide comments to guide the ESIA process. This input informs the Terms of Reference that guide the conduct of the EIA.</li> <li>- Key objectives of consultation at scoping stage include: <ul style="list-style-type: none"> <li>a) To identify potential key stakeholders;</li> <li>b) To develop the proper consultation tools;</li> <li>c) To consult with key strategic stakeholders and introduce the project, obtain baseline data and to identify key issues;</li> </ul> </li> </ul> <p>Specifically, the consultative process is for:</p> <ul style="list-style-type: none"> <li>- Disclosure of project information (purpose, nature, scale, etc)</li> <li>- Risks and impacts of the project;</li> <li>- Proposed mitigation measures</li> </ul> <p>Outputs from the consultations are then fed into the project design and also inform the rest of the EIA process.</p> <p>It is important to note that the DWRM should have been consulted during the scoping exercise / stage of the project for their input.</p> |
| <p>Remarks by IFPA-CD Project Manager – UWA / NFA Representative</p>                                                                              | <p><b>Background of the project:</b></p> <p>a) Project is for investing in forests in selected Protected Areas within the Albertine Rift and West Nile in Uganda. It among other things looks at the effective management of the forest estate and also to see how to improve and or increase coverage and halt degradation within the country. This will be done through, <i>inter alia</i>, investments that will create jobs and generate more revenue from tourism assets (e.g., developing tourism access infrastructure and facilities, community-based tourism, diversification of tourism products) from these forest and wildlife PAs. The project also aims to enhance the capacity of the managers of environment in the country specifically in the forest sector to achieve the given objectives. It is managed by the Ministry of Water and Environment (MOWE), Ministry of Wildlife Tourism and Antiquities (MTWA) as part of the steering committee and is being implemented by UWA and NFA who manage most of the forests in Uganda.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | <p>b) There are a number of interventions that are intended to manage the forest estate but also efforts to give capacity to the implementors to generate revenue that can be invested in effective management of forests – underpinning the issue of sustainability. So, the project comes through majorly in the component of tourism.</p> <p>c) One of the areas identified during project design was investment in establishing modern visitor information centres (VICs) within 8 Protected Areas (Echuya, Bugoma and Budongo Central Forest Reserves under National Forest Authority (NFA) and Bwindi, Rwenzori Mt, Kibaale, Semuliki and Murchison Falls National Parks. The Albertine Rift hosts Uganda's natural resources of global significance. Some of the wetlands' ecosystems, (e.g the one in Murchison Falls National Park and peatlands and lake systems within Rwenzori Mountains National Park), are recognized as Ramsar Sites under the Ramsar Convention. Two national parks, namely Bwindi Impenetrable National Park and Rwenzori Mountains National Park, are recognized as World Heritage Sites under the UNESCO World Heritage Convention.</p> <p>d) The existing VICs were not giving the country a good image as a tourist destination. So the project is investing in building information centres that are modern and will give Uganda a face as a tourist destination.</p> <p>e) This project requires ESIA prior to implementation by virtue of the selected VICs in sensitive eco systems and Gissat LLP was contracted to undertake the required studies.</p> <p>f) The firm mapped out and is carrying out consultations with concerned stakeholders. Consultation is an ongoing process throughout the life of the project i.e. iterative.</p> |
| Presentation                                      | <p>To facilitate effective consultations, the consultants shared the project description using photos and graphics to illustrate the main components. This included the following:</p> <ul style="list-style-type: none"> <li>a) Description of the purpose, nature, scale and duration of proposed VIC project</li> <li>b) Summary of legal framework requirements applicable to the project and the ESIA</li> <li>c) An outline of the main risks, impacts and potential benefits of the project</li> <li>d) The project ESIA team and an invitation to provide comments.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>DISCUSSIONS</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Benefit/ Impact/ Concern/ Issues:</b>          | <b>Aspects discussed are presented below</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>The design and siting of the proposed VICs</b> | <ul style="list-style-type: none"> <li>• The designs of the proposed Visitor Information Centers should be bench marked against international standards for such facilities and other contemporary visitor information facilities in the neighboring countries like Kenya and Rwanda.</li> <li>• The project only targets PAs within the Albertine landscape and is only for establishment of VICs and not accommodation facilities.</li> <li>• Sustainable designs for all access routes and drainage should be adopted at all the proposed VICs to mitigate on risk of erosion leading to contamination of water bodies.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Flood Risks</b>                                | <ul style="list-style-type: none"> <li>• Some of the project selected areas are prone to flooding e.g River Mubuku at Mihunga site which is known to burst its banks. The river is also known to shift course which can impact on the project components. The design team should carry out a flood risk</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



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|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | <p>assessment to determine the flood risks for both fluvial and pluvial resources occurring within the identified project sites. Preferably a model of a 100-year flood event can be considered.</p> <ul style="list-style-type: none"> <li>• It was observed however that most components and infrastructure proposed will as much as possible be fitted within the existing footprint at all the selected sites. There will be minimum deviations from what is existing e.g parking areas, access roads, water supply etc.</li> <li>• In areas that are prone to flooding, facilities are being placed on raised ground e.g at Mihunga and Paara – therefore no anticipated flooding risks in this regard.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Sanitation and Sanitary Facilities</b>         | <ul style="list-style-type: none"> <li>• Sanitary facilities should not be located in areas with high water tables to reduce on the risk of pollution to the ground water resources.</li> <li>• Water-borne toilets and septic tanks should be placed away from surface or underground water sources to prevent pollution.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Resource consumption and water abstraction</b> | <ul style="list-style-type: none"> <li>• Harvesting of rain water as proposed by the design team is highly recommended, however, it is important to determine that the identified sources are sufficient and sustainable in the long term.</li> <li>• The capacity of the identified systems to manage the supply and demand and determination of the best supply option is based on the target demand (users) and whether the abstraction is from a surface or underground water source. This can only be done following an assessment of the characteristics of the identified source.</li> <li>• Water abstraction both from surface and underground sources requires permission from the Directorate of Water Resources especially where there is use of motorized pumps.</li> <li>• Need to engage qualified professionals to determine the project water use requirements (Hydrologists, Hydro-geologists, Water Resources Engineers, etc. The DWRM has a database of licensed hydro-geologists and should be consulted to get the certified specialists. The ESIA team should have a certified hydrologist and/or hydro-geologist to cater for water resources requirements of the project.</li> <li>• For cases where the existing water supply infrastructure at the various VIC sites needs to be upgraded or there is need to sink new boreholes, the proponents should apply for the necessary permits from the Directorate. For any construction near rivers, the contractors should apply for construction permits from the Directorate Water Resources Management.</li> </ul> |
| <b>Energy requirements</b>                        | <ul style="list-style-type: none"> <li>• Undertake an energy audit to determine reliable and sustainable energy supply options for each facility. Kitchens may require higher power supply than can be provided by the solar systems that are being proposed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Construction Permits</b>                       | Facilities close or across water bodies require construction permits that are issued by the DWRM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Solid waste management</b>                     | Waste management has to be right at each of the proposed VIC sites and there should be adaptation of best practices including segregation, recycling and final proper disposal. How the proponents plan to manage the generated waste and its disposal. Use of waste receptacles to ensure that all generated waste is properly collected and that there is no litter in the PAs. Placement of receptacles across the entire site so as to minimize pollution risks within the PAs. The report should provide details on where waste will be disposed of.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Water Resources Assessment</b>                 | Water sources and their use are only determined after thorough assessment (site investigations) to show that for all selected sites there is sufficient ground or surface water that can be used both for construction and operation phases in the long term. This will further aid in decision-making process prior to project implementation. An assessment should also be done to determine flood events and extent for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <p>at least a 50–100-year period prior to placement of all proposed project components. The assessment will provide information on among other things:</p> <ul style="list-style-type: none"> <li>- Water quality for selected sources;</li> <li>- Water security requirements;</li> <li>- Availability;</li> <li>- Demand;</li> <li>- Flood risk</li> </ul> <p>Location and conveyance of water needed for each of the selected sites.</p>                                                                                           |
| <b>Climate-resilient development</b> | Project will include construction of new structures and infrastructure e.g roads, drainage, energy supply systems, water supply and waste management. The design team should ensure that the components and infrastructure to be set up are climate-resilient e.g impact on choice of power supply whether it is a petroleum-driven generator or hydro power; erosion from roads that may cause pollution to water sources; avoiding wastage of resources among other things (use of water-saving faucets) and use water efficiently. |
| <b>ESIAs</b>                         | There are 8 selected PAs each with unique ecosystems among other things. Some areas are within gazette Ramsar sites or are important world heritage and cultural sites. These should be analyzed in detail and it is recommended that each site has a separate ESIA. This will make the review process easier and make use of site-specific characteristics in determining project approval conditions and monitoring requirements.                                                                                                   |
| <b>Oil Spills</b>                    | During construction, there could be oil and diesel spills, hazardous chemical spills, fluids including paint and solvent spillages. This however shall be mitigated by routinely checking machinery and vehicles for leakages, training staff to use construction equipment correctly and identify spills & leaks in the early stages among others. Filling of generators to be done in bunded areas and spills cleaned immediately.                                                                                                  |
| <b>Nature Walks</b>                  | National parks and forest reserves are vital for conservation but can also be used for recreation so the VICs can incorporate nature walks to attract more users. This is one way of promoting sustainable tourism.                                                                                                                                                                                                                                                                                                                   |
| <b>Project Objectives</b>            | Project should have one main objective which then can be split into sub sections to clearly bring out the key goal for implementation.                                                                                                                                                                                                                                                                                                                                                                                                |



Stakeholders' Consultation Record

|                                                                          |  |                          |        |            |                            |
|--------------------------------------------------------------------------|--|--------------------------|--------|------------|----------------------------|
| Project name/ Code: <u>202107</u> <u>ESIA For Proposed YICA</u>          |  |                          |        |            |                            |
| Date: <u>21/03/2023</u>                                                  |  |                          |        |            |                            |
| Proponent: <u>UWA and NFA</u>                                            |  |                          |        |            |                            |
| Location: <u>MDWE - LUZIRA</u><br><u>DWRM -</u><br><u>NILE BOARDROOM</u> |  | Village<br><u>LUZIRA</u> | Parish | Sub-County | County                     |
| Individuals / Organizations in Attendance                                |  |                          |        |            | District<br><u>KANUNDA</u> |

Purpose of the consultation: Environmental and Social Impact Assessment

| Name of person/official | Designation & Contact (Tel / Mail)           | Key Issues Raised / Discussed | Signature/ Initial |
|-------------------------|----------------------------------------------|-------------------------------|--------------------|
| 1. Brenda Atubaire      | Senior Water Officer<br>brenda@hrh@gmail.com |                               |                    |
| Edgar Buhiga            | Project Officer/UWA                          |                               |                    |
| 2. Kajimu Atumeli       | Senior water officer<br>Kajimu@egmail.com    |                               |                    |

3. Denis Ocoromee water officer

4. Kibini Brunemwembe Water Officer  
kibini@bunemwembe@gmail.com

5. Seindi Isaac Isaac Seindi@mac.go.ug

6. Odong Joseph SWO  
odongjoseph@gmail.com

|                          |                               |                                             |          |       |
|--------------------------|-------------------------------|---------------------------------------------|----------|-------|
| 7.                       | Victoria Kinobe<br>Nakatvalde | Water Officer<br>victoriakinobe12@gmail.com |          | NKSV  |
| 8.                       | KICK PAKK                     | Hydrologist<br>kukodjike@gmail.com          |          | Paulo |
| 9.                       | David<br>Kataratendi          | Senior Water<br>Officer                     |          | Paulo |
| Follow-up / Action Items |                               | Person Responsible                          | Deadline |       |
| 10.                      | Rwarinde<br>E. Martin         | Ag. Ac - CE                                 |          | Paulo |
| 11.                      | ATESA ABIGAIL                 | Senior Water<br>Officer                     |          | Paulo |
| 12.                      | Attachments: Daniel           | Senior Water<br>Officer                     |          | Paulo |

13. Julius Ahaabwe

Consultations by: .....

Signature: .....

Inquiries and comments please forward to: [talk2gissat@mail.com](mailto:talk2gissat@mail.com)

14. Nicholas Tumwine

15. Boaz Mwebaze

## Appendix E: Biodiversity Report

### ESIA REPORT FOR THE PROPOSED VISITOR INFORMATION CENTERS SPREAD ACROSS THREE CENTRAL FOREST RESERVES

#### Objective

This study is part of the initial step in the Environment and Social Impact Assessment process. It involves identification of potentially significant environmental impacts and/or elimination of insignificant impacts (NEMA ,1997) this study focuses the subsequent ESIA, to assess and mitigate potential impacts likely to be significant. It further aims at ensuring that the ESIA includes stakeholder concerns through consultation with potentially affected communities, government agencies, Non-Governmental Organisations (NGOs), private sector and the public

#### Biological environment – ESIA methodology

##### Vegetation

Field reconnaissance through the project locations were conducted in July 2022. Site specific vegetation descriptions and classifications were determined based on species dominance and floral features such as grasses, herbs, shrubs and trees land coverage along the sites. Habitat classifications were then determined based on floristic compositions and their distributions, for subsequent reference in the design of the sampling methodology for use during the detailed ESIA. Species of conservation concern and alien species within the sites were recorded.

Proximity of the study area to ecologically sensitive features were noted, and their geographical coordinates taken. Photographic records of the vegetation types/ habitats were taken. Secondary data relevant to vegetation within the project area was also reviewed to gain an insight on underlying issues pertinent for the detailed ESIA studies.

##### Mammals

Large and medium sized mammal surveys involved looking for physical signs (fecal, prints, bones etc.) of mammal presence and actual mammal sightings especially ungulates, primates and carnivores. Opportunistic data on the occurrence of smaller carnivores (genets and mongoose) was

##### Birds

Transects, Timed Point Count and opportunistic observations, as recommended by Nature Uganda, which in turn is based on the British Trust for Ornithology (BTO) method. Timed Point Count involved records all birds seen and heard from a Point Count Station for a set period of time.

For transects, the observer(s) walked slowly around the site (2 km an hour), stopping as necessary to use binoculars, and all birds seen or heard were recorded.

#### Key project activities

| Activity                                                                              | Description                                                                              |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Grassing                                                                              | Landscaping                                                                              |
|                                                                                       | Borrow and spread topsoil                                                                |
|                                                                                       | Seeding with recommended plant species                                                   |
|                                                                                       | Watering of trees / grass                                                                |
| Restoration of material borrow sites, stone crushing areas and temporary access roads | Spreading of spoil material, soils and topsoil in spoil areas                            |
|                                                                                       | Demobilization and restoration of disturbed location areas                               |
|                                                                                       | Rehabilitation of material borrow sites, stone crushing areas and temporary access roads |
|                                                                                       | Post construction monitoring                                                             |

#### Post construction phase

The post-construction phase involves mainly the use and maintenance activities carried out by the developer in order to ensure optimization of operations. It includes both routine and periodic maintenance works. Routine maintenance works includes patching, cleaning of drainage items, repairs of broken items (including maintenance of lights) etc. The periodic maintenance items are carried out after a scheduled period of time.



Other post-construction activities include enforcement of rules and other control requirements. On completion of the construction phase of the project, all environmental and social components impacted upon by the project shall have to be restored to their original state, where possible.

Hence:

All temporary structures erected during construction will be demolished.

All sites used for storing construction materials and temporary camp(s) used for accommodating construction workers will be properly cleared and cleaned.

Waste resulting from the project works will be collected and properly disposed.

Unpaved areas cleared of vegetation such as temporary access roads will be re-vegetated with grass and trees indigenous to the sites.

Boulders and stones exposed during construction shall be covered.

All borrow pits shall be landscaped by backfilling them with spoil material from cuts followed by stockpiled overburden (material that is found between top soil and the wanted gravel during excavation) initially removed from the borrow pit sites.

#### Invasive species

Invasive plants can be a potential threat to biodiversity conservation. The spread of invasive plants is often triggered by disturbances in the ecological systems. Invasive plants are potential threats to conservation, and may cause economic or environmental damage (NARO, 2007). They displace native species through aggressive and altered recruitments in natural ecosystems. Therefore, their management is critical. The International Finance Corporation (IFC) Performance Standard 6; on biodiversity conservation and sustainable management of living resources, provides that any project that wishes to be in compliance with the provisions therein in the standard, endeavours to address concerns related to invasive aliens.

Site specific accounts

#### **Budongo - Busingiro camp site**

The site was previously known for its habituated Chimpanzee groups and was already set up as a visitor information center. Currently dilapidated, the proposed site lies within meters to the defunct campsite. The site is a bushed forest dominated by trees such as; *Celtis africana*, *Maesopsis eminii*, *Cola gingatea*, *Markhamea lutea*, *Ficus sp*, *Voacanga thouarsii* and *Toona sinensis*. Shrubs recorded during the site survey were; *Alchornea sp*, *Vepris nobilis*, *Secamone africana*, *Vitex sp*, *Acalypha bipartita* and *Broussonetia papyrifera* while Herbs recorded were; *Piper sp*, *Achyranthes sp*, *Asystesia gangetica*, *Afromomum sp* and *Periploca sp*.



Appearance of the proposed site in Budongo

#### Invasive species

*Broussonetia papyrifera* is a notorious invasive plant species recorded in the proposed area. No other species under this category were recorded.

#### Species of conservation concern

There were no species of conservation concern recorded. However, Budongo is home to different medicinal trees, shrubs and hubs species and globally and nationally threatened species.

### Birds

The forest reserve is home to a host of different bird species ranging from Forest Dependent species (FF), through Forest visitors (F) and generalists (ff). Among the species studied in the forest is the Nahan's Francolin *Ptilopachus nahani*, a globally threatened Galliform. During the ESIA study, some of the species recorded included; Speckled Mousebird *Colius striatus*, Yellow-whiskered Greenbul *Eurillas latirostris*, Ross's Turaco *Musophaga rossae*, White-browed Robin chat *Cossypha heuglini*, Common Bulbul *Pycnonotus barbatus*, Black and White Casqued Hornbill *Bycanistes subcylindricus*, Yellow-fronted Canary *Crithagra mozambica* and Banded Prinia *Prinia bairdii*.

### Species of conservation concern

Although well known for species such as Nahan's Francolin *Ptilopachus nahani*, there were no records of threatened species within the environs of the proposed VIC site.

### Mammals

Busingiro is known to visitors for its Chimpanzee *Pan troglodytes* previously habituated and with trails starting from the defunct campsite. The groups were habituated to form part of the visitor attractions and these were within the proposed site. Although no Chimpanzee was recorded during the site visit, other species of primates recorded included; Olive baboon *Papio anubis*, Black and White Colobus *Colobus guereza* and the Vervet monkey *Chlorocebus pygerythrus*.

### Species of conservation concern

During the site visit, no mammal species of conservation concern was recorded. However, the Chimpanzee *Pan troglodytes*, a globally and nationally Critically Endangered species is known to exist within the proposed VIC site.

## Appendix F: Soil analysis report

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**COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES  
SCHOOL OF AGRICULTURAL SCIENCES  
Department of Agricultural Production  
SOIL ANALYSIS RESULTS**

**SOIL SAMPLE FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT  
FOR THE PROPOSED VICs AT BUSINGIRO TOURISM SITE (BUDONGO)  
LOCATED IN AKIIMI B VILLAGE KIHUNGYA SUCOUNTY,  
BULIISA DISTRICT AT GPS: 36N329717.53mE 189661.04mN**

### Laboratory analysis procedure

The air-dried soil samples were pounded, sieved through 2 mm to remove any debris then subjected to physical and chemical analysis following standard methods described by Okalebo *et al.* (2002)<sup>1</sup>. Soil pH was measured in a soil water solution ratio of 1:2.5; Organic matter by potassium dichromate wet acid oxidation method; total N determined by Kjeldhal digestion; Extractable P by Bray P1 method; exchangeable bases from an ammonium acetate extract by flame photometry (K<sup>+</sup>, Na<sup>+</sup>) and atomic absorption spectrophotometer (AAS) (Ca<sup>2+</sup>, Mg<sup>2+</sup>); and particle size distribution (texture) using the Bouyoucos (hydrometer) method. Heavy Metals and trace elements by AAS from an EDTA extract.

#### 1) SOIL ROUTINE ANALYSIS

| pH  | OM   | N    | Av.P | K         | Na   | Ca   | Mg   |
|-----|------|------|------|-----------|------|------|------|
|     | %ge  |      | ppm  | cmoles/kg |      |      |      |
| 5.9 | 1.35 | 0.09 | 9.88 | 0.87      | 0.22 | 6.66 | 2.35 |

#### 2) SOIL TRACE ELEMENTS AND HEAVY METALS

| Cu         | Zn   | Fe      | Mn    | Cr       | Co   | Ni       | Pb      | Cd       |
|------------|------|---------|-------|----------|------|----------|---------|----------|
| ppm(mg/kg) |      |         |       |          |      |          |         |          |
| 1.35       | 19.6 | 98.6    | 12.3  | 6.35     | 0.00 | 0.00     | 0.00    | 0.00     |
| 0.1-3.0    | 1-40 | 50-1000 | 5-500 | 0.1-20.0 |      | 0.05-5.0 | 0.2-2.0 | 0.03-0.3 |

#### 3) SOIL TEXTURE CLASSIFICATION

| %Sand | %Clay | %Silt | Classification       |
|-------|-------|-------|----------------------|
| 60.0  | 29.0  | 11.0  | Sandy Clay Loam soil |

  
**Bonny Balikuddembe**  
 Senior Laboratory Technician  
 Soil, Water and Plant Analytical Laboratory





## Appendix G: Water analysis report

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COLLEGE OF AGRICULTURAL AND ENVIROMENTAL SCIENCES  
SCHOOL OF AGRICULTURAL SCIENCES

Department of Agricultural Production

**WATER ANALYSIS RESULTS**

**BOREHOLE WATER SAMPLE**

**FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESMENT  
FOR THE PROPOSED VIC AT BUSINGIRO TOURISM SITE (BUDONGO CFR)  
LOCATED IN AKIIMI B VILLAGE KIHUNGYA SUCOUNTY,  
BULIISA DISTRICT AT GPS: 36N329815.40ME 189703.17MN**

| Parameter               | Tested results | Maximum limit | Remarks |
|-------------------------|----------------|---------------|---------|
| Colour (TCU)            | 2              | 300           | ✓       |
| TDS (mg/L or ppm)       | 98             | 1200          | ✓       |
| TSS                     | 0.2            | 100           | ✓       |
| pH                      | 6.8            | 8.0           | ✓       |
| Conductivity $\mu$ S/cm | 194            | 500           | ✓       |
| Lead (mg/L or ppm)      | 0.00           | 0.1           | ✓       |
| Nickel (mg/L or ppm)    | 0.00           | 1.0           | ✓       |
| Magnesium (mg/L or ppm) | 1.23           | 100           | ✓       |
| Sodium (mg/L or ppm)    | 12.3           | 100           | ✓       |
| Turbidity (NTU)         | 1              | 300           | ✓       |
| Calcium (mg/L or ppm)   | 1.21           | 100           | ✓       |
| Chromium (mg/L or ppm)  | 0.11           | 1.00          | ✓       |
| Iron (mg/L or ppm)      | 0.04           | 10.0          | ✓       |
| Nitrates (mg/L or ppm)  | 0.05           | 20.0          | ✓       |
| Chlorides (mg/L or ppm) | 12.3           | 500           | ✓       |
| Sulphates (mg/L or ppm) | 12.3           | 500           | ✓       |
| Coliforms (C.F.U/100ml) | 0              | 0             | ✓       |

  
Bonny Balikuddembe  
Senior Laboratory Technician  
Soil, Water and Plant Analytical Laboratory



## Appendix H: Waste management plan

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### Integrated Waste Management Plan (WMP) for the Proposed Budongo Visitor Information Centre

February, 2023

#### REVISIONS TRACKING TABLE

|                   |                                                                                                                    |
|-------------------|--------------------------------------------------------------------------------------------------------------------|
| Document title    | Integrated Waste Management Plan for the Proposed VIC within Budongo Central Forest Reserve at Busingiro Camp site |
| Document subtitle | Final Report                                                                                                       |
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## **1.0 Introduction**

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### **1.1 The need of the Waste Management Plan (WMP)**

As part of the duty of care requirements of both the National Environment Act (2019) and the National Environment (Waste Management) Regulations, 2020, The National Forestry Authority – the Proponent is obligated to develop a waste management strategy and implement appropriate solutions for the cradle to grave management of the waste streams that are generated during the construction, operational and decommissioning phases of the Visitor Information Center (VIC). The Act and Regulations further provide for the identification of opportunities to reduce the creation and disposal of the waste generated at facilities.

This Plan is therefore a key management tool that will contribute towards achieving sustainable waste management throughout the operation of the VIC. The WMP focuses primarily on the operational aspects of the project, however as required by the legislation, the construction and decommissioning phases are also addressed.

### **1.2 Purpose of the WMP**

The purpose of the Waste Management Plan is to describe the principles, procedures and management of the waste generated due to the various activities at the NFA – Visitor Information Center proposed at the Busingiro Camping Site. NFA has developed this Plan to ensure waste is reduced, reused and recycled wherever possible. This plan also outlines measures to manage and mitigate waste generation and resource consumption during the operation of the VIC. The Plan includes details on the following:

- a) The types and quantities of waste generated during the project phases;
- b) Procedures to collect and dispose of waste;
- c) Measures that will be implemented to minimise waste generation associated with the development; and
- d) A program for monitoring the effectiveness of these measures.

The Waste Management Plan is designed to support an ecological based management approach underpinned by adaptive management principles. Surplus or waste materials arise from either the materials imported to the site or from those generated on the site. Imported materials are those which are brought to the site for inclusion in the operations. Generated materials are those that occur during the daily operations of the site i.e., damaged stock and waste water.

This Plan further also considers other aspects to waste management such as waste reduction, segregation of waste, disposal of waste, financial impacts of waste disposal and recording, monitoring, education and reviewing. It also outlines the waste management procedures that have been put in place and demonstrate the benefits to the environment, how the effects can be measured and how these procedures and practices are sustainable.

### **1.3 Objectives of the Waste Management Plan**

The objectives of the Waste Management Plan include the following:

- a) Formalize waste handling, transfer and disposal activities associated with waste from the project facilities;
- b) To prevent inappropriate management of waste and associated risk of pollution of the environment;
- c) To facilitate waste minimization entailing avoidance, reduction, reuse, recycling or treatment before disposal;
- d) To streamline waste segregation, storage, and disposal and promote resource recovery from waste;
- e) To contain, control and dispose of waste in accordance with the required waste management practices (e.g., waste segregation);

- f) To define responsibility for waste management at the various levels of operation associated with project activities;
- g) To provide a framework for the selection of waste management service providers in line with cradle to grave principles (for project generated waste that cannot be disposed onsite);
- h) To provide actions and guidelines to ensure that waste management is undertaken in line with existing National Environment (Waste Management) Regulations, 2020.

## 2.0 Regulatory Requirements

This section summarises the legislative requirements related to the management of construction and operational waste.

An important consideration prior to assessing the waste impacts and providing appropriate mitigation measures associated with a proposed development is a review and consideration of the legislative framework, policies, guidelines and standards of the country in which the project is based. In addition, it is also important to consider the definition of waste (both hazardous and non-hazardous), the goals and objectives of the relevant waste management strategies and policies, the desirability of recycling, and any permitting requirements. When assessing the management options for waste streams, it is necessary to review the institutional capacity for waste management in Uganda and to consult the specific guidelines for identification of general and hazardous wastes.

The most relevant and significant national policies, laws and regulations for Uganda that apply to the WMP are summarised in box 2.1.

### Box 2.1: Relevant legislative framework

#### **Policy framework**

The National Environment Management Policy, 1994  
 Uganda Forestry Policy, 2001  
 Uganda Tourism Policy, 2015  
 Uganda Wildlife Policy, 2014  
 Uganda Museums and Monuments Policy 2015  
 National Climate Change Policy, 2015  
 National Policy for the Conservation and Management of Wetland Resources

#### **Legal framework**

The National Environment Act, 2019  
 The Uganda Wildlife Act,  
 The Prohibition of the Burning of Grass Act, Cap 33

#### **Regulations**

The National Environment (Environmental and Social Assessment) Regulations, 2020  
 The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000  
 The National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020  
 The National Environment (Waste Management) Regulations, 2020  
 The National Environment (Minimum Standards for Management of Soil Quality) Regulations, 2001

#### **Institutional framework**

National Environment Management Authority (NEMA)  
 National Forestry Authority (NFA)  
 Ministry of Tourism, Wildlife and Antiquities (MTWA)  
 Ministry of Water and Environment (MWE)  
 Uganda Tourism Board (UTB)  
 District Local Governments

### 3.0 Overview of the Budongo VIC and Waste Streams

#### 3.1 Project Overview

The project will support the development of visitor information infrastructure in Budongo CFR. The location of the preferred site within the forest reserve are shown in the table below.

Table 3.1: Location of the prioritized site

| S/No. | Proposed VIC                   | Location details                                                                                 | Coordinates UTM coordinates (36N WGS 1984)                              |
|-------|--------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|       |                                | Point                                                                                            | Easting (m E)      Northing (m N)                                       |
|       | Budongo Central Forest Reserve | Busingiro Camping Site in Akiimi B Village Garasoya Parish Kihungya Sub – County Bulisa District | <div>A</div> <div>B</div> <div>C</div> <div>D</div>                     |
|       |                                |                                                                                                  | <div>329718</div> <div>329810</div> <div>329613</div> <div>329522</div> |
|       |                                |                                                                                                  | <div>189646</div> <div>189551</div> <div>189407</div> <div>189523</div> |

The proposed development will comprise a total foot print of approximately 500 Sq Meters and will consist of the infrastructure shown in table 3.2 and figure 3.1 below.

Table 3.2: Proposed site components

| Item                      | Space function                                                                                                                                                                                                                                                                          |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Public facilities</b>  |                                                                                                                                                                                                                                                                                         |
|                           | Reception area                                                                                                                                                                                                                                                                          |
|                           | Reception; and Office                                                                                                                                                                                                                                                                   |
|                           | Auditorium / education                                                                                                                                                                                                                                                                  |
|                           | Seating area; and Tech room                                                                                                                                                                                                                                                             |
|                           | Waiting and instruction                                                                                                                                                                                                                                                                 |
|                           | Briefing area                                                                                                                                                                                                                                                                           |
|                           | Café / Exhibition                                                                                                                                                                                                                                                                       |
|                           | Seating area; Kitchen / counter; and Exhibition area                                                                                                                                                                                                                                    |
|                           | First aid clinic                                                                                                                                                                                                                                                                        |
|                           | Sanitary facilities                                                                                                                                                                                                                                                                     |
|                           | Toilets / Washrooms                                                                                                                                                                                                                                                                     |
|                           | Showers                                                                                                                                                                                                                                                                                 |
| <b>Service facilities</b> |                                                                                                                                                                                                                                                                                         |
|                           | Staff facilities                                                                                                                                                                                                                                                                        |
|                           | Staff room / back office workshop                                                                                                                                                                                                                                                       |
|                           | Storage and safety facilities                                                                                                                                                                                                                                                           |
|                           | Supply room / storage                                                                                                                                                                                                                                                                   |
|                           | Strong room                                                                                                                                                                                                                                                                             |
| MEP Services              | Tech room / generator / transformer<br>Water / solar heaters<br>Water pressure tank<br>Electrical Service<br>CCTV Equipment and IT equipment room<br>Waste disposal services<br>Centralized on site<br>Garbage containers<br>Parking areas<br>Landscaping<br>Garden and Outdoor seating |



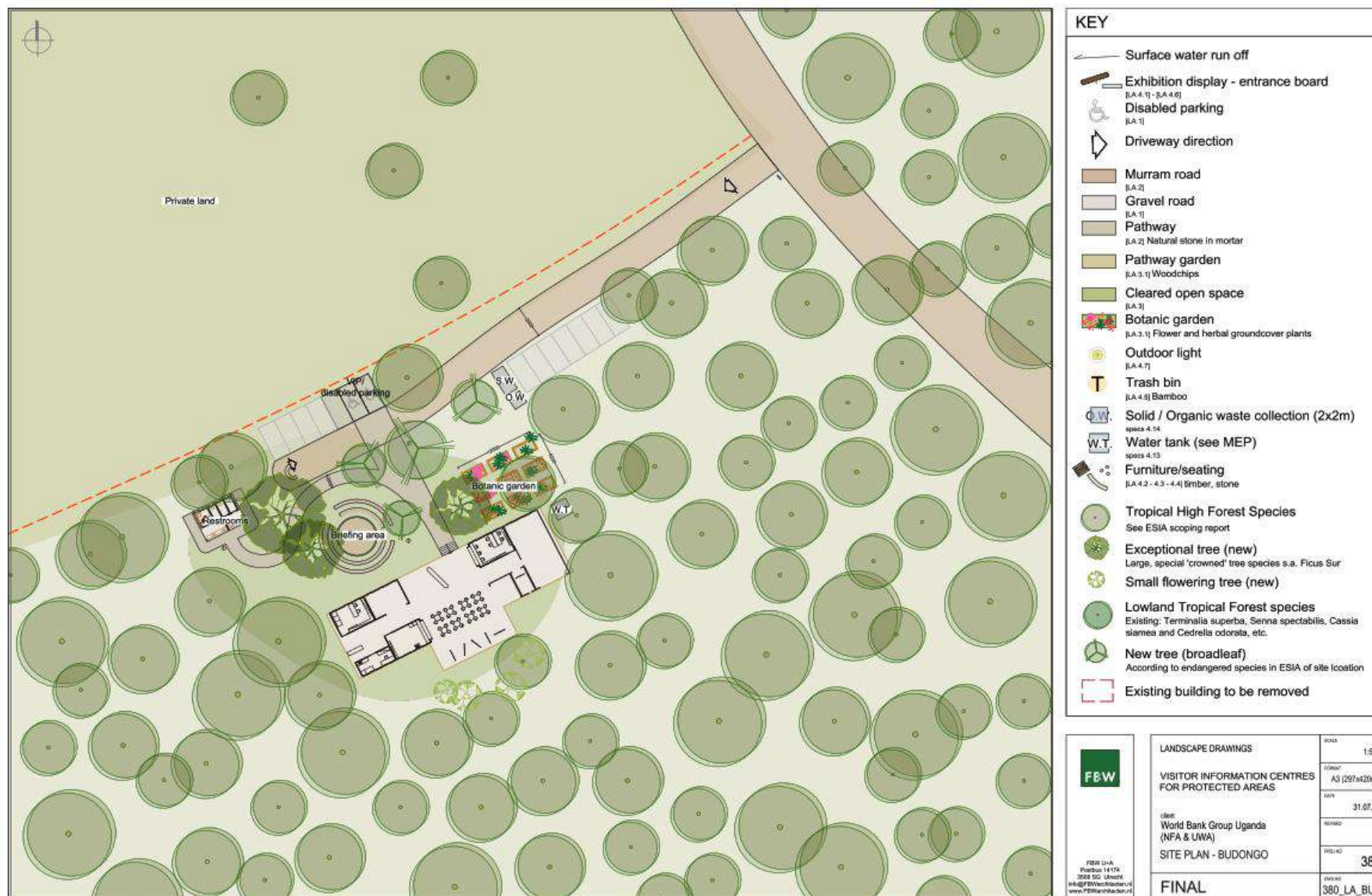


Figure 3.1: Proposed Busingiro VIC master / site lay out plan

### 3.2 Waste streams

The following predominant waste streams are expected to be generated at the VIC: -

- a) **Landscaping and Kitchen Wastes:** - Landscaping waste will include predominately vegetation wastes (leaves, grass cuttings, flowers or trimmings from bushes and hedges) and kitchen waste (include food wastes, fruit and vegetable peelings, leftovers (including meat and fish), egg and nutshells, coffee grounds, tea leaves, husks and seeds) are expected to be major component of the VIC's solid waste streams. These wastes are grouped into one waste stream, on the basis that they are both amenable to composting and may be managed collectively. This waste stream specifically excludes kitchen cooking oil, grease and fat which is not suitable for composting.
- b) **General Waste:** - General waste refers to waste classified as non-hazardous and can be defined as waste that does not pose an immediate threat to public health or the environment if properly managed. The general waste stream to be generated at the VIC is expected to consist of solid waste generated from daily operation activities.
- c) **Hazardous Waste:** - Hazardous Waste is defined as waste that has the potential, even in low concentrations, to have significant adverse effects on public health and the environment because of its inherent toxicological, chemical and physical characteristics. Common potentially hazardous waste that are expected to be generated at the facility include:
  - Unwanted, expired or contaminated chemicals including cleaning agents and detergents, disinfectants, oils, greases, solvents and solvent based paints, landscaping and pest control substances;
  - Medical waste from the first aid clinic;
  - Used solar panels
  - General items such as batteries; used office printers, cartridges and
  - Used cooking oils, fats and greases.
- d) **Sewage Sludge:** - The septic tank associated with the VIC will need to be periodically desludged (e.g., every 3-5 years); this will produce small quantities of sludge exhibiting similar toxicological characteristics as untreated sewage i.e., hazardous waste.
- e) **Construction Waste:** Including but not limited to domestic waste associated with workers on site; food and beverage containers; oily rags from vehicle and equipment maintenance; suspended sediment plumes associated with the material stockpiles; and vegetation waste from site preparation.

## **4.0 Waste Management Principles and Requirements**

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### **4.1 General Principles**

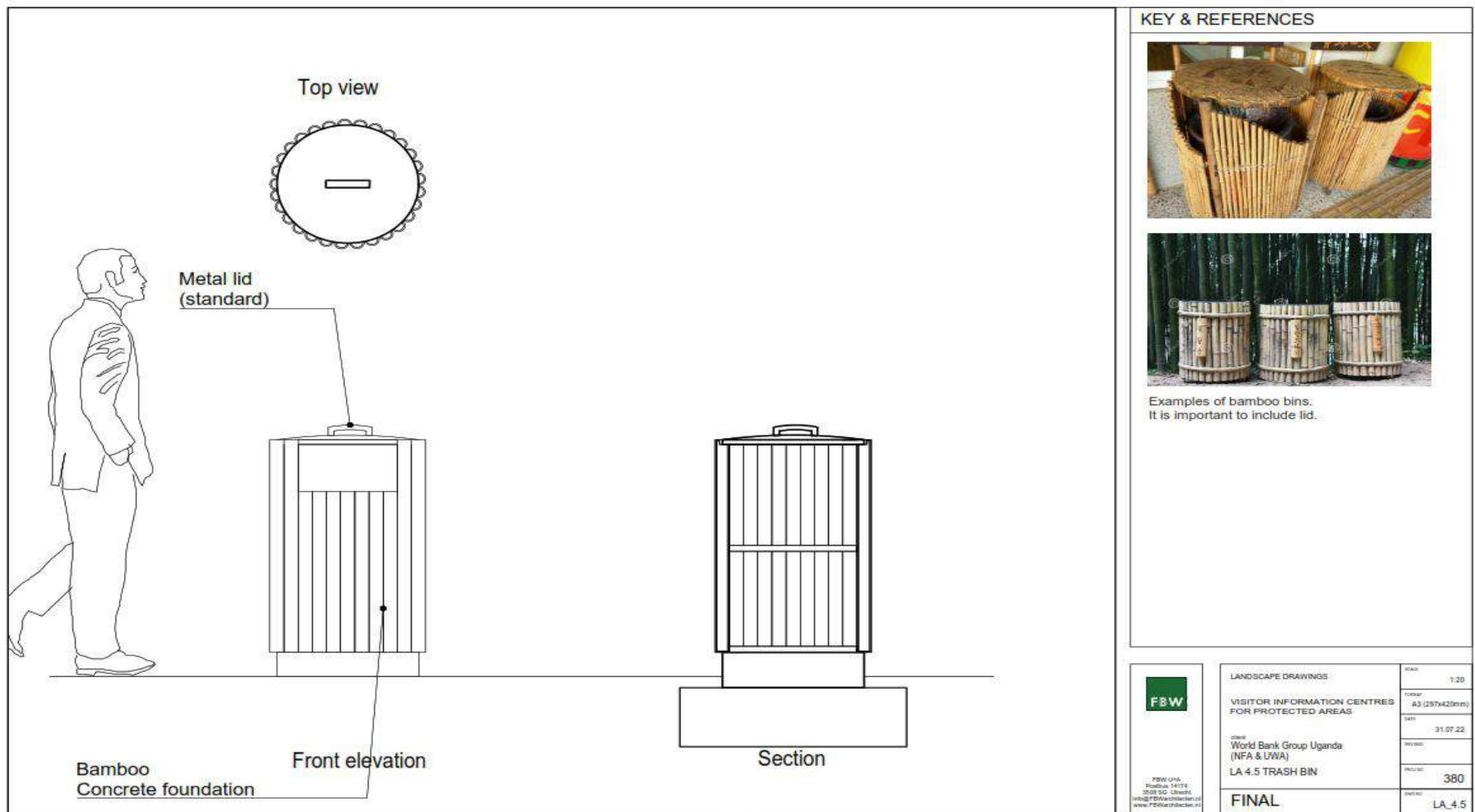
As far as reasonable and practical, waste streams will be managed in accordance with the national waste management hierarchy. This approach advocates that the options for management of wastes should be prioritized as follows:

- a) Reduce the amount of waste through avoidance or minimization;
- b) Recover materials for re-use;
- c) Recover materials for recycling;
- d) Treat wastes to render them less hazardous or to enable re-use / recycling; and
- e) Dispose of wastes in a manner that is aligned with the requirements of relevant legislation and which poses minimal harm to humans and the environment.

Adoption of this guiding principle will influence all activities on site including the procurement of materials for use on site. All contractors shall be required to demonstrate application of this principle in the execution of their contracts.

### **4.2 General Requirements**

- a) NFA shall take reasonable measures to ensure that the management of waste required for the proposed project is compliant with relevant national regulations and obligations;
- b) NFA shall ensure that its procedures and practices governing the management of waste reflect any changes and revisions to national hazardous material management conventions, regulations and requirements;
- c) NFA shall collaborate with national authorities, to the extent considered reasonable, in an effort to manage the risks associated with the storage, transport and disposal of waste required during the construction and operational phases of the project;
- d) NFA shall avoid or, when avoidance is not possible, minimize and control the release of waste;
- e) As far as practical, non-hazardous and hazardous wastes will be separated at source;
- f) Littering on site is prohibited and all general wastes must be placed directly into bins (as depicted in figure 4.1 below) located at strategic points around the facility. If bins are not available, waste must be contained in an appropriate manner until such time as it can be disposed of in a bin;
- g) Washing, whether of the person or of personal effects, and acts of excretion and urination are strictly prohibited other than at the facilities provided;
- h) NFA will manage waste in such a way so as to ensure that waste receptacles are not accessible to individuals without proper training and safety equipment; and
- i) NFA will ensure that this plan as well as all associated procedures are strictly enforced.



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Figure 4.1: Proposed waste collection bins



### 4.3 Waste Management Hierarchy

In accordance with international trends, the management of all waste streams that will be generated at the VIC should demonstrate support for the Hierarchy of Waste Management (HWM) (Figure 4.2), which is the basic principle of this WMP. The HWM aims to promote the re-use and recycling of wastes, giving effect to the concept of 'cradle to cradle' waste management. The HWM can be viewed as a straightforward set of management plans for waste. The hierarchy sets forth several waste management strategies or options according to importance and preference in a descending order. The aim is to extract the maximum practical benefits from the products and manage waste in the best possible manner, so that the minimum amount of waste is generated. Options of the hierarchy are listed as follows:

- a) **Prevention** is the best and most preferred strategy or option, and therefore ranks first. It is the most cost effective, as no waste means no cost is involved in its management.
- b) **Minimization** the generation of waste is the first option that should be considered, refers to the prevention of wastes from arising and optimizing material usage. This approach promotes the efficient use of resources and minimizes the volume of waste material that must be handled by employees and hauled away from the VIC's property. Responsibility for the minimization of waste generation generally lies with management, who decides what is brought into the property and, thereby, determines what eventually leaves the property as waste.
- c) **Reuse** refers to the process of using existing material instead of disposing this material to landfill. Whenever possible, the VIC should reuse items in their original form for the same or a different purpose rather than discarding them. If an item cannot be reused on site, the VIC operator should investigate the possibility of selling it or donating it to employees, charitable organizations, schools, businesses or other interested parties.
- d) **Recycling** is considered when reuse can no longer be carried out. Recycling refers to the collection of the recyclable waste streams that can be reused on site. The important step to ensure effective recycling practices is onsite waste segregation. This is the least favorable of the three waste management options and should be considered only if the reduce and reuse options are not applicable to specific waste streams. Encourages the separation at source of recyclable material from the general waste stream (waste separation at source is proposed, as the quality of recyclable materials is higher when separated there and not when mixed with other waste). It is also the waste management option that is most difficult to implement.
- e) **Energy Recovery** can be a viable option after reduction; reuse and recycling have been fully explored and generally is the final step in the exploitation of maximum benefits from waste. It can for example involve the incineration of waste (under strictly controlled conditions and licensing) and the recovery of the latent heat energy of the materials. The heat energy can then be converted into power to be used commercially or domestically.
- f) **Disposal** is the last and least preferred options in the hierarchy. There is always some residual material left over as waste. This is the case even after undergoing the preferred options in the solid waste management hierarchy. The left-over waste occasionally requires treatment prior to disposal to safe guard against environmental risks, pest problems, social, health, and safety issues.



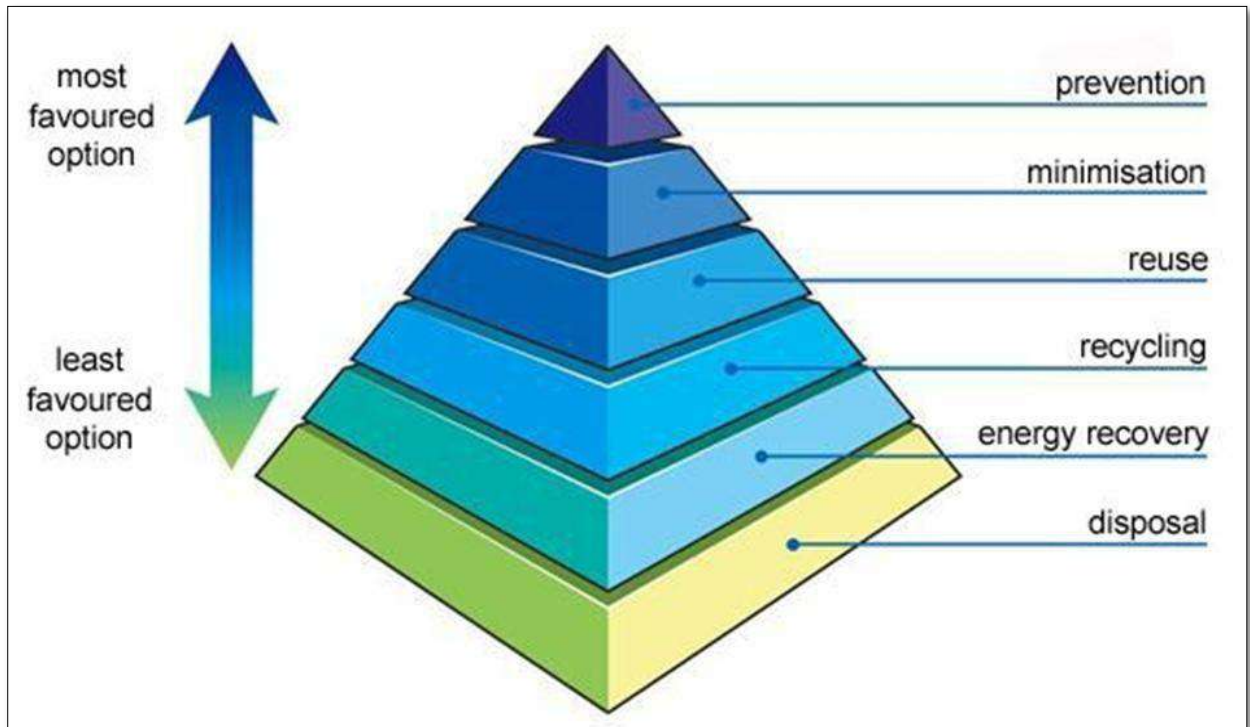


Figure 4.2: Typical waste management hierarchy

## **5.0 Management Actions**

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This section is the core of the WMP, and comprises steps to be taken by the NFA in order to implement the objectives of WMP. The management actions take cognisance of the WMP principles, and provide steps to be taken at the generation, collection, transportation, recovery or disposal stages of the waste management process.

The following guidelines have been included in the WMP to act as a source of information to the VIC regarding best environmental practices. The guidelines present various waste management recommendations which would be selected for implementation based on their applicability to the operation of the facility at any given time. In this way the guidelines will allow the VIC to continually evaluate options to improve waste management (i.e., continual improvement).

### **5.1 Waste Management Areas / Facilities**

Wherever practical, waste should be transported by the NFA (or appointed waste service provider) from the point of generation directly to the centralized waste storage area where it can be safely stored prior to offsite disposal. For efficiency it is permissible to establish intermediate storage areas / collection points; this would be at the discretion of the VIC, and all such areas would have to comply with safe storage requirements. The WMP contains guideline specifications of temporary storage of waste at the central storage area, as well as at intermediate collection points prior to offsite disposal.

#### **5.1.1 Storage of Waste**

In order to ensure that non-hazardous wastes are stored appropriately prior to disposal, the following requirements will be adhered to at all times:

- a) All bins will be clearly marked or color-coded to ensure that non-hazardous and hazardous wastes are not mixed accidentally. If certain waste types are to be collected separately for recycling, then bins for this purpose should also be clearly marked. Labels will be in English and the Lunyoro;
- b) Bins or similar waste receptacles will be located at each work area. These bins should ideally be located in areas that are not exposed to wind and rain but where this is not possible, bins will (as far as possible) be fitted with lids. Where bins are fitted with lids, these should be closed after use to prevent access by vermin or introduction of water during rainfall events;
- c) All bins should be located in a position to minimise the risk that they may be knocked over or damaged, and should not be located close to drains, storm water gutters, ponds or any natural water courses;
- d) All bins and skips will be maintained in good condition to ensure that any leachate or liquid waste does not pollute the environment;
- e) All waste bins and skips will be emptied daily from the different areas of collection. The responsibility for this activity will be assigned by NFA;
- f) Storage areas for combustible non-hazardous waste, such as cardboard and paper, must not be stored near sources of heat or open flame;
- g) The adequacy of waste bins and skips in each area will be monitored and if necessary, additional bins will be provided. Waste may not be stored outside of bins;
- h) Littering on site is prohibited and all general wastes must be placed directly into bins located at strategic points around the facility. If bins are not available, waste must be contained in an appropriate manner until such time as it can be disposed of in a bin; and
- i) Open burning of waste, other than under exceptional circumstances and on approval of the ECO, on site is prohibited.

### **5.1.2 Off-Site Disposal**

Even though the WMP recommends efficient drivers in order to reduce and recover maximum value the amount of waste materials produced, a portion of the waste generated at the VIC will still require to be disposed to a designated waste disposal site. The following waste disposal principles should be adhered to:

- ❖ The legal requirements of cradle-to-grave principles (duty of care obligations) should be adopted and enforced by the VIC– this means ensuring that only reputable waste transport companies and permitted waste disposal facilities are used.
- ❖ Record keeping of the waste types and quantities must be as accurate as possible, as it is important for planning and reporting purposes.

### **5.3 Hazardous Waste**

Considering the sensitivity of the Project area, the hazardous waste generated at the VIC will require stringent control and management to prevent harm or damage and hence liabilities. During the handling of hazardous waste, the following should be adhered to:

- i) As a minimum requirement, hazardous waste must be separated at source from the general waste stream. This will ensure that non-confirming waste does not enter the final disposal site, as well as preventing cross contamination and potential risks to personnel and the environment.
- ii) In addition to the hazardous wastes identified in this WMP, the VIC will be responsible for the identification of potential additional hazardous wastes associated with new practices, and the implantation of systems for their safe disposal.
- iii) The generation of hazardous waste should be avoided wherever possible. This would typically be implemented through procurement processes e.g., purchasing of less toxic / environmentally friendly products for use at the VIC.
- iv) Unavoidable hazardous waste is to be handled, stored and disposed of / recovered in a manner that does not result in environmental pollution or health and safety hazards to personnel.
- v) Only suitably qualified waste service providers should be used for the management of hazardous waste. This entails ensuring that all transportation and disposal / recovery permits and licenses are held by the service provider.
- vi) All hazardous waste transported from the VIC must be reconciled with safe disposal certificates to be issued by the waste management service provider. These should be kept on file for inspection by the environmental authorities if required.
- vii) The disposal of hazardous waste is required to comply with all relevant regulations, norms and standards pertaining to waste classification in order to ensure disposal at the correct landfill class.

#### **5.3.1 Sewage**

Waste water from all wash rooms will be channelled through manholes into a septic tank safely located at least fifty meters from key sensitive receptors.

### **5.4 Construction Waste Management**

Construction waste consists of mostly inert, unwanted materials directly or incidentally produced during the construction phase. Waste generated from construction activities on-site may include, concrete; timber off-cuts; insulation; scrap metal; general building and office refuse; waste soils from excavations; waste building materials; residual vegetative material; and oil and diesel contaminated materials. Improper management of the construction wastes generated has the potential to result in contamination and pollution of soils, ground water; the adjacent water bodies and adjacent properties from litter and wind or scavenger distribution of construction waste. This could eventually pose a threat to sensitive ecology of the Community Wildlife Areas. However, these potential impacts are anticipated to be minimal provided the

implementation of the following mitigation measures /actions are adhered to.

#### **5.4.1 Construction Site Requirements**

- a) A copy of this WMP must accompany all subcontractor agreements and require subcontractor participation.
- b) Each subcontractor will be made aware of the intent of this project with respect to reduction of waste and recycling.
- c) The subcontractor will be expected to make sure all their crews comply with the WMP, by promoting good practice awareness as part of health and safety induction / training for workers onsite. The implementation of appropriate training and induction procedures should ensure that all sub-contractors adopt best practice waste minimisation procedures.
- d) Based on the sequence and timing of construction activities, material specific waste hauling containers will be strategically located on the site and will be clearly marked.

#### **5.4.2 Non-Hazardous Construction Waste**

Non-hazardous waste refers to waste which is not classified as hazardous waste. Including concrete; timber off-cuts; insulation; scrap metal; general building and office refuse; waste soils from excavations and litter generated by the workforce.

- i. Metal waste is divided into ferrous (metals that consist primarily of iron and have low scrap value) and non-ferrous (metals and alloys not composed of iron e.g. copper, tin, aluminium, bronze, etc that have high scrap value). Metal waste does not pose any significant threat to public health or the environment if properly managed. Metal waste has commercial value and is to be sold on to a scrap metal contractor for recycling purposes.
- ii. Wood waste includes oversized cable reels, wooden packaging boxes, pallets and other wood materials. The storage of wood waste poses a potential fire risk, but generally does not pose a risk to the environment.
- iii. Pallets in good condition may be reused and are to be returned to materials suppliers on a return system – this will need to be negotiated with the relevant suppliers.
- iv. Damaged wood waste is to be donated to local communities
- v. Keep the site tidy to reduce material losses and waste. The appointed contractor will ensure that all personnel immediately deposit waste in the waste bins provided.
- vi. Recycle suitable spoil, demolition materials, prunings, and surplus construction material arising from the works on site to avoid the need to transport materials.

#### **5.4.3 Hazardous Construction Waste**

Hazardous waste can be defined as waste which can, even in low concentrations, have significant adverse effects on public health and/ or the environment.

- i) Waste from ablution facilities must be regularly removed and care must be taken to ensure that there is no spillage, which would result in possible soil or water contamination.
- ii) Load and unload any solid hazardous materials in a manner that reduces potential spills.
- iii) Hazardous substance containers, contaminated soil, clean-up materials, etc., must be transferred to an appropriate disposal site on a regular basis.
- iv) Safe disposal certificates for any hazardous waste removed from the site must be kept on file.
- v) Complete waste transfer notes before any waste leaves the site
- vi) Disused fuels, solvents and other liquid wastes (e.g., used oils from construction vehicles) maybe stored on site in vessels equipped with secondary containment structures to prevent contamination of soil, groundwater and surface waters due to accidental spills or releases.

- vii) Ensure construction, demolition and refurbishment contractors have systems in place for ensuring waste materials (wood, metal, and concrete) are reused wherever possible, and/or recycled off site.
- viii) Reduce the use of hazardous chemicals, and ensure staff use and dispose of chemicals properly.
- ix) Any contaminated soil / substrate must be removed and stored in a skip until it can be disposed of at a permitted disposal site.

#### **5.4.4 Good Management Practices (GMP)**

- (i) An adequate number of 'scavenger proof' refuse bins must be provided at the construction site and at the construction camp,
- (ii) Segregate different types of waste as they are generated using different skips where possible (General wastes, non-hazardous wastes and hazardous wastes),
- (iii) At a minimum there should be skips for wood, metals, inert and mixed materials,
- (iv) If there is a shortage of space and not enough room for multiple skips the principal contractor should employ a licensed waste management company to deal with waste

The Waste Management Plan" shall be implemented and executed as follows:

- (i) Salvageable materials will be diverted from disposal to landfill where practical and possible and salvaged for reuse and or recycling where practical and possible.
- (ii) There will be a designated area on the construction site reserved for materials that can be recycled.
- (iii) Areas shall be marked to designate what recycle materials are to be stored there.
  - a) Onsite recycling containers and/or areas will be clearly marked.
  - b) Safe disposal waybills for all waste and material loads removed from the site must be kept on file.
  - c) Complete waste transfer notes before any waste leaves the site
  - d) In order to adequately manage sewage wastes during the construction phase, a sufficient number of toilets must be provided for construction workers and use of the natural environment for ablutions must be prohibited,
  - e) Ensure all waste service providers have a valid waste carriers registration certificate,
  - f) The contractor or may not dispose of any waste and / or construction debris by burning, or by burying.
  - g) The contractor will maintain 'good housekeeping' practices as ensure that all work sites and construction camp are kept tidy and litter free.
  - h) The working areas and storage sites must be cleared of litter on daily basis.

#### **5.5 Decommissioning Phase Waste Management**

At the time of preparation of this document there were no plans to decommission the VIC; however, should this eventually be the case it is likely that the majority of the infrastructure and associated equipment would require to be removed from the site. Given the sensitivity of the environment within the Central Forest Reserve (CFR), the exception would probably be installed hard surfaces, ablution facilities and the office block, furniture from guest rooms all of which could be used by future users of the property in the CFR, or donated to worthy organizations (schools, hospitals, clinics, and homes).

General and hazardous solid wastes likely to be produced during decommissioning phase include demolished building materials, obsolete equipment and machinery, piping, fuel storage containers, electrical and electronic equipment.

Where possible, these wastes should be recycled and if not possible, then should be disposed of appropriately. As discussed in previous sections, the surface of certain components of the VIC may have become contaminated during the operation of the VIC and would need to be washed / decontaminated prior to disposal. The resulting wash water would need to be treated



to the appropriate standard prior to disposal. The exact quantity of waste requiring disposal during decommissioning is not known but could be significant. It is suggested that a suitably qualified specialist be consulted to undertake a waste classification study prior to the initiation of any decommissioning activities.

#### **5.6 Performance Indicators**

- (i) No non-compliances associated with transport, collection, storage and disposal/re-use of solid wastes;
- (ii) Completion of waste training and induction program by contractors;
- (iii) Establishment of separate waste stream management infrastructure;
- (iv) Use of different colour bins for collecting different categories of waste to promote the segregation of waste for efficient resource recovery;
- (v) Acceptable housekeeping across the site.
- (vi) Stockpile areas for construction material, generation and disposal of building waste & liquids and vehicle maintenance, and
- (vii) Clearly labelled recycling receptacles / bins.

## 6.0 Roles and Responsibilities

| S/No. | Position Title                            | Responsibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.    | NFA – Sector Manager                      | <ul style="list-style-type: none"> <li>(i) Ensure that sufficient resources are made available to implement this management plan;</li> <li>(ii) Ensuring that the project has all necessary environmental authorisations and permits related to the management of wastes. These will need to cover the temporary storage, transport (if applicable) and final disposal of wastes.</li> <li>(iii) Ongoing liaison with National and Provincial Government agencies and regulatory authorities regarding the management of wastes;</li> <li>(iv) Continuously reviewing the effectiveness of the actions described in this plan as informed by regular review of monitoring reports prepared by the ECO;</li> <li>(v) Evaluate and, where appropriate, authorise new options related to the management or disposal of wastes;</li> <li>(vi) Ensure that complaints and non-conformances related to management of waste are recorded and addressed within an acceptable timeframe;</li> <li>(vii) Recommending and/or developing corrective actions in conjunction with employees, contractors and local authorities in the event of significant non-compliance in terms of waste management;</li> <li>(viii) Take necessary steps to enforce compliance with this plan where this is lacking;</li> <li>(ix) Ensure that employees and contractors are aware of and have the necessary training to comply with this plan;</li> <li>(x) Monitor changes in national legislation related to the management of waste and update this management plan accordingly;</li> <li>(xi) Periodically review the effectiveness of the plan;</li> <li>(xii) Ultimate responsibility for the implementation of this plan; and</li> <li>(xiii) Overall responsibility for ensuring implementation and compliance with this management plan.</li> </ul> |
| 2.    | VIC - Environmental Control Officer (ECO) | <ul style="list-style-type: none"> <li>(i) Assist the NFA to ensure that contractors and employees comply with the requirements of this plan during the construction phase;</li> <li>(ii) Maintenance of the Waste Register for the site; Keeping records of all incidents associated with waste during the construction phase and reporting these to the NFA;</li> <li>(iii) Giving a report back on issues related to waste management at construction meetings and other meetings that may be called regarding environmental matters;</li> <li>(iv) Ensuring that all employees and contractors are aware of project-related requirements for management of waste;</li> <li>(v) Undertake any specific monitoring during the construction phase required by this plan;</li> <li>(vi) Manage any remedial actions required in the event of non-compliance with the requirements of this plan;</li> <li>(vii) Ensure that communities are aware of the complaints register and that they can use this to report issues related to waste management; and</li> <li>(viii) Ensure that complaints related to waste are recorded and resolved within an acceptable timeframe.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3.    | VIC Employees and Visitors                | Comply with the requirements of this management plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 4.    | Contractors                               | <ul style="list-style-type: none"> <li>(i) Provide evidence of consideration and application of the waste management hierarchy during the execution of their contracts;</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                            | (ii) Submit a waste management method statement to NFA for approval that describes in detail the types and quantities of waste likely to be associated with the execution of their contract(s) as well as the manner in which each waste type will be managed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5. | External Waste Contractors | <ul style="list-style-type: none"> <li>(i) Comply with the requirements of this management plan as well as national legal requirements;</li> <li>(ii) Manage all waste in strict accordance with the conditions of their contracts;</li> <li>(iii) Ensure that their employees are adequately trained to ensure that they are able to manage waste assigned to them by NFA in compliance with the requirements of this plan and relevant legislation;</li> <li>(iv) Provide NFA with evidence of safe disposal (waste manifests) of project wastes assigned to them;</li> <li>(v) Maintain records of all project wastes managed by them; and</li> <li>(vi) In the event of an accident involving waste assigned to them by NFA, to immediately inform the applicant and / or its representative.</li> </ul> |

## 7.0 Monitoring and Reporting

NFA will undertake additional monitoring to evaluate the effectiveness of this plan. Specific requirements are described below.

Table 7.1: Monitoring Matrix

| S/No. | Key Performance Area | Key Performance Indicators                                                                                                                                                                                                                                                                                                                                                                | Checking Procedure                                                | Frequency  |
|-------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------|
| 1.    | Compliance with plan | (i) % Contractors with approved waste method statements<br>(ii) Number of reports of incorrect storage or disposal waste;<br>(iii) Frequency of incidents of littering;<br>(iv) Integrity of waste storage facilities;<br>(v) % Compliance of treated effluent with relevant limits<br>(vi) % Compliance of storm water with relevant limits<br>(vii) State of storm water infrastructure | Audits                                                            | Monthly    |
| 2.    | Waste quantification | (i) Quantity of non-hazardous waste requiring disposal<br>(ii) Quantity of hazardous waste requiring disposal                                                                                                                                                                                                                                                                             | Quantification by volume or mass                                  | Monthly    |
| 3.    | Training             | % Employees trained on management of wastes                                                                                                                                                                                                                                                                                                                                               | Training records (including induction and more focussed training) | Continuous |
| 4.    | Complaints Register  | Number of complaints or formal cautions related to management of wastes                                                                                                                                                                                                                                                                                                                   | Complaints Register or cautions / fine                            | Continuous |

## **8.0 Record Keeping**

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All records relating to the management of wastes must be kept on file by NFA. All activities undertaken will be recorded. As a minimum the following records will be kept:

- (i) A comprehensive Waste register showing the quantities of waste generated on site and disposal routes for each;
- (ii) Material Safety Data Sheets (MSDS) for all hazardous chemicals;
- (iii) Permits related to the management of wastes;
- (iv) Records of communication with internal and external stakeholders regarding management of wastes;
- (v) Records of training related to the management of wastes;
- (vi) Records of audits and inspections related to the management of wastes; and
- (vii) Copies of communication with contractors related to the requirements of this plan.



## **9.0 Reporting**

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A summary of all monitoring activities and outcomes related to this plan will be included in a monthly internal report to be submitted to the NFA. The ECO will submit a monthly audit report to the NFA. In addition, the outcome of these reports will be shared with both the authorities and the communities upon request.

## **10.0 Training and Awareness**

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NFA will ensure that all contractors are aware of the importance of minimising impacts related to waste and specific mitigation measures aimed at achieving this. This will be achieved by including an element on waste management in the mandatory induction training for contractors. In addition, contractors that are involved in specific activities that are likely to have a significant impact will undergo additional task-based training.

Personnel tasked with monitoring functions related to this management plan need to be subject to additional training to ensure that this function is correctly undertaken, with the required resources made available to them by the applicant.

## **11.0 Evaluation**

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NFA will ensure that this Plan is reviewed for efficacy, and any necessary changes thereto will be reflected in the periodic revisions of this document. This plan will be reviewed at least annually or more frequently if there are any potentially significant changes to the way in which the activities are undertaken or if there are changes to applicable regulations related to the management of wastes.

## **11.0 Conclusion**

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In terms of National Environment Act (2019), every person has the duty to manage any waste generated by his or her activities or the activities of those persons working under his or her direction in such a manner that he or she does not cause ill health to the person or damage to the environment. If the above-mentioned waste management recommendations are adopted, it is anticipated that the majority of negative environmental impacts caused by improper management of the various waste streams can be mitigated.

**Appendix I: Health and Safety plan**

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**Health and Safety Plan (HSP) for the Proposed  
Budongo Visitor Information Centre**

**February, 2023**



## REVISIONS TRACKING TABLE

|                   |                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------|
| Document title    | Health and Safety Plan for the Proposed VIC within Budongo Central Forest Reserve at Busingiro Camp site |
| Document subtitle | Final Report                                                                                             |
| Date              | 16 <sup>th</sup> February 2023                                                                           |
| Version           | 1.0                                                                                                      |
| Author            | Gissat Environment Associates                                                                            |
| Client Name       | National Forestry Authority                                                                              |

## **1.0 Introduction**

The National Forestry Authority (NFA) is committed to providing a safe and healthy environment for its employees, and visitors at the proposed Budongo - VIC. Further, NFA recognizes its role as a leader in environmental, safety and health as well as its obligation to serve as an example to tourists and the community. NFA will endeavour to continuously improve its safety and environmental performance through the following policy objectives:

- (i) Develop, improve and maintain programs and procedures to comply with all applicable laws and regulations.
- (ii) Monitor progress through periodic evaluations.
- (iii) Ensure personnel are properly trained and provided with appropriate safety and emergency equipment.
- (iv) Take appropriate action to correct hazards or conditions that endanger health, safety or the environment.
- (v) Consider safety and environmental factors in all applicable operating decisions.

### **1.1 Purpose of the Plan**

The Health and Safety Plan (HASP) reaffirms NFA's commitment to safety and good environmental stewardship. The HASP also establishes a uniform system to assist tourists, and the VIC staff meet their health and safety responsibilities.

This plan is intended to help prevent accidents, illnesses, and injuries; increase safety awareness, meet the requirements or applicable environmental, occupational health and safety laws and regulations; reduce institutional liability and establish safety responsibilities for the VIC staff, visitors and the host community.

This portion of the HASP is intended to identify general responsibilities and protocols. Further responsibilities, protocols and other information will be included in specific plans.

### **1.2 Roles and Responsibilities**

Given the size and intended purpose of the VIC, the responsibility of ensuring all health and safety protocols are adhered shall be vested to the NFA sector Manager, VIC coordinator and the Visitors.

## 2.0 Safety and Health Measures

### 2.1 Natural Hazards

#### 2.1.1 Earthquakes

##### 2.1.1.1 Existing Hazard

Earthquake occurrence in Uganda is associated with the East African Rift System (EARS) (Geological Surveys and Mines Department). Uganda lies between the two arms of the EARS. Its west border with D.R. Congo lies almost entirely in the western branch of the EARS, while the eastern border is about a few hundreds of kilometers from the Eastern Branch of the EARS; and there is more seismic activity in the western than in the eastern branch. Other tectonic features that have a great influence on earthquake occurrences in Uganda include: the Ruwenzori Mountains; the Katonga Fault; and the Aswar shear zone.

The tectonic setting mentioned above makes Uganda earthquake prone, and the tectonic movements of geological structures have been responsible for the occurrence of major earthquakes in Uganda. One of the earthquakes recorded in the project area include the 9<sup>th</sup> October, 1991 earthquake which occurred in Lake Albert. The epicentre was around Butiaba. It measured 5.3 on Richter scale. The earthquake destroyed semi-permanent buildings within the environs of Butiaba. Figure 1 below shows the seismicity map highlighting the locations of earthquake epicentres in Uganda while figure 2 indicates the epicentral distribution of earthquake in the Albertine graben.

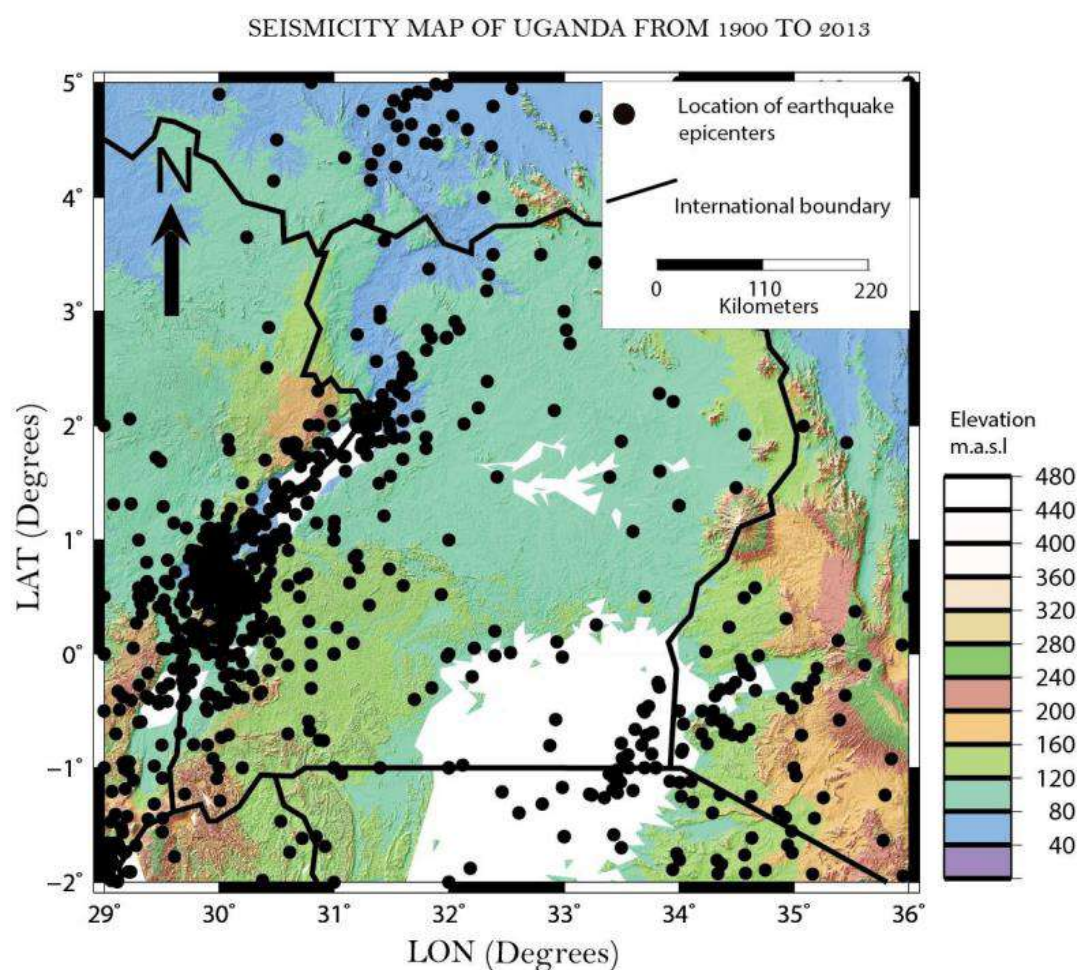
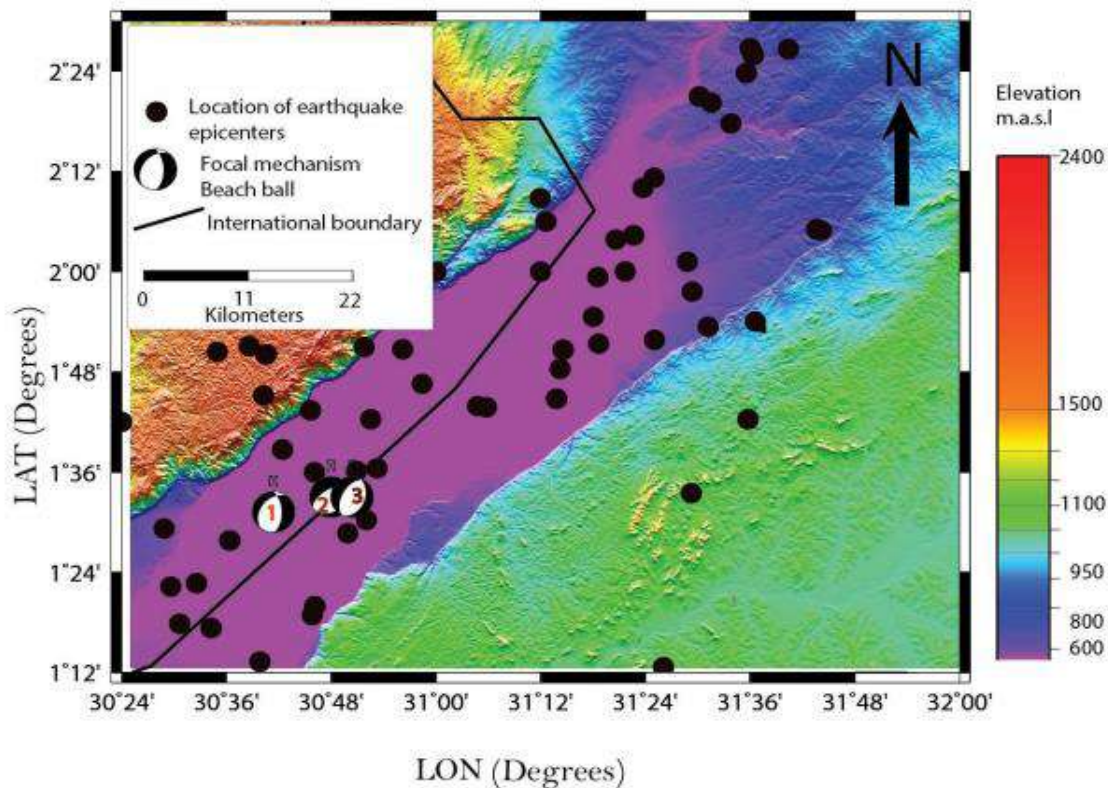


Figure 1: Seismicity map of Uganda (1900-2013)  
Source: Geological Surveys and Mines Department.

## EPICENTRAL DISTRIBUTION OF EARTQUAKES WITH MAGNITUDE 4.0 AND ABOVE LOCATED IN THE ALBERTINE GRABEN (1965-2013).



Numbers 1, 2 and 3 represent focal mechanisms of the July 2013 earthquakes in the Albertine Graben

Figure 2: Focal mechanisms of the recent events in the Albertine Graben  
Source: Geological Survey and Mines Department.

The primary impact relating to earthquakes is the effect of ground shaking during the passage of seismic waves. There is the potential for buildings to be damaged by the shaking itself or by subsidence where the ground beneath settles to a different level than it was before the earthquake. Buildings on soft sediments (sand, silt, clay, etc.) are the most vulnerable to damage as the soft sediments amplify earthquake shaking and become unstable. As the collapse of man-made structures is by far the greatest cause of casualties during earthquakes, it is essential that new buildings are constructed to withstand their effects. The greatest risk exists during the construction phase when facilities are being built. Once the VIC is constructed, the risk of damage is significantly reduced. If isolated damage were to occur, tourists or people accessing the VIC may need to be relocated to alternative information centres if any whilst repairs are undertaken. The Standard Emergency Warning Signal (SEWS) can be used in the event of an earthquake. However, as it is not possible to predict the precise timing, location and size of an earthquake to a sufficiently high degree of accuracy, the associated lead time for warnings is reduced, if not eliminated. For this reason, evacuation is rarely an effective strategy for mitigating earthquake hazard.

Whilst the likelihood of a stronger earthquake greater than magnitude 5 would be rare, the consequences could be catastrophic. Apart from causing shaking, the secondary impacts of large earthquakes may also trigger fires which can potentially cause casualties or damage roads, power and communication lines and other critical infrastructure. Whilst this is extremely



unlikely, it is important to note that even though the project would not be directly impacted (due to its location); the secondary effects to supply chains, transport and the tourism industry could be significant.

### **Proposed Controls and Mitigation Strategies**

The structure of the VIC can be subjected to shearing, bending, torsion, tension and compression during earthquakes. To effectively mitigate the risks, it is vital to ensure that all structures comply with the earthquake loading provisions of the Building Code of Uganda. All infrastructure deemed critical must meet or exceed current design standards.

Additional controls and treatment strategies include: development of an Emergency Management Plan for the construction and operations phases, which will need to address: prevention, preparation, response and recovery (PPRR) for earthquake hazard, emergency management training for key personnel, a Business Continuity Plan to minimise disruption to the business should an earthquake occur and adequate insurance in the unlikely event of damage. An assessment on the effectiveness of these controls resulted in a rating of high.

#### **2.1.2 Bush fires**

The threat of bushfire is a seasonal risk. During the dry season, the vegetation matures and cures to become quite vulnerable to bushfires for the remainder of the year. The high temperatures, low humidity and gusty winds, increase the risk of bushfire and provide prime conditions to fuel fires. Bushfires can be caused by natural occurrences such as lightning strike, be accidentally started or deliberate acts of arson.

A “Bushfire Prone Area” includes a potential impact buffer with a default width of 100m from all areas of medium, high or very high potential bushfire intensity. This is an area with the potential to support a significant bushfire or the potential to be subject to significant bushfire attack. Bushfires in the project area may have the potential for high to extreme levels of flame attack, radiant heat and ember attack as a result of high potentially hazardous vegetation, fuel loads, slope and severe fire weather.

Bushfires / fires are potentially harmful to people and to property and may cause damage to or loss of infrastructure, fauna injury or death and loss of ecological habitat. The closest fire brigade is within Masindi Town which is about 40km from the preferred site.

### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with bushfires, adequate firebreaks and fire trails should be constructed and maintained as containment lines. The site must have more than one access for emergency services vehicles and lots should be designed so that their size and shape allow for efficient emergency access to buildings for fire-fighting appliances (e.g., by avoiding long narrow lots with long access drives to the VIC, single points of access and dead-end roads).

Building construction and design can also be used to minimise the impact of ember attack and radiant heat on a building (e.g., iron roofing instead of tile, roof angles to minimise vegetation falling on the roof and leaf gutter guards, etc.). Critical infrastructure must meet or exceed current design standards, have regular maintenance programs implemented to ensure a defensible space is provided around physical and critical infrastructure which is free from vegetation and other bushfire hazards. NFA must identify key personnel that can be trained as the Fire Management Team to manage bushfire risk and to implement fire protection strategies for the VIC. This may include undertaking an annual program of planned mitigation burns (in cooperation with the Uganda Police Force and other agencies / landholders) to protect visitors and assets and to minimise risk. Additionally, the Emergency Management Plan for the site should address prevention, preparation, response and recovery (PPRR) for



fire hazard and include arrangements for providing warnings and information to guests during times of high fire danger; suspending outside (high risk) activities in the event of a fire occurring.

### **2.1.3 Climate Change**

Climate change will likely exacerbate the frequency and severity of natural hazard events. Climate change predictions indicate that we will increasingly be affected by changes in temperature, rainfall and extreme weather conditions. Therefore, NFA should consider effective adaptation measures at the outset of the project to better manage future climate risks.

#### **Proposed Controls and Mitigation Strategies**

The management of the hazard imposed by climate change involves a risk-based approach to adaptation. NFA should consider the likely impacts of climate change during the design stage. This might involve consideration of adopting heat-reducing strategies and materials in the design and construction of VIC facilities (e.g., light coloured buildings, increasing green spaces, etc.), adopting a conservative approach to design loads to allow for stronger winds and ensuring that all critical infrastructure exceeds current design standards. This will require analysis of the costs and benefits of allowing for the likely effects to determine whether these mitigation strategies should be adopted.

Regardless of the design elements, the VIC must develop a climate change adaptation strategy to consider how it will manage the ongoing impacts of climate change. This will involve strategies to reduce greenhouse gas emissions and may include use of renewable energies, ensuring the use of energy efficient equipment across the site and so on. It is also important that staff and visitors are aware of energy use and steps they can take to reduce consumption.

## **2.2 Animal & Human Health Hazards**

### **2.2.1 Infectious Disease Outbreak**

The term infectious disease is a broad term covering a range of different diseases that can be spread, directly or indirectly, from one person to another. In recent years, the World Health Organization (WHO) has warned of viruses that could potentially mutate and easily transfer from human to human creating a pandemic with significant world-wide consequences. A pandemic is a disease outbreak that occurs worldwide when a new strain of virus emerges to which no-one is immune; the virus causes disease in humans; and the virus is easily spread between humans.

In the absence of immunity, a new virus can rapidly spread across the globe, causing epidemics or pandemics, infecting large numbers of people with fatal results. The risk of an outbreak at the VIC could be perceived as being higher than in the general population as a large majority of the visitors will be accessing the facility. Potential or actual disease outbreaks at the VIC will be managed in the same way as the general population and could potentially involve the isolation and quarantine of people for a period of time to prevent transmission. Additionally, impacts to the business may arise as a result of staff absenteeism due to high levels of sickness. It is proposed that health and medical facilities will be provided at the VIC and if designed appropriately, this may assist with managing the spread of any disease outbreak detected on site.

#### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with infectious diseases, guests and staff should be encouraged to undertake good hand and respiratory hygiene measures at all times and if an outbreak of infectious diseases occurs, affected guests must be isolated and cleaning regimes should increase. The Emergency Management Plan for the site should address prevention, preparation, response and recovery for infectious diseases and emergency management training should be provided for key personnel.



## **2.2.2 Interaction with Wildlife and Vegetation**

Guests and staff members at the VIC may encounter native animals and vegetation. Interactions with native wildlife or vegetation (e.g., photographing wildlife seen on site and/or chance encounters on walking tracks, etc.) in an unsafe manner open the risks for potential injuries or accidents to occur.

### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with guests interacting with native wildlife and/or vegetation, it is essential to provide guest education and information regarding hazards associated with wildlife interactions (e.g., If you encounter a snake, don't panic, back away to a safe distance and allow the snake to move away). Guest education can be in many forms and may include interpretive signage (e.g., be Cass-O-wary), signage with pictures and warnings of stinging trees, lawyer cane (aka wait-a-while), including first aid tips and information. Additional controls and treatment strategies include provision of adequate first aiders and supplies on site including an Automatic External Defibrillator (AED), availability of a General Practitioner (GP) on site to provide medical care to guests as required. Relevant staff must be provided with training on adequate and safe handling of wildlife. It may be appropriate to provide opportunities for humans to interact with fauna in controlled circumstances (e.g., supervised frogging expeditions).

## **2.3 Technological, Abnormal & Health & Safety Hazards**

### **2.3.1 Structural Fires**

A structure fire is a fire involving the structural components of various types of residential, commercial or industrial buildings. A fire incident could not only result in financial losses, they could also severely damage the reputation of NFA.

The main causes of fire at the proposed VIC might occur because of malfunctions in electrical equipment (e.g., electrical distribution systems, motors, electrical heaters and lighting systems); maintenance work such as welding or soldering; carelessness such as negligence in turning off electrical equipment; use of combustible materials and liquids (cleaning, painting, etc.); smoking, cooking, temporary decorations for festivities and functions, etc.

The risk to human lives and property is high at the VIC due to the heavy concentration of people and valuables, and to the combustible interior furnishings and fittings. However, these risks can be reduced by taking appropriate fire protection measures.

### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with structural fires, any critical infrastructure must meet or exceed current design standards and the fire safety technical provisions of the Building Code of Uganda for the design and construction of VIC building; including the use of fire-retardant materials where appropriate. Approved fire alarms, detection, suppression and fire-fighting systems must be designed and installed in collaboration with the Uganda Police Force and regular staff training, fire drills and evacuation exercises must be undertaken and lessons identified implemented.

Additional controls and treatment strategies include: a Closed-Circuit Television (CCTV) system; provision of adequate on-site security personnel during the construction and operations phases to provide a high level of vigilance and a strong security regime; ensuring that combustible materials are stored in accordance with relevant legislation. A Site Emergency Plan and an Emergency Evacuation Procedure needs to be developed identifying adequate Fire Assembly Points for the site and it is vital to ensure accurate records are maintained of guests, staff, contractors and visitors on site. Additionally, a Business Continuity Plan should be developed to ensure that the VIC can continue to deliver critical business

functions in the event of an unplanned disruption as well as ensuring adequate insurance cover if a fire does occur.

#### **2.4 Disruption to Information and Communication Technology (ICT) Services**

Telephone communications (landline and mobile) are relatively good but are prone to failure at critical times. Information and communications technologies (ICT) are at the core of day-to-day operations in thousands of enterprises from every sector, and often this hardware and software is business critical. However, as businesses become more dependent on technology, they need to consider the implications of what will happen to the business if the technology fails. One of the most serious issues for crisis management in the future is society's dependence upon technology.

The Budongo VIC, like many other business / facilities will be heavily reliant upon ICT. This will include phones, internet, television, radios and so on. All forms of electronic communication could be affected during a disruption which may affect one or multiple technologies. It is probable that the problem will not only affect the VIC but may extend to an event with state-wide or possibly national consequences, resulting in a lack of external support capacity.

#### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with ICT failure, it is essential that the VIC considers alternative communications systems that can be used. An emergency alarm and control system with appropriate voice warnings and orders should be provided across the VIC facilities, along with a robust messaging system to cater for all guests (e.g., non-English speaking, etc.).

An Emergency Notification Network should be available to alert and communicate with employees. A private (closed channel) radio network is also recommended. Additionally, NFA should ensure an uninterrupted power supply for ICT infrastructure and implement a range of security measures to ensure networks are protected from cyber-attack.

#### **2.5 Security or Terrorist Related Incident**

"The terrorist threat in the project area is from ADF and M23 rebel groups. The simple nature of attacks from these groups means preparation may not involve activity that is concerning enough to come to the attention of authorities—meaning there is no guarantee of early detection or disruption"

International tourist destinations are alluring targets for attack by terrorists. By their nature, these facilities are "soft targets", attractive because they have operational characteristics (e.g., crowded with people, multiple entrances and exits, lack of security and screening prior to entry, etc.) that can potentially make them vulnerable and easy to exploit, thereby ensuring higher success. around the world, there is evidence that tourism facilities have been the target of such attacks. Terrorist attacks are designed to cause maximum disruption and fear and such attacks can have catastrophic impacts to the wider economy.

#### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with security or terrorist related incidents it is essential to consult with the Uganda Police Force - Terrorism liaison to ensure prevention through environmental design of the VIC. Dynamic risk assessments should be conducted on a regular basis and control measures implemented to manage risks (e.g., if alert level is raised due to internal or external threats/intelligence).

Additional controls and treatment strategies include provision of adequate on-site security personnel with a high level of vigilance and a strong security regime, a Closed-Circuit Television (CCTV) system and availability of a robust alert system that is suitable for all guests

(e.g., non-English speaking, etc.). It is vital that employees are trained on security principles, that plans are available for locking-down the VIC as well as evacuation arrangements and that security measures are maintained, plans and arrangements are exercised and lessons identified implemented.

It is also important to consider cyber security and to establish a robust ICT network and take steps to protect information, computers and networks from cyber-attacks. Back-ups of important business information and data should be undertaken on a regular basis.

## **2.6 Workplace Accident**

Workplace accidents and fatalities may occur at any time during the construction and operations phases of the VIC.

### **Proposed Controls and Mitigation Strategies**

To effectively mitigate the risks associated with workplace accidents, the VIC must adopt a strong positive safety culture throughout all phases of the project. This will include compliance with the Occupational Health and Safety Act 2006, and all other relevant legislation, Codes of Practice and Ugandan Standards. Workplace Health and Safety Policy and Procedures including a Safety Management Plan shall be developed and implemented for the construction and operations phases of the project which will include appointment of Health and Safety Representatives and establishment of a Health and Safety Committee to proactively identify, assess, control, monitor and review work health and safety risks.

All activities conducted on site are to be performed by authorised personnel holding the relevant licenses, certifications and competencies and contractors should be selected on their ability to comply with OHS requirements. Additionally, all contractors will be required to submit Safe Work Method Statements (SWMS), risk assessments for all works and their own Safety Management Plans. A general Construction Induction Card (White Card) shall be required by all personnel working on site during the construction phase and a specific site induction process for all employees, contractors and visitors will be required for both the construction and operations phases of the project.

On site security, signage and other methods of ensuring that no unauthorised access is obtained to the construction site is necessary. This shall include barriers and fencing, CCTV and security lighting, systems to escort visitors and so on. Appropriate Workplace Health and Safety training will be provided to employees and contractors (e.g., working at heights, safety management systems, etc.), effective fitness for work and fatigue management regimes will be implemented and pre-start meetings, toolbox talks and random safety audits will be regularly undertaken.

In terms of mitigating the risks associated with vehicles, proof of registration and insurance is required for all plant operating on site. It is vital that all plant, vehicle and equipment has radio communications and that operators (including contractors) are certified to operate designated plant, vehicle and equipment and that daily inspections are undertaken prior to the commencement of each shift. On and off-site traffic management plans shall be developed and implemented for the construction and operation phases including speed limit restrictions and public notices regarding the timing of works and any likelihood of delays on the road network.

Additional controls and treatment strategies include ensuring that all equipment is maintained and checked on a regular basis and that isolation, tagging and lock-out processes are implemented as required, ensuring that all employees and contractors have appropriate Personal Protective Equipment (PPE) as required, provision of suitable fire-fighting equipment



including various classes of extinguisher for buildings and vehicles, availability of spill kits and training and education for relevant personnel including clean up and incident response and reporting procedures.

It is vital to develop a Site Emergency Plan and a Site Emergency Evacuation Procedure and ensure adequate provision of first aiders and supplies on site including an Automatic External Defibrillator (AED)

The VIC management should investigate and record all incidents, injuries and near misses (regardless of severity) so that lessons identified can be incorporated and ensure that reporting of relevant incidents to the appropriate bodies as required by legislation in a timely manner. In the event of an accident occurring, it will be essential to have insurance including Workers Compensation in accordance with relevant legislation as well as a Business Continuity Plan to minimise the consequent disruption.

### **3.0 Proposed Integrated Emergency Management Arrangements**

#### **3.1 Integrated Emergency Management Framework**

The primary concern of the Budongo - VIC in any emergency will be staff and visitor safety followed by the need to resolve the incident. A key operational element of the VIC response to hazards is an Integrated Emergency Management Framework that comprises a suite of policies, plans and procedures.

An overview of the required policies, plans and procedures that will comprise the Integrated Emergency Management Framework is provided below:

##### **3.1.1 Emergency Management Plan**

An overarching Emergency Management Plan will be needed for both the construction and operations phases of the project. It is important that the plan is based on an all- hazards approach and is flexible and adaptable enough to ensure an integrated, coordinated and timely response to deal with any eventuality.

The overarching Emergency Management Plan for the project will be tailored to the cultural background and demographic of the visitors and will detail the structure, management arrangements and governance provisions which underpin the process. It will detail activities to be undertaken in the preparation phase to facilitate the best use of available resources and provide an overview of the arrangements in place for dealing with any emergency affecting the VIC site. This will involve setting out the role and responsibilities of the management team and key personnel from the initial notification through the various stages of response and recovery.

Whilst it is premature to develop a final Emergency Management Plan at this stage of project planning, the framework of what the Emergency Management Plan should include is provided below:

#### **Section 1: Overview of Emergency Management Plan**

- x Context
- x Aim & Objectives
- x Scope
- x Planning Assumptions
- x Ownership
- x Affected Parties
- x Linkages with other Plans & Documentation

## **Section 2: Activation & Notification Procedures**

- x Define what an emergency is for the VIC
- x Decision criteria / triggers for activating the plan.
- x Levels of activation (e.g., Alert, Lean Forward, Stand Up and Stand Down).
- x Escalation process during the response to emergencies (internal and external).
- x Notification and communication methods throughout the VIC to staff and guests and external to emergency services and the public.

## **Section 3: Roles & Responsibilities**

This section will document the role and responsibilities of all key staff involved in emergency response and recovery operations. This may include the VIC management team, various workgroups and sections, etc. The plan will build on the strengths and capabilities of the various teams involved.

## **Section 4: Concept of Operations - Response & Recovery**

- x Emergency Operations Centre
- x Warnings & Information Dissemination
- x Media Management
- x Financial management
- x Logistics and Resupply
- x Undertaking impact and needs assessment
- x Management of staff in the event of an emergency (given that many will want to defend and protect their own premises)
- x Implementation of evacuation strategy
- x Implementation of shelter in place strategy
- x Reporting arrangements
- x Activation of recovery arrangements and recovery operations (human-social, economic, environmental, built environment)

## **Section 5: Post-Event Procedures**

- x Debriefs
- x Lessons identified
- x Incident reports
- x Review and renew plans
- x Training and exercise schedule

## **Appendices**

- x Contact Lists
- x Resource Lists
- x Plan Distribution List

### **3.1.2 Sub Plans**

The overarching Emergency Management Plan is to be complemented by several functional Sub Plans which are designed to expand on information contained in the generic Emergency Management Plan by providing detailed operational information for the activation and operation of specific functions. Sub Plans are designed to operate on a stand-alone basis or as part of a wider response integrating seamlessly with other plans as required. Some examples of Sub Plans that may be required are identified below:

#### **Media & Communications Sub Plan**

It is vital that the management of the VIC adopt a proactive approach to crisis communications. The aim of the Media and Communications Sub Plan is to document the processes that will be implemented by the VIC for managing the media and for the effective collection, monitoring, management and dissemination of accurate, useful and timely information and warnings to

guests and staff before, during and after crisis events. The plan will also contain information on the communications systems available to support operations e.g. radio system, guest notification system, PA systems and so on.

### **Shelter & Evacuation Sub Plan**

This plan will enable all personnel on site to manage an effective and safe response to any emergency and will provide guidelines for actions to be taken during an incident to minimise potential for loss of life, injury to people and damage to the environment. The plan will contain the shelter-in-place strategy as well as information on when evacuation is required and evacuation routes. The plan will also document the arrangements for managing an on-site Place of Refuge / Evacuation Centre facility.

### **Fire Mitigation Sub Plan**

A coordinated approach to bushfire management is vital. The Bushfire Mitigation Sub Plan will provide detail on the bushfire risks present at the VIC and identify planning and mitigation efforts to reduce the risk of bushfire impacts to prevent loss of life and property.

## **3.2 Other Policies & Procedures**

### **Occupational Health & Safety**

OHS will meet industry best practice standards, relevant codes of practice and statutory provisions including but not necessarily limited to the Work Health and Safety Act. The VIC will need to adopt a strong safety culture that proactively identifies OHS risks, identifies and implements control measures and regularly monitors and reviews the effectiveness of OHS risk management.

### **First Aid**

All site personnel will undergo a mandatory induction which will include first aid training. Selected personnel will be trained in advance resuscitation techniques. First aid stations and emergency response kits will be located at easily accessible and appropriate locations throughout the project site.

### **Fire Fighting**

All site personnel will undergo a mandatory induction which will include simple fire training. All fire-fighting equipment utilised throughout the life of the project will meet Ugandan Standards and all other legislative requirements. Suitably sighted fire-fighting equipment (including fire hose reels, blankets, and hand-held extinguishers) will be fitted to all buildings along with alarms, emergency lighting and exit signage in accordance with relevant Ugandan standards.

## **4.0 Training & Exercises**

The Budongo VIC must ensure that a suitable training program is designed and implemented to maintain knowledge and understanding of employees around risk, emergency and business continuity management. Personnel that have responsibilities under emergency management plans are expected to demonstrate their knowledge, skills and experience and undertake a program of continuous development. Evaluation of all training events is to be undertaken to ensure training is effective and meets the end-user needs. An auditable record of attendance is to be maintained.

Exercises are a key component of emergency management strategies as they allow procedural and functional weaknesses to be identified and mitigated prior to a real event. Exercising can take many forms from simple discussion type exercises to full scale, live

operations and must be undertaken on a regular basis to allow staff an opportunity to practice their roles in a safe and supportive learning environment.

## **Appendix J: Biodiversity Management and Monitoring Plan**

The Biodiversity Management and Monitoring Plan addresses planning, management and/or monitoring activities, over the road construction life cycle, of vegetation and wildlife conservation and protection measures necessary to achieve an appropriate end land-use objective. In order to meet this objective, vegetation and wildlife mitigation and management measures are implemented during Project construction and operation phases.

### **1.1. General approach**

Project planning and design and the application of mitigation measures will be used to avoid or limit environmental effects on vegetation and wildlife. Standard practices and general environmental protection measures for construction projects will address Project-related effects. Environmental effects on terrestrial vegetation will result from vegetation removal in terrestrial habitats. However, following the implementation of mitigation measures described below, the Project will not alter or remove of terrestrial vegetation community type resulting in the loss of long-term viability of that vegetation community type, and will not result in effects on a species listed in the ESMP as threatened or endangered. Mitigation measures for vegetation include those to limit adverse effects on the abundance of vegetation species of interest and overall vegetation communities.

Other potential effects on wildlife include mortality due to site clearing and vehicle collisions, change in wildlife movement due to sensory disturbance and Project components which may act as physical barriers. Mitigation measures for wildlife and wildlife habitat include those to limit adverse effects to wildlife habitat, wildlife mortality risk, wildlife movement, and wildlife health

#### *1.1.1. Vegetation*

The following measures will be implemented to mitigate the direct and indirect effects of the Project on vegetation during all Project phases:

Exclusion of sensitive vegetation from development;

- Marking off (with flagging) sensitive areas to be avoided, daily meetings with site clearing crew to review work plans including areas to be avoided, avoid tire rutting, and limiting the overall Project footprint.
- Mechanical and/or manual vegetation removal practices will be employed when possible.
- Implement erosion and sedimentation control measures;
- Installation of truck wheel washing stations to avoid tracking of mud; and
- Use of dust suppressants (e.g., water) on roadways during situations that have an increased potential to generate airborne dust.

#### *1.1.2. Invasive Species*

Invasive and exotic (non-native) plant species can displace native vegetation. As the Project already hosts invasive and non-native species, mitigation will be focused on reducing or eliminating potential effects on vegetation communities from the spread of these invasive species. This will include:

- using clean, coarse fill material for grading to reduce the potential for introducing or spreading non-native, or invasive plant species
- Selecting native species for revegetation and assess presence of invasive species and target removal through manual and mechanical methods and proper disposal as guided by botanist.

#### *1.1.3. Wildlife*

The following measures will be implemented to mitigate the direct and indirect effects of the Project on wildlife and wildlife habitat during all Project phases:



- Address incidental take of wildlife and nesting sites. Scheduling vegetation clearing and site preparation activities outside the breeding periods is the best way to reduce the risk of incidental take.
- If an active breeding site occurs within 500 m of Project construction or operation activities, develop protection measures.
- Retain actual or potential protected tree species in areas where it is safe to do so.
- Carry out the removal of structures supporting bat roosting and nesting outside of the active nesting season.
- Restrict project vehicles to designated areas and limit off road use by Project personnel.
- Provide wildlife awareness and safety training to Project personnel and contractors
- Maintain the Project site, through proper handling and storage of industrial materials and debris, in a manner that reduces the risk that wildlife will encounter potential hazards.
- Implement road safety measures (e.g., speed limits and signage) to reduce wildlife road mortality at potential wildlife crossings during the construction and operation phases of the Project
- Upon discovery of injured wildlife at the Project site or on Project roads take measures to protect the individual from further harm and do not perform any work in the immediate location of the injured species that would subject it to further harm. Implement required actions (e.g., contact UWA and if feasible assist in the capture and relocation of an injured species to a safe area and/or an appropriate care facility by the qualified person).

## **1.2. Construction**

### **1.2.1. Vegetation**

The following measures will be implemented to mitigate the direct and indirect effects of the Project on vegetation during construction:

- General site clearing activities will be restricted to the construction location/footprint;
- Employing manual vegetation removal practices when possible
- Using dust suppressants (e.g., water) on roadways during situations that have an increased potential to generate airborne dust
- Implementing erosion and sedimentation control measures
- Culverts will be installed at key locations to maintain drainage and limit potential effects down gradient.

### **1.2.2. Wildlife**

The following measures will be implemented to mitigate the direct and indirect effects of the Project on wildlife and wildlife habitat during construction:

- Providing opportunities for canopy sustenance for arboreal wildlife communities
- Implement mitigation for the potential effects from lighting on wildlife habitat including:
  - Avoid night activities within the Park
  - Where night construction and presence of camps inside the Park is permitted;
  - Construction lighting will be specified to use only as much lighting as is necessary for safe and efficient construction activities
  - Use down-lighting, a technique of directing night lighting downward, to reduce potential light effects on wildlife
- Prior to construction, flag environmentally sensitive areas adjacent to work areas (e.g., key habitat features such as water ponds, roosts, wallows, hibernacula) prior to clearing and construction, and evaluate the features for additional mitigation measures (e.g., timing windows and/or setbacks)

- To the extent feasible, recover and relocate tortoises and amphibians encountered during project activities. These can be handled with support from UWA personnel or professional wildlife handlers.

### **1.3. Operation**

#### *1.3.1. Vegetation*

The following measures will be implemented to mitigate the direct and indirect effects of the Project on vegetation during operation:

- Use of dust collection/control systems to reduce potential dust emissions during activities; and
- Enclosure of dust sources where applicable.
- Applying water sprays, chemical suppression, and application, to control fugitive dust emission from road ways
- Using dust suppressants (e.g., water) on roadways during situations that have an increased potential to generate airborne dust
- Implementation of a progressive reclamation program for facilities as possible in Project planning as per the Closure Plan incorporating plant species of interest where appropriate and technically feasible

#### *1.3.2. Wildlife*

The following measures will be implemented to mitigate the direct and indirect effects of the Project on wildlife and wildlife habitat during operation:

- Implement road safety measures (e.g., speed limits and signage) and yield the right of way to wildlife on Project roads
- Where project site roads occur through forest, savannah or wetland communities, a regular vegetation cutting regime will occur along the edges of project site roads both to increase driver visibility and to reduce the attractiveness of the area for animal browse.
- Implementation of a progressive reclamation program for facilities as possible in Project planning as per the Closure Plan

### **1.4. Closure**

The following measures will be implemented to mitigate the direct and indirect effects of the Project on wildlife and wildlife habitat during closure:

- The potential for closure activities to contravene the ESIA will be evaluated prior to closure and closure activities will either be conducted in ways to avoid adverse effects on habitat, or if that is not possible, contractors work with UWA in the Park to obtain required authorizations.

### **1.5. Pilot revegetation studies**

Rehabilitation studies that may occur during operation as part of progressive rehabilitation activities are outlined in the Closure Plan

#### *1.5.1. Revegetation*

The objectives of the revegetation program are to stabilize surface materials from wind and water erosion, improve aesthetics, and establish self-sustainable vegetation growth. Specifically, the goals of the revegetation program will be:

The surface will be revegetated, primarily with grasses through savannah, trees through forest as appropriate vegetation in each site.

- Disturbed ground in other areas will be revegetated based on the local eco-site but should allow for the establishment of adjacent vegetation communities to reclaim these areas.

- The borrow source areas will be revegetated in accordance with the Restoration Management Plan and Practices.

Revegetation will occur as needed to promote erosion protection and as soon as practical after Project components are no longer actively used. Prior to revegetation, the ground surface will be prepared through scarification or ripping of compact surfaces, contouring the ground surface, placing overburden, adding soil amendments to support vegetative growth, and implementing erosion protection measures to protect the soil cover until vegetation is established.

## MONITORING, EVALUATION AND REPORTING

### 2.1. Monitoring, Measurement, Analysis and Evaluation

The purpose is to evaluate and document performance objectives. As such, monitoring is expected to fulfil the following objectives:

- Tracking of the Project footprint throughout construction and operation
- Monitoring of the limits of clearances. A visual examination will be conducted to ensure limits are clearly marked and that the clearing works stay within demarcated areas.
- Spatial mapping of the actual Project footprint using GIS with comparison to plan.
- Tracking of species of conservation concern, and the subsequent mitigations proposed for interventions during the construction phase and restorations.
- Assess presence of invasive species and target their removal through manual and mechanical methods and proper disposal.

#### 2.1.1. Vegetation

In order to confirm the effectiveness of mitigation and to verify the conclusions of the ESIA for vegetation and wetlands, a Monitoring Program will be conducted to assess potential disturbance to vegetation during construction and operation, and will include:

- Project footprint tracking through construction and operation:
- Monitoring of the limits of clearing will occur. A visual examination will occur to ensure limits are clearly marked and that the clearing works stay within demarcated areas.
- Spatial mapping of the actual Project footprint using GIS with comparison to plan.
- Assess presence of invasive species and target removal through manual and mechanical methods and proper disposal.

Verification of wetland effects:

- Programs to monitor surface water and groundwater during operation of the site will be undertaken (detailed in Water Management and Monitoring Plan). This program will confirm predicted effects of the Project with respect to ground and surface water quality, changes in drainage patterns and surface water flow.
- If this program indicates additional mitigation measures are required for water management as part of adaptive management, monitoring of the vegetation communities within the Project development area may be implemented to determine indirect effects during construction and operation phases due to: groundwater drawdown and/or changes in surface water. This program would focus on the protected area and may include an assessment of vegetation composition, wildlife use, eco-site type, and surface water and hydrogeology.

Monitoring to determine the success and stability of the areas that are rehabilitated will also be conducted.

#### 2.1.2. Wildlife and wildlife habitat

In order to confirm the effectiveness of mitigation and to verify the conclusions of the ESIA on wildlife, monitoring will be conducted to assess potential effects to wildlife and wildlife habitat, and will include:

- Recording Project-related wildlife-vehicle collisions or near misses:
  - Drivers of Project-related vehicles will be encouraged to report wildlife-vehicle collisions, near misses or observations of a wildlife road mortality including details such as the circumstances of collision (date, time, road conditions, lighting, weather); characteristics of the animal(s) struck by the vehicle (species, number, injury severity); and location (detailed description of the location of incident, the surrounding habitat, UTM if possible).
- Maintaining a wildlife observation log for the Project and associated infrastructure (e.g., access roads):
  - Project personnel and contractors will be encouraged to report sightings of wildlife on and around the Project during construction and operation. In particular, discovery of occupied habitat features (e.g., active dens, wallows) for direction on follow-up actions.
  - Project personnel and contractors working in active zones to relay wildlife sightings to other workers as soon as possible (e.g., elephant family presence)
  - Project personnel and contractors to report wildlife incidents and encounters related to garbage or other attractants so that corrective action can be initiated
  - Report occurrences at the Project site to the UWA and where applicable to NFA management
- Monitoring wildlife use of the open aquatic areas and other key Project locations in vicinity:
  - During operation, use of open aquatic areas associated with the Project such as the tailings management pond and collection ponds will be monitored for use by wildlife, with an emphasis on waterfowl and large mammals such as elephants, hippopotamus.
  - Through consultation with chimpanzee guides in the project areas, monitor chimpanzee crossing points and time of crossing.
- Monitoring wildlife use:
  - Wildlife use surveys will include periodic monitoring of breeding sites where they exist in the vicinity. Post-construction monitoring follows the same protocols as baseline surveys, so that data will be comparable. Surveys to assess breeding bird populations during the life of the project will be conducted following the methods used during the baseline field data collection program and in accordance with the ESIA which recommends monitoring to take place at given intervals following the same protocols as baseline surveys. Although surveys will target breeding sites, wildlife (or signs of wildlife such as tracks etc.) observed during surveys will be recorded.

## **2.2. Reporting**

The form and frequency of follow-up reporting will be determined as the Project progresses through ESIA and permitting, however, it is anticipated that those elements relevant to the Biodiversity Management and Monitoring will be assembled into a formal summary report and provided to interested parties on an agreed basis during construction and operation and during closure in the time when monitoring is carried out. The reporting will be used to inform adaptive management reviews. Receiving, documenting and responding to communication from external interested parties, including complaints, will also form part of reporting.

## **2.3. Continuous improvement**

Adaptive management is a planned and systematic process for continuously improving environmental management practices by learning from their outcomes. Adaptive management provides the flexibility to address/accommodate new circumstances, to adjust monitoring, implement new mitigation measures or modify existing measures. Contractor should identify and correct incidents with appropriate and lasting measures aimed to prevent reoccurrence

and/or similar occurrences. The Adaptive Management Framework should provide a formalized approach to:

- formally track and monitor activities;
- report and as needed investigate incidents, including non-conformance and noncompliance events;
- develop and implement corrective and preventive actions; and
- continue monitoring and update relevant documents.

Corrective actions will be assigned as appropriate, including actions to prevent their reoccurrence. Corrective actions will vary according to the results of incident investigation and in consideration of other incidents related to biodiversity. The contractor should be committed to the continual improvement of its environmental management and performance. As part of the contractor's Adaptive Management Framework, the Biodiversity Management and Monitoring will be assessed periodically to verify implementation and the continued suitability, adequacy and effectiveness of the Plan. The review will identify elements in need of revision and evaluate performance against established performance objectives.

## ENVIRONMENT AND SOCIAL MANAGEMENT AND MONITORING PLAN

| LOSS OF COVER AND HABITAT MANAGEMENT |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                          |                                                           |                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|------------------------|
| <b>Objective(s)</b>                  | <ol style="list-style-type: none"> <li>1. To prevent the degradation or destruction of water bodies or water courses in accordance with the National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations</li> <li>2. To ensure that no waste is dumped into the forest ecosystems and protected areas.</li> <li>3. To ensure that all critical features are avoided during the construction phase</li> <li>4. Ensure that there is no Right of Way and limit forest clearing to the operational area as much as possible</li> </ol>                                                                                                                                                                                                                                                                                                 |                                          |                                                           |                        |
| <b>Management Strategy</b>           | The no loss of habitat will be maintained throughout construct phases, through design, compliance, rehabilitation and sensitization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                           |                        |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Responsibility                           |                                                           | Timing                 |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Implementation                           | Monitoring/ Checking                                      |                        |
| <b>Actions/Control(s)</b>            | <ol style="list-style-type: none"> <li>i. Final design for the project will adequately address considerations of the avoidance protocol.</li> <li>ii. Design will accommodate streams and flood plains to minimise risks e.g. adequate culverts where applicable</li> <li>iii. Marking boundary of construction area to ensure that the Contractor avoids additional and unnecessary vegetation clearance.</li> <li>iv. Restricting the removal of vegetation and soil cover to only those areas required</li> <li>v. Disturbed areas will be rehabilitated within three months of work completion.</li> <li>vi. Indigenous trees and cover grass will be planted along the roads for upgrade, to replace the lost vegetation as a result of Project Implementation.</li> <li>vii. Company shall strive to achieve "Net Gain" in biodiversity</li> </ol> | Contractor<br><br>Civil Works contractor | Phase progress<br>Quality checking by the Project manager | Throughout the project |



| LOSS OF COVER AND HABITAT MANAGEMENT |                                                                                                    |                                             |                               |            |
|--------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------|------------|
|                                      | viii. Sensitizing workers about Park and Forest Reserve rules and regulations                      |                                             |                               |            |
| <b>Performance Indicator(s)</b>      | No complaints from lead agencies, tourism stakeholders and adjacent community on ecosystem changes | Civil Works / Environment Field Officer-EFO | District Environment Officers | Throughout |
| <b>Monitoring</b>                    | Regular site progress reports                                                                      | Civil Works / EFO                           | Project Engineer              | Throughout |
| <b>Reporting</b>                     | Any complaints or incidents to be reported to Site Civil Engineer.                                 | All                                         | Project Engineer              | Throughout |
| <b>Corrective Action(s)</b>          | Implement corrective measures prior to the recommencement of site works                            | Civil Works / EFO                           | Project Engineer              | Throughout |

| MANAGEMENT OF DISTURBANCE OF FAUNA DUE TO PROJECT TRAFFIC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |                                                        |                        |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------|------------------------|
| <b>Objective(s)</b>                                       | 1. To ensure that effects on flora and fauna are identified and where possible avoided, minimised or reduced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                                        |                        |
| <b>Management Strategy</b>                                | The no loss of habitat will be maintained throughout construct phases through design, compliance, rehabilitation and sensitization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |                                                        |                        |
|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Responsibility                      |                                                        | Timing                 |
|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation                      | Monitoring/ Checking                                   |                        |
| <b>Actions/Control(s)</b>                                 | i. Provision of temporary road signage during construction and ensure drivers observe speed limits.<br>ii. Deployment of traffic guides and warning signs where necessary<br>iii. Provision of temporary and permanent speed reducing measures such as humps.<br>iv. Prohibition of haulage and other activities at night to avoid further accidents.<br>v. Maintain speed limits of 40 km/hr for light trucks and 25 km/hr for heavy trucks transporting material, particularly along roads in the project area<br>vi. Cover material delivery trucks with tarpaulin to minimize the risk of loose material creating a dusty environment during transit.<br>vii. Measures to reduce noise from machinery, equipment and vehicles such as: <ul style="list-style-type: none"> <li>• Selection of low-noise rated machinery and generators for use on the Project.</li> <li>• Switching off machinery and vehicles when not in use.</li> <li>• Regular maintenance of machinery, equipment and vehicles to ensure that they</li> </ul> | Contractor<br><br>Civil Works / EFO | Phase progress Quality checking by the Project manager | Throughout the project |

| MANAGEMENT OF DISTURBANCE OF FAUNA DUE TO PROJECT TRAFFIC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                               |            |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------|------------|
|                                                           | <p>are in good working condition.</p> <ul style="list-style-type: none"> <li>Noise abatement of equipment, for example by use of mufflers, or noise barriers during working hours.</li> </ul> <p>viii. Work will be done during daytime only in the project area</p> <p>ix. Avoidance of breeding or migration seasons for birds, like Jan-Feb</p> <p>x. Undertaking noise monitoring at working sites and impact on receptors</p> <p>xi. Stick to and respect the proposed team sizes per site to avoid an overburden and extended disturbance to wildlife in their natural environment</p> <p>xii. Operations undertaken during the dry season shall take care of and reduce activity during peak animal watering periods (11-12pm) when there are massive animal movements to water bodies.</p> <p>xiii. Avoid meandering outside operation site to reduce human-animal interaction and interruption of wildlife activity</p> <p>xiv. Busy fauna crossing points or known wildlife corridors shall be shared among teams and given due consideration</p> <p>xv. Safe distances from wildlife be operationalised and popularised among machine operators and be part of the toolbox meetings</p> |                   |                               |            |
| <b>Performance Indicator(s)</b>                           | No complaints from lead agencies, respective stakeholders and adjacent community on ecosystem changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Civil Works / EFO | District Environment Officers | Throughout |
| <b>Monitoring</b>                                         | Regular site progress reports                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Civil Works / EFO | Project Engineer              | Throughout |
| <b>Reporting</b>                                          | Any complaints or incidents to be reported to Site Civil Engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | All               | Project Engineer              | Throughout |
| <b>Corrective Action(s)</b>                               | Implement corrective measures prior to the recommencement of site works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Civil Works / EFO | Project Engineer              | Throughout |

| MANAGEMENT OF SOIL EROSION |                                                                                                                                                                                                                                                       |                       |                             |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|
| <b>Objective(s)</b>        | <ol style="list-style-type: none"> <li>To prevent and/or control erosion and damage from steep slopes where they exist</li> <li>To minimise effects of soil degradation from erosion and sedimentation control systems during construction</li> </ol> |                       |                             |
| <b>Management Strategy</b> | The impacts from erosion will be dealt with throughout construct phases through design, minimizing exposure, sensitization and revegetation / restoration.                                                                                            |                       |                             |
|                            |                                                                                                                                                                                                                                                       | <b>Responsibility</b> | <b>Timing</b>               |
|                            |                                                                                                                                                                                                                                                       | <b>Implementation</b> | <b>Monitoring/ Checking</b> |

| MANAGEMENT OF SOIL EROSION |       |                                                                                                                                                                                                                             |       |                 |                        |
|----------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------|------------------------|
| Actions/Control(s)         |       | Site Engineer                                                                                                                                                                                                               | Civil | Project Manager | Throughout the project |
|                            | i.    | Adequate drainage considerations to be made during design.                                                                                                                                                                  |       |                 |                        |
|                            | ii.   | Appropriate engineering designs and standards such as Design Manuals shall be adopted to maintain appropriate diameters, openings and strength of the hydraulic structures.                                                 |       |                 |                        |
|                            | iii.  | Incorporation of erosion protection measures e.g. scour checks, silt traps, lining of drains and stepped drains in areas of steep gradient, vegetation cover, slope protection                                              |       |                 |                        |
|                            | iv.   | Terracing will be used to reduce exposure along slopes, depending on the site terrain. Other measures such as use of gabions, stone pitching and interlocking blocks should be considered depending on the site terrain.    |       |                 |                        |
|                            | v.    | Works should be phased to prevent areas from being exposed over a long duration                                                                                                                                             |       |                 |                        |
|                            | vi.   | The removal of vegetation and soil cover will be restricted to only those areas necessary for the project.                                                                                                                  |       |                 |                        |
|                            | vii.  | Soil conservation measures will be implemented such as stockpiling topsoil or gravel for the remediation of disturbed areas. Stockpiles meant for restoration purposes will be vegetated to minimize risk of soil erosion.  |       |                 |                        |
|                            | viii. | Disturbed areas will be restored within three months of work completion to prevent erosion.                                                                                                                                 |       |                 |                        |
|                            | ix.   | For civil works undertaken during rainy periods, silt traps and interceptor drains shall be provided on site; where necessary, alternative drainage shall be created to avoid localized floods;                             |       |                 |                        |
|                            | x.    | Vegetation cover should be provided whenever practicable to minimise erosion.                                                                                                                                               |       |                 |                        |
|                            | xi.   | Indigenous trees and cover grass should be planted, to increase on the adhesion and cohesion forces of the soil particles, reduce the speed of the running water and act as wind breaks, particularly along exposed slopes. |       |                 |                        |
|                            | xii.  | Replanting shall be undertaken during rainy season to ensure high re-vegetation success or restoration should be enhanced during the dry season.                                                                            |       |                 |                        |

| MANAGEMENT OF SOIL EROSION      |                                                                                                                                                                                                                                                                                 |                   |       |                              |            |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------|------------------------------|------------|
|                                 | xiii. Sensitizing drivers, emphasizing the need to stick to designated routes and speed limits<br>xiv. Restricting the removal of vegetation and soil cover to only those areas required for the project<br>xv. Trees and other woody vegetation will be maintained to the dot. |                   |       |                              |            |
| <b>Performance Indicator(s)</b> | No complaints from stakeholders on erosion related issues                                                                                                                                                                                                                       | Site Engineer     | Civil | District Environment Officer | Throughout |
| <b>Monitoring</b>               | Regular stakeholder meetings and reporting                                                                                                                                                                                                                                      | Site Engineer     | Civil | Project Engineer             | Throughout |
| <b>Reporting</b>                | Any complaints or incidents to be reported to Human Resource Officer                                                                                                                                                                                                            | All               |       | Project Engineer             | Throughout |
| <b>Corrective Action(s)</b>     | Implement corrective measures prior to the recommencement of site works                                                                                                                                                                                                         | Civil Works / EFO |       | Project Engineer             | Throughout |

| MANAGEMENT OF SOIL COMPACTION   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                      |                              |                        |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------|------------------------------|------------------------|
| <b>Objective(s)</b>             | 1. To minimise effects of soil degradation from erosion and sedimentation control systems during construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                      |                              |                        |
| <b>Management Strategy</b>      | The impacts from soil compaction will be dealt with throughout construct phases through design, minimizing exposure, sensitization and revegetation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                      |                              |                        |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Responsibility |                      | Timing                       |                        |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Implementation | Monitoring/ Checking |                              |                        |
| <b>Actions/Control(s)</b>       | i. Scarification after compaction will be done to avoid long term compaction of the affected areas.<br>ii. Equipment and vehicles will be restricted to the Project footprint. This will minimize the compaction of soil in areas outside of the direct Project footprint.<br>iii. Restoration of affected areas by planting indigenous plants and grasses after project phase is completed.<br>iv. Locating material sourcing sites as close to the Project area as possible in order to minimize haulage distances.<br>xvi. Sensitization of drivers, emphasizing the need to stick to designated routes, and avoid making wide turns at the edges of the site, as far as reasonably practicable | Site Engineer  | Civil                | Project Manager              | Throughout the project |
| <b>Performance Indicator(s)</b> | No complaints from lead agencies and other stakeholders on compaction related issues                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Site Engineer  | Civil                | District Environment Officer | Throughout             |
| <b>Monitoring</b>               | Regular stakeholder meetings and reporting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Site Engineer  | Civil                | Project Engineer             | Throughout             |
| <b>Reporting</b>                | Any complaints or incidents to be reported to Site Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | All            |                      | Project Engineer             | Throughout             |

| MANAGEMENT OF SOIL COMPACTION |                                                                         |                           |                  |            |
|-------------------------------|-------------------------------------------------------------------------|---------------------------|------------------|------------|
| <b>Corrective Action(s)</b>   | Implement corrective measures prior to the recommencement of site works | Civil Works<br>RSED / EFO | Project Engineer | Throughout |

| MANAGEMENT OF NOISE AND VIBRATION |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                     |                              |                        |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------|------------------------|
| <b>Objective(s)</b>               | 1. To minimize noise and not to inconvenience the local communities and wildlife adjacent to sites<br>2. To comply with the National Environment (Noise Standards and Control) Regulations, S.I. No 30/2003, ensure that all equipment to be used during the construction phase of the project are compliant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                     |                              |                        |
| <b>Management Strategy</b>        | The impacts from noise and vibration will be dealt with throughout construct phases through equipment inspection, servicing, use of barriers and sensitization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                     |                              |                        |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Responsibility                                      |                              | Timing                 |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Implementation                                      | Monitoring/ Checking         |                        |
| <b>Actions/Control(s)</b>         | i. Measures to reduce noise from machinery, equipment and vehicles such as: Selection of low-noise rated machinery and generators for use on the Project; Switching off machinery and vehicles when not in use; Regular maintenance of machinery, equipment and vehicles to ensure that they are in good working condition; Noise abatement of equipment, for example by use of mufflers, or noise barriers during working hours<br>ii. Work will be done during daytime only<br>iii. As far as possible, materials will be sourced close to the Project site to reduce haulage distances, and therefore the exposure to noise from traffic.<br>iv. Should noise complaints be received, noise monitoring will be undertaken as per grievance management plan<br>v. Information to stakeholders regarding timing of the Project will be provided regularly, particularly when noise and vibrations are expected to be generated during Project implementation | Civil Works / EFO / Community Liaison Officer - CLO | Project Manager              | Throughout the project |
| <b>Performance Indicator(s)</b>   | No complaints from lead agencies and other stakeholders on negative impacts from noise and vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Site Civil Engineer                                 | District Environment Officer | Throughout             |
| <b>Monitoring</b>                 | Regular stakeholder meetings and reporting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Site Civil Engineer                                 | Project Engineer             | Throughout             |
| <b>Reporting</b>                  | Any complaints or incidents to be reported to Site Engineer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | All                                                 | Project Engineer             | Throughout             |
| <b>Corrective Action(s)</b>       | Implement corrective measures prior to the recommencement of site works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Civil Works / EFO                                   | Project Engineer             | Throughout             |



## Appendix K: Chance Finds Procedure

### 1. DEFINITIONS AND ABBREVIATIONS

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CM                         | Contractor Manager.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| LC                         | Local council                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| UWA                        | Uganda Wildlife Authority                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NFA                        | National Forestry Authority                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| WB                         | World Bank                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Cultural Heritage Property | Movable or immovable objects, sites, structures, groups of structures and unusual natural features and landscapes that have archaeological, paleontological, historical, architectural, religious ,aesthetic or other cultural significance .Physical cultural resources may be located in urban or rural settings and may be above or below the ground or under water. Their cultural interest may be at the local ,provincial or national level or within the international community. |

### 2. PURPOSE

The purpose of this procedure is to ensure the protection of underground cultural heritage property within the project area including potential archaeological finds discovered during infrastructure development of the Visitor Information Centres in protected Areas project.

### 3. POLICY FRAMEWORK

| No | Title                                                      |
|----|------------------------------------------------------------|
| 1. | The Museums and Monuments Act, 2023                        |
| 2  | The Uganda National Culture Policy 2006.                   |
| 3  | WB Operational Manual –OP4.11 Physical Cultural Resources. |
| 4  | IFC Performance Standard 8 Cultural Heritage.              |
| 5  | The Uganda Constitution                                    |

### 4. ROLES AND RESPONSIBILITY.

The proponent's staff and contractor personnel operating within the Visitor Information Centres are responsible for the application of this procedure.

#### a) The proponent

The proponent guarantees the availability of the economic, human and technical resources needed to ensure that cultural property resources are preserved and protected. The proponent is undertaking the development of infrastructure of the Visitor Information Centers for the sustainable management of forested protected areas in Uganda.

#### b) Contractor Firm.

It is the responsibility of the manager of the company contracted to construct the project infrastructure to ensure, all discovered cultural heritage property is preserved.

#### c) Contractor Supervisors.

The supervisors are the competent persons acting for the Contractor Firm. They are the technicians who supervise the digging and surface clearance by machinery. They must report to the Contractor Manager (CM) any discovered archaeological finds.

#### d) Foremen

These report to the supervisors and lead the workers in carrying out their duties.

#### e) Workers

These carry out the tasks as directed by their foremen.

## **5. ARCHAEOLOGICAL ARTEFACTS AND CULTURAL CHANCE FINDS**

During the period of the construction of the project infrastructure which involves excavations and digging, it is possible that chance finds will be encountered. These may include the following:

- Archaeological heritage which has remained unnoticed in the past.
- An encounter with a grave containing human remains which the local residents may have not mentioned at the survey stage.

In order to avoid potential damage to cultural property discovered during construction, the following will apply:

- i) Workers must be vigilant to any relics found during excavation. In case of a discovery during the excavation, workers must report the findings to the foreman.
- ii) The Foreman must stop immediately the work and communicate the findings to the Supervisor.
- iii) The supervisor then communicates the findings to the Contractor Manager.
- iv) The contractor Manager then notifies the proponent
- v) Any further excavations or continuation of the infrastructure development at the Site of the discovered heritage will be undertaken only with the approval of the Uganda government competent authorities.

The project activities will then continue after the following have taken place:

In the case of archaeological artefacts discovery, the proponent

- Will inform the Uganda Museum and grant a period where specialists from the Department of Museums and Monuments excavate and curate the artefacts professionally.
- In the case of discovered human remains the police will have to be notified and either the remains are taken for forensic investigation or the LC1 authorities sanction the reburial of the remains at another location. As per norm, the contractor then meets the relocation and reburial expenses.

**Appendix L: Cultural Heritage Management Plan (CHMP)**

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**Cultural Heritage Management Plan (CHMP) for the Proposed  
Budongo Visitor Information Centre**

**February, 2023**

## 1.0 INTRODUCTION

The development of the Cultural Heritage Management Plan (CHMP) is to protect valuable forms of cultural heritage during all phases of project development. The CHMP also seeks to promote the enhancement of the representation and preservation of various cultural heritage components as part of the VIC.

The rationale for the development of the plan is in consideration of the impacts the project is likely to have on the local cultural heritage within the project area. This is considering the project is:

- Designed to support the conservation, management, promotion and use of cultural heritage
- Located within a legally protected area (World Heritage Site)
- Located within a recognized cultural heritage site (World Heritage Site)
- Will involve excavations, movement of earth and minor changes to the physical environment

## 2.0 LEGAL

This section summarizes the legislative requirements related to the preservation of cultural heritage.

The Government of Uganda has instituted several laws, policies and bodies to protect both tangible and intangible cultural heritage. Objective XXIV of the Constitution of Uganda stipulates that “*The State shall – promote and preserve those cultural values and practices which enhance the dignity and well-being of Ugandans*”. This includes the protection of both tangible and intangible forms of cultural heritage.

The most relevant and significant policies, laws, regulations and institutions for Uganda that apply to the CHMP are summarized in box 2.1.

### **Policy framework**

National Youth Policy (2018).  
The Uganda Gender Policy (2016)  
The Community Development Policy (2016)  
The National Museum and Monuments Policy, (2015)  
National Ethical Values Policy (2013)  
The Equal Opportunities Policy (2006)

### **Legal framework**

Museum and Monuments Act, 2023  
National Environment Act and Regulations thereunder;  
The Uganda Communications Commission Act (2013);  
The Female Genital Mutilation Act and Regulations (2013),  
The Complimentary Alternative Medicine Bill (2019);  
The Institution of Traditional or Cultural Leaders Act (2011);  
The Sexual Harassment Regulations (2012),  
The Prevention of Trafficking in Persons Act (2009);  
The Children’s Act (Cap 59);  
The Penal Code Act, (Cap 120);  
The Local Government Act;  
The Employment Act (2006).

### **International Laws**

Convention on the Protection of the World Cultural and Natural Heritage (1972).  
Universal Declaration of Human Rights (1948)

UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, 17 October 2003, Paris, ratified by the Lao government on 26 November 2009

Convention on the Safeguarding of the Intangible Cultural Heritage (2003)

World Bank Environmental and Social Framework (ESS 1,6,7,8,10)

UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 16 November 1972, Paris, ratified by the Lao government on 9 December 1995

### **Institutional framework**

Ministry of Gender, Labour and Social Development (MoGLSD)

Ministry of Education and Sports (MoES)

Ministry of Tourism, Wildlife and Antiquities (MTWA)

Ministry of Tourism, Trade and Industry (MTTI)

Ministry of Water and Environment (MoWE)

Ministry of Justice and Constitutional Affairs (MoJCA)

Ministry of Foreign Affairs (MoFA)

Ministry of Energy and Mineral Development (MoEMD)

Ministry of Health (MoH)

Ministry of Finance, Planning and Economic Development (MFPED)

Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)

Ministry of Local Government (MoLG)

Ministry of Internal Affairs (MoIA)

The Department of Museums and Monuments (DMM)

Uganda Tourism Board (UTB)

The Uganda National Cultural Centre (UNCC)

The National Library of Uganda (NLU)

The National Planning Authority (NPA)

### **International organizations**

United Nations Educational, Scientific and Cultural Organization (UNESCO)

Uganda National Commission for UNESCO (UNATCOM)



### **3.0 CULTURAL HERITAGE BACKGROUND**

The proposed VIC has been designed to enhance the potential of locally and internationally recognized forms of cultural heritage within the protected areas for the benefit of the local communities and the tourism sector at large.

#### **3.1 Tangible Cultural Heritage (built, or archaeological sensitivity)**

Tangible cultural heritage, which includes movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.

Findings from the site inspection and consultative meetings with the relevant stakeholders, no forms of tangible cultural heritage were present within the project's direct area of influence. A chance finds procedure shall be put in place for the incidental discovery of any forms of tangible cultural heritage, including artefacts, burial sites, built structures among others.

#### **3.2 Intangible Cultural Heritage**

Intangible cultural heritage, which includes practices, representations, expressions, knowledge, skills, instruments, objects, artefacts and cultural spaces associated therewith — that communities and groups recognize as part of their cultural heritage, as transmitted from generation to generation and constantly recreated by them in response to their environment, their interaction with nature and their history.

The local cultural groups, their practices and norms have been recognized by the ESIA; appropriate enhancement and mitigation measures have been recommended to allow for harmonious co-existence and collaboration between the VIC and the local cultural groups.

## 4.0 STAKEHOLDER CONSULTATIONS

Consultations were conducted with various stakeholders to

- Aid in the identification of the cultural heritage that is known to exist or is likely to be encountered during the project life cycle.
- Determine the significance of the cultural heritage that may be affected by the project
- Assess the potential risks and impacts; and
- Explore avoidance and mitigation options.

Stakeholder consultation was conducted with:

1. Regulatory authorities that are entrusted with the protection of cultural heritage
  - Department of Museums and Monuments (MTWA)
  - Directorate of Family and Cultural Affairs (MGLSD)
2. Local communities and historians

The proponent will continuously support and engage with the relevant stakeholders to establish the most effective means for addressing the views and concerns of the stakeholders and involving them in the protection and management of the cultural heritage.

Consultative meetings were held with the Department of Museum and Monuments - Ministry of Tourism, Wildlife and Antiquities (MTWA) and the Department of Family and Cultural Affairs – Ministry of Gender, Labour and Social Development.

| <b>Agency: Department of Museum and Monuments - Ministry of Tourism, Wildlife and Antiquities (MTWA)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issues:</b>                                                                                           | <b>Aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Heritage Impact Assessments</i>                                                                       | <p>Negative impacts on local people occur (e.g. commodification of culture, disruption of traditional life, crime, overcrowding, displacement of local communities to accommodate tourism development, loss of access to traditional resources, damage or desecration of sacred places, pressures caused by high levels of visitation); high cost of living and inflation results from tourism. These all need to be addressed and mitigated during project development and implementation.</p> <p>The significance of heritage sites and artefacts is determined by aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential.</p>                                                                                                                                                                                                                                                      |
| <i>Chance Finds</i>                                                                                      | <p>There is a given procedure followed under guidance from the Department of Museums and Monuments for handling chance finds.</p> <p>Host communities within the respective areas are sensitized about the cultural heritage (immovable) and then a management plan is developed by a consultant together with the concerned communities. The consultant draws up a masterplan for further development of the site.</p> <p>The cultural heritage management plan provides guidelines on future operations of the identified site. It ensures that each CHS area has a defined direction for resource preservation and visitor use.</p> <p>Currently, DMM has developed 15 management plans out of the 650 sites in its database.</p> <p>Following chance finds, government engages / sensitizes the host communities who are custodians to these cultural heritage sites in order for them to protect, conserve and benefit from the opportunities presented by presence of the site within their localities.</p> |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | All cultural heritage belongs to the communities. However, management and protection of these sites is the role of government (through the department) to conserve and sustain.                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Recommendations</i> | <p>If construction takes place and archaeological sites are exposed, it should immediately be reported to the department of museums and monuments so that an investigation and evaluation of the finds can be made by the archaeologists.</p> <p>The ESIA should recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.</p> <p>For the construction phase, project development should commit to: avoid disturbing sites of heritage importance; and avoid disturbing burial sites.</p> |

| <b>Agency: Ministry of Gender, Labour and Social Development (Department of Culture and Family Affairs)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issues:</b>                                                                                              | <b>Aspects discussed are presented below:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Conservation of Culture                                                                                     | <ul style="list-style-type: none"> <li>• The department conserves the cultural values and heritages through encouraging the traditional institutions to protect and preserve the culture.</li> <li>• The cultural sites are divided into two depending on the agencies who take the upper hand in conserving and preserving the heritage</li> <li>• The formal/national cultural sites are monitored by different ministries which include Ministry of Tourism which takes lead in the documentation and archiving all the necessary information about the sites, Ministry of Trade Industry and Cooperatives whose mandate is on exporting and importing of the cultural tangible and intangible heritage, the Parliament that sets the laws that guide on the conservation and preservation of culture.</li> <li>• The informal cultural sites on the other hand are majorly monitored by the traditional institutions and the local leaders. This mainly points at sites that the community take as ancestral source of belief.</li> <li>• The government involves the local leaders through discussion to identify any new cultural sites as well as creating awareness to the community about the need to preserve the culture. The planning and management process is done with the involvement of the local community mainly because there are immovable sites that are effective to the revenue of the country.</li> <li>• The preservation and conservation of the cultural heritage is mostly done through awareness creation, documentation of all cultural information as well as preservation of other requirements that contribute to the intangible cultural heritage for example, the government encouraged the district to make laws to preserve the Sheer butter tree that is used during the male cleansing ceremony among the Langi. This aids the continuity of the cultural practice.</li> <li>• There are various staff and community training that help in the preservation and conservation of the cultural heritage. The department submits a report every after four years indicating the training sessions conducted.</li> </ul> |
| Intangible elements                                                                                         | <p>The government supports the promotion of the intangible cultural heritage through the Ministry of Gender, Labour and Social Development by documentation and funding.</p> <p>The five intangible elements that are recognised by UNESCO include;</p> <ul style="list-style-type: none"> <li>• Bark cloth making;</li> <li>• Male cleansing ceremony in Lango</li> <li>• The Madi bola in Moyo</li> <li>• The Mpaako naming in Tooro</li> <li>• Bigwala in Busoga (Blowing of the local flute)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Domains for cultural heritage                                                                               | <p>Intangible culture is an indirect export. This is through the export of the tangible culture for example the performing artists who travel take the intangible art of singing or performing.</p> <p>The numerous domains for the cultural heritage include;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     | <ul style="list-style-type: none"> <li>• Performing Arts (Music, dance, song writing, music publishing, comedy, drama and theatre)</li> <li>• Audio, Visual and interactive media (Film and video, TV cinema and Radio drama)</li> <li>• Books and press (Books, Newspapers and magazines, printed matter libraries which include virtual, book fairs)</li> <li>• Design and creative services (Fashion, graphics, interior design)</li> <li>• Visual Arts and Crafts (Crafts, paintings, sculpture, photography and weaving)</li> <li>• Cultural and Natural heritage.</li> </ul>                                                                                                                                                                                                                       |
| Protection of community rights from internal and external influence | <p>To protect the community rights from external and internal influence, the government has a policy that is under review since 2006 that is protecting the culture and human rights, there is also a law on traditional leaders which indicates the need to preserve the cultural activities which are not human rights violent.</p> <p>The law of the Uganda Cultural Centre which indicates the promotion and development of a currency under culture.</p> <p>The legal framework which involves;</p> <ul style="list-style-type: none"> <li>• National parenting guidelines</li> <li>• The Ethical values</li> <li>• The child policy</li> </ul>                                                                                                                                                     |
| Challenges                                                          | <p>Uganda's cultural sector is restrained by a multitude of factors and challenges including;</p> <ul style="list-style-type: none"> <li>• Gaps in funding: These are manifested by shortages of essential training requirements due to poor funding, there are shortages of skilled staff. The monitoring and evaluation process is also slowed down.</li> <li>• Dying cultural activities: These are mostly spear headed by the community who copy the modern culture. This is through the use of the internet. The religion also discourages some cultural practices which makes preservation hard.</li> <li>• Addressing poor coordination within various Ministries that are in the cultural heritage sector: This makes work difficult because each ministry has a different framework.</li> </ul> |

## 5.0 PROJECT IMPACTS ON CULTURAL HERITAGE

There are no cultural heritage sites present within the Project development area. It is noted that the impacts to cultural heritage sites have been avoided where possible and minimized through the Project layout optimization.

The Project has taken into consideration impacts to cultural heritage resources for Project layout optimization. The potential impacts of the project activities on cultural heritage sites are shown below.

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Receptor</b> | <ol style="list-style-type: none"> <li>1. Cultural institutions</li> <li>2. Buried culture sites and artefacts</li> <li>3. Traditional customs and ceremonies</li> <li>4. Performing arts and literature</li> <li>5. History and folklore</li> <li>6. Local languages</li> </ol>                                                                                                                                         |
| <b>Positive</b> | <ul style="list-style-type: none"> <li>• Overall improvement in addressing and managing cultural heritage within and around the Project area</li> <li>• Improved site-specific management of identified cultural heritage sites</li> <li>• Installation of cultural heritage protocols is improvement over existing ad-hoc approach</li> <li>• Enhanced and focused management of local traditional festivals</li> </ul> |
| <b>Negative</b> | <ol style="list-style-type: none"> <li>1. Risk of unearthing and potentially damaging culturally sensitive sites or objects during the construction phase</li> <li>2. Cultural appropriation and misrepresentation</li> <li>3. Loss of cultural identity</li> </ol>                                                                                                                                                      |

## 5.1 Construction Phase Potential Impacts to Cultural Heritage

The construction phase has been identified as having the greatest potential to impact any cultural heritage resources. Several types of construction activities have the potential to cause direct impacts to cultural heritage. These direct impacts are anticipated to occur during activities that disturb the ground, including:

- (i) Vegetation clearance;
- (ii) Grading and excavation;
- (iii) Cut and fill operations;
- (iv) Road construction;
- (v) Use of heavy vehicles;
- (vi) Soil boring;
- (vii) Pile driving; and
- (viii) Drilling.

The Project ESIA identifies the following key Project risks and impacts to cultural heritage resources during the construction phase:

- Potential impacts to Intangible Cultural Heritage associated with the Project. The area will be impacted from land acquisition, land clearance, and construction activities. Impacts may arise from noise and shadow flicker impacts.
- Impact of construction related environment nuisance such as vibration, noise, and dust
- Potential disruption to local ceremonies and activities from increased noise levels, vibration and dust, including exclusion areas being set up to protect villagers from heavy vehicle/machinery use.
- Potential of inward migrating workers to negatively influence existing customs and religious practices undertaken by the ethnic groups, the result of which could be an erosion or loss of ethnic culture. The loss of ethnic culture may occur if migrant workers



and other outsiders are not respectful of or understand the various customs and religious practices, such as boundaries placed on areas that may only be accessed by women or men. This potential impact is concerned primarily with the construction phase, as this is when workers and other related people are likely to move to the villages in the AoI. Only a small workforce will remain in the operation phase.

- Construction of Project components will involve excavations. Potential impacts to cultural resources that are not yet known may occur during the construction phase of the Project during clearing or excavation work.

In addition to these direct physical impacts described above, the Project has the potential to cause indirect impact to cultural heritage resources. Indirect impacts result from Project activities that do not physically damage a resource, but rather, impact stakeholders' ability to use or access to cultural heritage resources, thereby negatively affecting its cultural value. For instance, restriction on public access to existing tangible cultural heritage sites or areas used for Intangible cultural heritage activities, such as forests.

## **5.2 Operation Phase Potential Impacts to Cultural Heritage**

Project risks and impacts to cultural heritage resources during the operational phase are not expected to be significant, and are expected to be limited to the changes to the natural landscape

## **6.0 CULTURAL HERITAGE MANAGEMENT PROCEDURES/CONTROLS**

In aligning Project activities with legal requirements, international standards and ESIA commitments, the Project has committed to the following management measures in order to ensure minimum impacts to known and unknown cultural heritage resources.

### **6.1 Management Measures**

#### **6.1.1 Pre-Construction Phase**

During the pre-construction phase, the Project will make efforts to minimize Project impacts on cultural heritage resources as follows:

##### **Pre-construction Survey**

The Project has conducted consultation with local authorities and community members/and owners/users within the Project development area to identify the presence of cultural heritage resources, both tangible and intangible, and to understand the communities' concerns and preferences for mitigation measures in relation to Project impacts on cultural heritage resources.

##### **Commitments during ESIA Technical/Field Studies**

The Project placed a strong emphasis on respecting the cultures and customs of the villagers, and has been participating in various rituals as part of granting access and permission to undertake technical/field studies to support the ESIA. This will be formalised as part of this plan to apply to all Project stages and all Project workers.

##### **Project design**

The Project has also sought to minimise any impact to cultural heritage through optimisation of the Project layout.

#### **6.1.2 Construction Phase**

During the construction phase, the following cultural heritage protocols will be implemented:

- Ongoing consultation with the villagers who reside nearby the Protected Area to ensure communities have a good understanding of Project activities and potential impacts on the natural resources (including the potential for the Project to disrupt ceremonies and activities), and the grievance mechanism.
- Seek permission from the village leaders, elders and the broader community to enter and utilise the protected area that overlap with the Project footprint. Document the consent process and the consent itself, taking a precautionary approach, to address the potential for WB Indigenous People Safeguards to be triggered in terms of consent for Project impacts on IP cultural resources, and strictly comply with IPs requirements in other management plans including Stakeholder Engagement Plan (SEP) and Community Development Plan (CDP).
- The Project will plan Project activities to avoid activities that involve the use of large equipment and machinery which may cause noise and dust disturbance to the nearby villages during their ceremonies and festivals.
- To ensure workers are aware of the cultural heritage sensitivities and the various protocols in place, the Workers Code of Conduct will contain a statement requiring workers to respect cultural heritage and adhere to all protocols and management plans.

The cultural heritage protocol will be supported by various plans such as the Stakeholder Engagement Plan (SEP) which provides stakeholder engagement strategies and activities throughout the Project lifecycle. The Construction Environmental and Social Management Plan (CESMP) will also outline requirements for the EPC Contractors to notify the community

relations team prior to entering the sacred forest to ensure appropriate notification and rituals are taken place prior to start of work. In addition to cultural heritage protocol and measures above, the Project has committed to developing and implementing the following construction phase cultural heritage management programs:

- Cultural Heritage Training and Awareness Program for Project personnel and contractors
- A Cultural Heritage Monitoring Program; and
- A Cultural Heritage Finds Procedure.

The following sections provide information on these construction phase programs.

#### **6.1.2.1.1 Cultural Heritage Training and Awareness**

The Project will develop cultural heritage awareness training materials, including training specific to identification of cultural heritage finds and the implementation of the CHMP. Training awareness materials shall be developed to:

- Raise awareness of tangible and intangible local customs, and traditional norms, including how to behave within different cultural environments.
- Provide a basic understanding of known finds in the work areas and explain cultural heritage find identification, stop work, and notification and reporting procedures as per the Chance Find Procedure.

Awareness training will be available for all personnel with the potential to encounter tangible or intangible cultural heritage resources during their day-to-day activities. This training shall be provided as part of general site induction training. Examples of Contractor staff who should receive this training include environmental and health and safety staff, construction plant operators and flaggers and construction labourers.

The cultural heritage awareness training will be delivered to Project and Contract staff in two ways. The first, training will be delivered during general site induction. The second training method will consist of a short, “toolbox talk” style training delivered to Project and Contractor staff by the Environmental and Social Manager.

#### **6.1.2.1.2 Cultural Heritage Monitoring Program**

In order to identify chance finds, the Project will implement cultural heritage monitoring programs for all ground disturbing activities. The purpose of this monitoring is to record and protect cultural heritage by utilizing Project personnel and Project contractors to monitor project activities to prevent impacts to resources.

Cultural heritage construction monitoring refers to construction monitoring performed by Project personnel and Project contractors during their day-to-day activities. As described in Section 6.1.2.1 of the CHMP, cultural heritage awareness training shall be provided to all personnel with the potential to encounter tangible or intangible cultural heritage resources during their day-to-day activities. The expectation is that individuals will use the cultural heritage awareness training they have received to identify potential cultural finds they may encounter during their day-to-day activities and report them to Site Manager or Contractor Environmental and Social Manager.

#### **6.1.2.1.3 Cultural Heritage or Chance Finds Procedure**

According to the WB Environmental and Social Standard 8: Cultural Heritage, under circumstances where archaeological and cultural heritage resources are discovered, it is required that the project will not remove any of them unless the following conditions are met:

- No alternatives to removal are available;

- The overall benefits of the project substantially outweigh the anticipated cultural heritage loss from removal;
- Any removal is implemented in compliance with relevant provisions of national and/or local laws, regulations, and protected area management plans and national obligations under international laws, and employs the best available techniques.

Based on the results of cultural heritage survey in the Project development area, the Project has NO potential of disturbing or altering undiscovered cultural heritage resources (including human remains) discovered during construction activities (i.e., finds). The Project has developed a Chance Finds Procedure that governs the management of cultural heritage finds discovered during Project activities. The Chance Finds Procedure has the following objectives:

- Define the procedures to be followed to ensure appropriate management of cultural heritage finds, while also minimizing disruption to the construction schedule;
- Provide a consistent approach to management of cultural heritage finds to streamline worker acceptance and compliance; and
- Ensure compliance with the WB Environmental and Social Standard 8 requirements and other requirements and align with local customs and traditional norms.

#### **6.1.2.2 Additional Mitigation Measures for Cultural Heritage**

In addition to the mitigation measures and programs presented above, the Project will also implement the following to further support and promote local cultural heritage:

- Provide support for the documentation and preservation of traditional knowledge on herbs and their benefits/usage, skills, and indigenous crafts passed through women (e.g., hand knitting mats, bamboo baskets, and woven woollen carpets).
- Set up a women's cooperative to promote indigenous crafts, which will involve the investigation of where indigenous crafts can be sold and market for these crafts. This will support efforts to increase revenue and enhance livelihoods.

## **7.0 MONITORING AND REPORTING**

This section summarizes the proposed mitigation/management measures described in Section 6, and provides corresponding monitoring and reporting requirements. These measures are outlined in Table 7.1.



Table 7.1: Management and Monitoring

| Potential Impact and Impact Source                                                                                                                                                                         | Management                                                                                                                                                                                                                                                                             | Monitoring                                                      |                                                                                                              |                       |                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|
|                                                                                                                                                                                                            | Management Measures                                                                                                                                                                                                                                                                    | Monitoring Activities                                           | Performance Indicators                                                                                       | Frequency             | Responsible Person(s)       |
| Damage to, or disturbance (e.g., noise, dust, etc.) of, cultural heritage sites, structures and values by Project activities, including earthworks (e.g., excavation) and movement of people and vehicles. | Consult stakeholders who may be impacted by damage to or removal of cultural heritage sites, structures, and values, and provide opportunities for them to give feedback.                                                                                                              | Record consultation activities with impacted stakeholders       | N/A                                                                                                          | Prior to Construction | UWA and NFA                 |
|                                                                                                                                                                                                            | Develop a calendar of festivals, ceremonies or similar events and a map of known cultural heritage sites, structures and values to avoid potential Project impacts during these events.                                                                                                | Verification of completion                                      | N/A                                                                                                          | Prior to Construction | UWA and NFA                 |
|                                                                                                                                                                                                            | Ensure relocation of known cultural heritage sites (e.g., cemeteries) within the Project boundary is done in a culturally appropriate manner prior to construction, in line with the applicable standards.                                                                             | Record the relocation process                                   | Number of non- compliances with the applicable standards                                                     | Prior to Construction | UWA, NFA and EPC Contractor |
|                                                                                                                                                                                                            | Conduct toolbox meetings prior to conducting construction activities, particularly earthmoving activities, to ensure impacts to cultural heritage sites, structures, and values are considered.                                                                                        | Record completion of toolbox meetings                           | N/A                                                                                                          | Construction          | UWA, NFA and EPC Contractor |
|                                                                                                                                                                                                            | Provide the Project workforce (including employees and subcontractors) with information and awareness training on the surrounding cultural heritage sites, structures, and values, the management measures in place (i.e., the CHMP) and the Chance Finds Procedure during inductions. | Record workforce attendance at inductions                       | Percentage of workforce attendance at inductions                                                             | Ongoing               |                             |
|                                                                                                                                                                                                            | Ensure the person(s) in charge is aware of the protocols for operating near cultural heritage sites, structures and values, and the actions to minimise disturbance to cultural heritage values.                                                                                       | Record workforce attendance at inductions and relevant training | Number of non- compliances with the CHMP                                                                     | Ongoing               |                             |
|                                                                                                                                                                                                            | Ensure the Worker Code of Conduct contains expectations regarding cultural awareness and sensitivities.                                                                                                                                                                                | Record non- compliances with the Worker Code of Conduct         | Number of non- compliance with the Worker Code of Conduct relating to cultural heritage                      | Ongoing               |                             |
|                                                                                                                                                                                                            | Conduct ongoing engagement with stakeholders so that they are aware of the timing of construction activities (e.g., periods of increased noise and dust) and potential impacts to cultural heritage sites, structures, and values.                                                     | Record engagement activities with stakeholders                  | N/A                                                                                                          | Ongoing               | UWA and NFA                 |
|                                                                                                                                                                                                            | Implement and maintain a community grievance mechanism, so that stakeholders can raise issues and concerns.                                                                                                                                                                            | Record complaints                                               | Number of complaints relating to damage and/or disruption of cultural heritage sites, structures, and values | Ongoing               | UWA and NFA                 |
|                                                                                                                                                                                                            | Establish and mark, where necessary, no go zones for areas considered to be significant cultural heritage sites, structures and values.                                                                                                                                                | Record establishment of no go zone                              | Number of non- compliances with barriers to avoid damage or disturbance to cultural heritage sites           | Ongoing               | UWA, NFA and EPC Contractor |
|                                                                                                                                                                                                            | Implement management measures outlined in the Traffic Management Plan, Air Quality Management Plan, and Noise and Vibration Management Plan to reduce disturbance, including dust, noise and vibrations, to nearby cultural heritage sites, structures and values.                     | Verification of implementation                                  | Number of non- compliances with these plans                                                                  | Ongoing               | UWA, NFA and EPC Contractor |
|                                                                                                                                                                                                            | Establish physical barriers between and/ or setback distances from cultural heritage sites, structures, and values, where necessary.                                                                                                                                                   | Record establishment of barriers and setback distances          | N/A                                                                                                          | Ongoing               | UWA, NFA and Contractor     |
|                                                                                                                                                                                                            | Select the location and direction/ positioning of Project lights to minimise impacts to surrounding cultural heritage sites, structures and values, including nearby pagodas and temples, as well as festivals and ceremonies.                                                         | Verification of implementation                                  | N/A                                                                                                          | Ongoing               | UWA, NFA and EPC Contractor |
|                                                                                                                                                                                                            | Seek to maintain access to cultural heritage values for local people, or where necessary relocate cultural heritage values to avoid disturbance.                                                                                                                                       | Record complaints                                               | Number of complaints relating to damage and/or disruption of cultural heritage sites, structures, and values | Ongoing               | UWA and NFA                 |
|                                                                                                                                                                                                            | Implement a Chance Finds Procedure to provide guidance to workers on the actions that should be taken if a cultural heritage site, structure or value is uncovered during Project activities, in line with the applicable standards.                                                   | Verification of implementation                                  | Number of non- compliances with the Chance Finds Procedure                                                   | Ongoing               | UWA, NFA and EPC Contractor |

## 7.1 Reporting

This section outlines the processes for monitoring and reporting associated with the CHMP. These processes are required to:

- validate predictions made in the ESIA and assess the actual impacts of the Project on cultural heritage sites, structures and values;
- verify and document that the management measures identified have been implemented;
- document and evaluate the effectiveness of the management measures; and
- demonstrate compliance with applicable standards.

In order to assess the effectiveness of the management measures as detailed in Section 6 and identify the need for further action, the CHMP monitoring program outlined in Table 7.1 above will be followed.

### 7.1.1 Contractor Reporting

During construction the engineering, procurement and construction (EPC) contractor will be responsible for implementing the CHMP and monitoring activities in compliance with the CHMP. Monitoring results, including any non-conformances and associated corrective actions, will be reported to UWA. EPC contractor's monthly construction environmental report to UWA will include a summary of:

- Incidents of disturbance and/ or damage to known cultural heritage sites, structures and values.
- All cultural heritage sites, structures and values identified through chance finds.
- Management measures undertaken as a result of chance finds.
- Performance indicators (captured in *Table 7.1*) as applicable in the reporting period.

The EPC contractor will notify UWA immediately should the monitoring program identify any non-compliances with the CHMP. In instances, where a non-compliance with the CHMP occurs the EPC contractor will be responsible for identifying and implementing corrective action/s. The EPC contractor will document non-compliances and corrective actions.

In addition, the EPC Contractor Environmental and Social Manager should conduct periodic inspections to ensure workforce are complying with the CHMP requirements.

### 7.1.2 Audits

The Project will be subject to internal audits. The internal audits will be conducted by the UWA Environmental and Social Manager Lead to ensure the EPC contractor is appropriately managing and monitoring the CHMP. *Table 5.2* presents a summary of the process.

| Audit    | Auditor                                    | Frequency |
|----------|--------------------------------------------|-----------|
| Internal | IFPA - CD Environmental and Social Manager | Bi-annual |

Internal auditors will notify relevant Project site staff about upcoming audit events, via written notice. This will provide a mechanism to communicate the schedule, activities, and objectives of the audit. If urgent, the project site may be notified via phone.

The audit process will involve reviewing onsite activities to assess compliance with the management plans and/ or UWA's internal standards. The auditor will review all records of previous audits and evaluate historic compliance and use of appropriate corrective actions.

Findings from the audit will be summarised in an audit report. A copy of the resulting audit report is to be made available upon request for reference and, where necessary, implementation of any identified corrective actions.

The key performance indicators to be considered when auditing this management plan are:

- Number of non-compliances with the CHMP.
- Number of non-compliances with the Chance Finds Procedure.
- Percentage of workforce attendance at inductions.
- Number of complaints made in relation to damage and/or disturbance of cultural heritage sites, structures and values.

### **7.1.3 Notification and Reporting of Chance Finds**

The EPC contractor should notify UWA immediately of any potential cultural heritage sites, structures and/or values that have been discovered as a chance find, in line with the Chance Finds Procedure. The EPC contractor will also be responsible for completing an Incident Report.

As noted in the Chance Finds Procedure, if a chance find is made the UWA Environmental and Social Manager will be responsible for liaising with the relevant department of the Ministry of Tourism, Wildlife and Antiques to notify them of the chance find.

The Project will provide the Ministry of Tourism, Wildlife and Antiques with copies of Incident Reports, as required.

## 8.0 ROLES AND RESPONSIBILITIES

This section provides details of the Project's organisational structure with regards to onsite delivery of the Project, and the various roles and responsibilities of those people involved in delivering the Project.

The Project organisational chart and overall roles and responsibilities are outlined in the Environmental and Social Management Plan (ESMP). The key roles and responsibilities for the CHMP are outlined in Table 8.1.

Table 8.1: Roles and Responsibilities

| Role                                            | Responsibilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IFPA - CD Project Managers                      | Ensure appropriate resources are available for the implementation of the CHMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Site Manager                                    | <ol style="list-style-type: none"> <li>1. Ensuring the MTWA's Chance Find Procedure (CFP) is followed in the event of a discovery.</li> <li>2. Reporting all chance finds to the Project Manager.</li> <li>3. Ensuring the initial protection of a chance find location.</li> <li>4. Ensuring that all workers are familiar with this CHMP through induction training and other training provided.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environmental and Social Manager                | <ol style="list-style-type: none"> <li>1. Ensure Project compliance with the Project Standards and other requirements set out in this Plan.</li> <li>2. Ensuring activities do not disturb cultural heritage sites without appropriate approvals.</li> <li>3. Ensuring that all site managers will be aware of the terms of the EIA, the conduct of the earthworks, the cultural heritage sites located in the areas where the Company operates and the terms of cultural heritage management.</li> <li>4. Facilitate access on site to the cultural heritage specialists in charge of assessing the presence of cultural heritage values on site.</li> <li>5. Coordinate interfaces with local government authorities and external stakeholders.</li> <li>6. Liaising with the relevant department of the MICT and relevant stakeholders in the event of a chance find.</li> <li>7. Ensure all areas have been given clearance by local government authorities regarding the presence of possible cultural heritage artefacts.</li> <li>8. Ensure the Chance Finds Procedure is implemented when an unknown cultural heritage value is discovered.</li> <li>9. Responsible for reviewing and updating of the CHMP, as required.</li> <li>10. Conduct engagement in relation to the relocation of cultural heritage.</li> <li>11. Monitor the grievance mechanism and assist in responding to concerns relating to cultural heritage.</li> <li>12. Provide training and guidance to the workforce as needed to facilitate awareness and implementation of the CHMP.</li> <li>13. Providing training at project site about chance find procedure, it will also be a part of orientation / inception training of new comers, contractors, sub- contractors, suppliers and visitors.</li> <li>14. Conducting toolbox talks during construction to ensure that workers will be alert to any signs of past cultural activity in the area.</li> </ol> |
| EPC Contractor Environmental and Social Manager | <ol style="list-style-type: none"> <li>1. Support implementation of the CHMP and ensure the Chance Finds</li> <li>2. Procedure is implemented.</li> <li>3. Provide assistance and advice on site to fulfil the requirements of the</li> <li>4. CHMP, assess data from inspections, monitoring and reporting, and</li> <li>5. provide project-wide advice to ensure a consistent approach and outcomes are achieved.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Role | Responsibilities                                                                                                    |
|------|---------------------------------------------------------------------------------------------------------------------|
|      | 6. Provide training and guidance to the workforce as needed to facilitate awareness and implementation of the CHMP. |

### 8.1 Document Amendment and Distribution

The CHMP shall be reviewed by the Project Environmental and Social Manager as follows:

- As requested by the Project Manager;
- When there is a change in the Project footprint or Project construction method/ technology that may affect the accuracy of this document;
- When there has been a significant event to which this document was relevant; or
- As a result of a non-conformance resulting from an audit.



## Appendix L: Climate Change Vulnerability and adaptive measures

Table A.L.1: Identifying Climatic Threats and Impacts

| Climatic variable | Empirical data                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Climate change threat                                                                                               | Project component at risk           | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature       | The average temperature anomaly was about 0.61°C warmer than the long term mean value. The year 2021 was ranked as the fourth warmest year on record since 1950, after 2019, 2017, and 2016. The rate at which temperature has been increasing in the region over the period 1950 to 2021 and 1990 to 2021 was found to be 0.70°C and 0.61°C per decade, respectively. The four warmest years over this region since 1950 are 2019, 2017, 2016 and 2021 in that order. | <ul style="list-style-type: none"> <li>• More intense/hotter dry seasons</li> <li>• Changing seasonality</li> </ul> | Landscaping and existing vegetation | <p><b>Expected Impacts:</b></p> <ul style="list-style-type: none"> <li>• Increased temperature affects the aesthetic, functional and ecological value of the project landscaping and vegetation. Some plants may lose their ornamental or cultural appeal due to changes in color, shape or size. Some plants may also lose their ability to provide shade, erosion control, stormwater management, wildlife habitat or carbon sequestration.</li> <li>• Impact on the distribution and composition of plant communities / species richness, as well as their interactions with other organisms. Some plants may shift their ranges to higher altitudes or latitudes, while others may face competition, displacement or extinction.</li> <li>• Development of Invasive species around the VIC</li> <li>• Increased mortality of young seedlings</li> </ul> <p><b>Empirical data:</b></p> <ul style="list-style-type: none"> <li>• Regular intense heat can cause lethal damage to plants, increase evapo-transpiration, wilting, changes of composition of vegetation and disruption of photosynthesis</li> <li>• Temperatures of 30°C to 35°C promote growth of plants; concentration of CO<sub>2</sub> is increased; higher concentrations of CO<sub>2</sub> may reduce transpiration (i.e. water loss) as plants reduce their stomatal apertures.</li> <li>• Rate of temperature increase: 0.61°C per decade.</li> </ul> |

|  |  |                                                                                                       |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--|--|-------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |                                                                                                       |                    | <ul style="list-style-type: none"> <li>• Warmest years to come after: 2019, 2017, 2016, 2021 (in order)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  |  | <ul style="list-style-type: none"> <li>• More intense heat</li> <li>• Changing Seasonality</li> </ul> | Building structure | <p><b>Expected impacts:</b></p> <ul style="list-style-type: none"> <li>• Damage of the building envelope may alter the indoor thermal comfort, air quality and energy efficiency of the VIC building.</li> <li>• The building may have an impact on the greenhouse gas emissions and carbon footprint of the entire VIC, which can further contribute to climate change.</li> <li>• Damage or destruction of the VIC building, facilities and equipment as well as disrupting the access, communication, power and water supply of the center.</li> <li>• Reputational damage to the Central Forest Reserve and NFA</li> <li>• Additional investments required to manage increased risk of environmental damage, injuries and deaths due to failure of infrastructure assets.</li> <li>• Increased demand for heating, ventilation, and air conditioning (HVAC) systems to maintain a comfortable indoor environment for the visitors and staff, especially during extreme heat events.</li> </ul> |
|  |  |                                                                                                       |                    | <p><b>Empirical Data:</b></p> <ul style="list-style-type: none"> <li>• Regular heat intensity negatively affects the construction elements such as the bricks through the formation of thermal cracks</li> <li>• Intensive heat causes warping and breaking of the Eucalyptus logs, expansion and contraction of steel members which leads to deteriorate of the structure</li> <li>• Warmer temperatures can increase the geographic spread of where vectors – like mosquitoes and ticks – can survive and breed.</li> <li>• Droughts can also support breeding by forming pools of standing water from previously flowing water</li> </ul>                                                                                                                                                                                                                                                                                                                                                       |

|               |                                                                                                                                                                                                                                         |                                                                                                       |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                                                                         |                                                                                                       |                                     | <ul style="list-style-type: none"> <li>Droughts cause weathering of plants that would otherwise provide for wind breaking. This exposes the structure to wind load</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               |                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Drier intense season</li> <li>Changing Seasonality</li> </ul>  | Utilities                           | <p><b>Expected Impact:</b></p> <ul style="list-style-type: none"> <li>Reduced efficiency of solar panels which may induce over reliance on fossil fuels</li> <li>Prolonged droughts may impact on the availability and quality of water supply for the visitor information center, which can deteriorate the sanitation, hygiene and health of visitors and staff.</li> </ul> <p><b>Empirical Data:</b></p> <ul style="list-style-type: none"> <li>The optimal temperature for solar panels is around 25°C (77°F). Solar panels perform best under moderate temperatures, as higher or lower temperatures can reduce efficiency. For every degree above 25°C, a solar panel's output can decrease by around 0.3% to 0.5%, affecting overall energy production.</li> <li>Prolonged periods of high temperature, with low precipitation (i.e., drought) resulting in decreased water levels of shallow tube-wells and deep tube wells, as well as ponds drying up</li> </ul> |
| Precipitation | Rainfall trends were sigmoid over previous 20 years, whereas since then it has been triangle in shape, e.g. distribution of rainfall saw more months with steady amounts in the past whereas rainfall has been erratic in recent years. | <ul style="list-style-type: none"> <li>Flooding</li> <li>Inundation</li> <li>Less rainfall</li> </ul> | Landscaping and existing vegetation | <p><b>Expected impact:</b></p> <ul style="list-style-type: none"> <li>Prolonged rains and flooding can affect the aesthetic, functional and ecological value of the landscaping and existing vegetation. Some plants may lose their ornamental or cultural appeal due to changes in color, shape or size</li> </ul> <p><b>Empirical data:</b></p> <ul style="list-style-type: none"> <li>Prolonged rains and flooding can cause soil erosion, compaction, waterlogging, salinization, acidification and nutrient leaching. This can affect the root system, water uptake, nutrient availability and oxygen supply of the plants.</li> </ul>                                                                                                                                                                                                                                                                                                                                |

|  |  |                                                                                                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--|--|---------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |                                                                                                                                 |                    | <ul style="list-style-type: none"> <li>Flooding increases the risk of fungal, bacterial and viral infections, as well as pest and weed infestations. This can affect the photosynthesis, transpiration, reproduction and immunity of the plants.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  |  | Flooding                                                                                                                        | Building structure | <p><b>Expected Impacted:</b></p> <ul style="list-style-type: none"> <li>Increased stress and deterioration of the building materials and components, such as concrete, steel, wood, and roofing, due to exposure to moisture, corrosion, mold, and rot. This can reduce the structural integrity and lifespan of the building, as well as increase the maintenance and repair costs.</li> <li>Pests and vector infestations</li> </ul> <p><b>Empirical data:</b></p> <ul style="list-style-type: none"> <li>Increased rainfall can increase the amount of standing water, creating more breeding areas for many vectors.</li> <li>Water that reaches the structural members initiates decay and corrosion.</li> <li>If the structure is made up of concrete block has more chances of getting damaged as these are porous in nature and water seepage could be easier in such buildings</li> <li>If the building basement is more prone to water logging, there are more chances of water logging in the foundation base</li> <li>Ground water level is raised in the year if long rainy season takes place.</li> </ul> |
|  |  | <ul style="list-style-type: none"> <li>More intense dry seasons</li> <li>Changing seasonality</li> </ul> Decreasing water table | Utilities          | <p><b>Expected Impact:</b></p> <ul style="list-style-type: none"> <li>Flooding can also disrupt the access and operation of the center, affecting its visitors and staff.</li> <li>Increased vulnerability to power outages, due to increased frequency and intensity of extreme weather events, such as floods. This can disrupt the operation and service of the center, as well as the safety and comfort of the visitors and staff</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|          |                                                                                                                                                                         |                                                                                                                                                |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |                                                                                                                                                                         |                                                                                                                                                |                                     | <ul style="list-style-type: none"> <li>Increased demand and cost for water treatment and distribution, due to increased variability and complexity of water sources and quality. This can strain the capacity and budget of the center, as well as increase its energy consumption and greenhouse gas emissions</li> <li>Increased risk of water contamination, due to increased runoff of pollutants, sewer overflows during storms or floods. This can compromise the water quality and safety of the center, as well as the surrounding environment</li> </ul>             |
|          |                                                                                                                                                                         |                                                                                                                                                |                                     | <b>Empirical data:</b> <ul style="list-style-type: none"> <li>Rainfall patterns have changed where excessive rainfall occurs periodically in July and August rather than previous uniform rainfall</li> </ul>                                                                                                                                                                                                                                                                                                                                                                 |
| Humidity | There was substantial variation between the RH levels of January and December over the 3 10- year periods documented, whereas July and August have much less variation. | <ul style="list-style-type: none"> <li>More intense dry season</li> <li>Change seasonality</li> <li>Increase water vapor in the air</li> </ul> | Landscaping and existing vegetation | <b>Expected impact:</b> <ul style="list-style-type: none"> <li>Growth of small plants is affected, may suffer from greater exposure due to ground fog</li> <li>Reduction in the plant cover</li> </ul>                                                                                                                                                                                                                                                                                                                                                                        |
|          |                                                                                                                                                                         |                                                                                                                                                |                                     | <b>Empirical data:</b> <ul style="list-style-type: none"> <li>When relative humidity levels are too high or there is a lack of air circulation, a plant cannot make water evaporate or draw nutrients from the soil. When this occurs for a prolonged period, a plant eventually rots</li> </ul>                                                                                                                                                                                                                                                                              |
|          |                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Changing seasonality</li> <li>Drying up of water levels in tube wells</li> </ul>                        | Building structure                  | <b>Expected impact:</b> <ul style="list-style-type: none"> <li>Increased growth and spread of mold, mildew, and pests in the center, due to high humidity and organic matter. This can damage the building materials and furnishings, as well as pose health risks to the visitors and staff</li> <li>Increased corrosion and deterioration of the electrical and mechanical equipment and components in the center, due to exposure to moisture which reduces the performance and lifespan of the equipment, as well as increase the maintenance and repair costs</li> </ul> |
|          |                                                                                                                                                                         |                                                                                                                                                |                                     | <b>Empirical data:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



|      |  |                         |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------|--|-------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |  |                         |                                     | <ul style="list-style-type: none"> <li>Humidity affects the performance of buildings, causing condensation, mold growth, mildew, staining, and the corrosion and decay of the building fabric as well as poor performance of insulation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|      |  | More intense dry season | Utilities                           | <p><b>Expected Impact:</b></p> <ul style="list-style-type: none"> <li>Increased demand for cooling and dehumidification systems to maintain a comfortable and healthy indoor environment for the visitors and staff, especially during humid seasons. This can increase the energy consumption and greenhouse gas emissions of the center, as well as the vulnerability to power outages</li> <li>Increased risk of heat stress and discomfort for the visitors and staff, especially during hot and humid days. High humidity can reduce the body's ability to cool down through sweating, leading to overheating and dehydration. This can affect the health and productivity of the people in the center, as well as the quality of their experience</li> </ul> <p><b>Empirical data:</b></p> <ul style="list-style-type: none"> <li>It is assumed that CO<sub>2</sub>-induced warming will create a substantial increase in atmospheric water vapor. Water vapor is a much more potent greenhouse gas than CO<sub>2</sub>, so substantial increases in atmospheric water vapor can certainly cause significant warming</li> <li>Warmer air is able to hold more water than cooler air, so absolute water vapor would have to increase quite substantially for relative humidity to remain constant or increase in a warming world</li> </ul> |
| Wind |  | Windstorms              | Landscaping and existing vegetation | <p><b>Expected Impacts:</b></p> <ul style="list-style-type: none"> <li>Loss of vegetation at the site</li> </ul> <p><b>Empirical data:</b></p> <ul style="list-style-type: none"> <li>Trees provide a valuable shelterbelt that provides protection from the wind. The shelterbelt controls wind</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|  |  |            |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|--|------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |            |                    | <p>velocity up to 10 times the tree height in the front side and 30 to 50 times the leeward side of the tree</p> <ul style="list-style-type: none"> <li>• Wind is also an important factor in dispersing seed of some tree species</li> </ul>                                                                                                                                                                                                                                                                        |
|  |  | Windstorms | Building structure | <p><b>Expected Impacts:</b></p> <ul style="list-style-type: none"> <li>• Increased risk of wind damage and disruption to the building and its contents, especially if the center is located in a windy or exposed area. High winds can cause structural damage, roof leaks, window breakage, power outages, and debris accumulation.</li> <li>• Increased stress and fatigue on the electrical and mechanical equipment and components in the center, due to exposure to wind vibrations and fluctuations</li> </ul> |
|  |  |            |                    | <p><b>Empirical data:</b></p> <ul style="list-style-type: none"> <li>• Trees provide a valuable shelterbelt that provides protection from the wind. The shelterbelt controls wind velocity up to 10 times the tree height in the front side and 30 to 50 times the leeward side of the tree</li> <li>• Wind is also an important factor in dispersing seed of some tree species</li> </ul>                                                                                                                           |

Table A.L.2: Identifying Vulnerabilities

| CLIMATE CHANGE THREAT                 | EXPOSED COMPONENT                   | IMPACTS                                                                                  | VULNERABILITIES                                                                                                                                                                                                       | PROPOSED ADAPTIVE CAPACITIES                                                                                                                                              |
|---------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Increasing temperatures, intense heat | Landscaping and existing vegetation | Low survival rates of seedlings                                                          | <ul style="list-style-type: none"> <li>• Negative impacts of forest quality, quantity and diversity.</li> <li>• Policy and procedure constraints that hinder forest management and sustainable forest use.</li> </ul> | <ul style="list-style-type: none"> <li>• Planting of indigenous species</li> <li>• Promoting indigenous tree species rather than exotics</li> <li>• Fire lines</li> </ul> |
|                                       |                                     | Shortage water                                                                           |                                                                                                                                                                                                                       |                                                                                                                                                                           |
|                                       |                                     | Decreased productivity of forest- inadequate availability of firewood, fodder and timber |                                                                                                                                                                                                                       |                                                                                                                                                                           |

|                                                               |                                     |                                                                                                                                  |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               |                                     |                                                                                                                                  | <ul style="list-style-type: none"> <li>Disappearance of some useful fodder tree species from locality</li> </ul>                                                                                             | <ul style="list-style-type: none"> <li>Abundant local knowledge on characteristics of indigenous species and multiple benefits provided</li> </ul>                                                                                                                                                                                                                            |
|                                                               | Building structure                  | Increased indoor temperatures                                                                                                    | <ul style="list-style-type: none"> <li>Impact on structural integrity</li> <li>Decrease on the demand and behavior of visitors reducing on the revenue</li> </ul>                                            | <ul style="list-style-type: none"> <li>Installation of Air conditioner</li> <li>The building should adopt more sustainable and renewable energy resources. It should use more eco-friendly and durable materials</li> </ul>                                                                                                                                                   |
|                                                               |                                     | Increased infestation of pests and vectors                                                                                       |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               |                                     | Emission of Greenhouse gases                                                                                                     |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               | Utilities                           | Decreased water levels                                                                                                           | <ul style="list-style-type: none"> <li>Damage or destruction of the VIC building, facilities and equipment as well as disrupting the access, communication, power and water supply of the center.</li> </ul> | <ul style="list-style-type: none"> <li>Selecting resilient and diverse plant species, using water-efficient and soil-conserving practices, and frequent monitoring.</li> </ul>                                                                                                                                                                                                |
|                                                               |                                     | Increased water stress.                                                                                                          |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               |                                     | Decreased aquatic biodiversity and total numbers                                                                                 |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
| (Precipitation)<br>Drought<br>(extended periods without rain) | Landscaping and existing vegetation | Changes in fruiting and other tree behaviors - lower quality of fruits and other products, or none produced at all in some cases | <ul style="list-style-type: none"> <li>Less predictable and negatively impacted fruiting and other cycles in forest trees</li> </ul>                                                                         | <ul style="list-style-type: none"> <li>Silvicultural practices to create space for regeneration and proper aeration</li> <li>Planting of broadleaved fodder tree species</li> <li>Plant deeper rooted and hardy indigenous tree species</li> <li>Ensure mixed planting of tree species to enhance biodiversity – reduce initial plantation species like eucalyptus</li> </ul> |
|                                                               |                                     | Poor quality of forest trees - inadequate supply of basic forest products for fodder, wildlife bedding, fuelwood and much more   |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               |                                     | Increase in invasive species - decreased productivity                                                                            |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               |                                     |                                                                                                                                  |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               | Building structure                  | Increased indoor temperatures                                                                                                    | <ul style="list-style-type: none"> <li>Decrease on the demand and behavior of visitors reducing on the revenue</li> </ul>                                                                                    | <ul style="list-style-type: none"> <li>Installation of Air conditioner</li> <li>Fumigating around the building to keep vectors and pests away</li> </ul>                                                                                                                                                                                                                      |
|                                                               |                                     | Increased infestation of pests and vectors                                                                                       |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |
|                                                               | Utilities                           | Increasing frequency of erratic rainfall - high run off and less water retention in soil                                         | <ul style="list-style-type: none"> <li>Damage or destruction of the VIC building, facilities and equipment as well as disrupting the access, communication, power and water supply of the center.</li> </ul> | <ul style="list-style-type: none"> <li>Implementing water conservation and efficiency measures, such as installing low-flow fixtures and rain barrels. These measures can reduce the water demand and wastage at the VIC.</li> </ul>                                                                                                                                          |
|                                                               |                                     | Decreasing water levels                                                                                                          |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |

|          |                                     |                                                                                                       |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|-------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |                                     |                                                                                                       |                                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>Developing alternative or backup water sources, such as water recycling.</li> </ul>                                                                                                                                                                                                                                                          |
| Humidity | Landscaping and existing vegetation | Loss of soil moisture during hot season - changing habitat of tree species, shifting some species.    | <ul style="list-style-type: none"> <li>Negative impacts of forest quality, quantity and diversity.</li> <li>Policy and procedure constraints that hinder forest management and sustainable forest use.</li> <li>Disappearance of some useful fodder tree species from locality</li> </ul> | <ul style="list-style-type: none"> <li>Planting diverse indigenous species</li> <li>Promoting indigenous tree species rather than exotics</li> </ul>                                                                                                                                                                                                                                |
|          |                                     | Loss of species - Disappearance of some tree species                                                  |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |
|          | Utilities                           | Decreasing water quality-Increased risk of disease                                                    | Decay and damage of VIC components                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Using energy-efficient and renewable energy solutions, such as installing insulation, double-glazed windows, LED lighting, solar panels, and battery storage.</li> <li>Implementing heat stress prevention and management measures, such as providing adequate ventilation, hydration, shade, and rest for the visitors and staff</li> </ul> |
|          |                                     | Increasing water vapour in the atmosphere during wet season.                                          |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |
| Wind     | Flora                               | Reduced sand carrying by wind - reduction of sand pollution                                           | Loss of vegetation at the site                                                                                                                                                                                                                                                            | Multilayer tree crops                                                                                                                                                                                                                                                                                                                                                               |
|          |                                     | Maintain air temperature – improvement of atmospheric weather responsible in part for wind generation |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |
|          | Utilities                           | Soil erosion                                                                                          | Disruption in the operations of the VIC                                                                                                                                                                                                                                                   | Implementing wind-resistant design and construction measures, such as using strong and flexible materials, reinforcing the building structure, installing storm shutters or shatter-proof glass, securing loose objects,                                                                                                                                                            |
|          |                                     | Loss of water as a water vapor-Reduced water levels in rivers and wells                               |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |
| Flooding | Flora                               | Damage of trees                                                                                       | <ul style="list-style-type: none"> <li>Decreasing indigenous useful species.</li> <li>More infestation by insects and pests.</li> <li>Damage of forest areas</li> </ul>                                                                                                                   | <ul style="list-style-type: none"> <li>Vegetative check-dam, bioengineering and concrete check-dam.</li> <li>Silvicultural practices to create space for regeneration and proper aeration</li> <li>Indigenous fodder tree species</li> </ul>                                                                                                                                        |
|          |                                     | Damage of forest lands                                                                                |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |
|          |                                     | Increased flood damages forest lands and trees                                                        |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                     |

|  |                    |                                                                                              |                                                                                  |                                                                                                                                                                                                                                  |
|--|--------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Building structure | Destruction of the infrastructure and its operation                                          | <ul style="list-style-type: none"> <li>Impact on structural integrity</li> </ul> | <ul style="list-style-type: none"> <li>Incorporating flood-proofing measures, such as elevating the building above the expected flood level, installing flood barriers or valves, waterproofing the walls and floors,</li> </ul> |
|  | Utilities          | Increased water table level                                                                  | Pollution of water sources                                                       | <ul style="list-style-type: none"> <li>Improving water quality monitoring and management, such as installing sensors, filters, or disinfection systems</li> </ul>                                                                |
|  |                    | Increased incidence of water borne insects (mosquitos) and disease impacts on health quality |                                                                                  |                                                                                                                                                                                                                                  |
|  |                    | Loss of water quality - increased erosion of riverbanks and topsoil into water sources       |                                                                                  |                                                                                                                                                                                                                                  |



## Appendix M: Grievance Log and Action Form

### GRIEVANCE LOG AND ACTION FORM

#### Step 1: Grievance Received

Grievance No: \_\_\_\_\_

Date Received: \_\_\_\_\_

Grievance expressed by: \_\_\_\_\_

Grievance received by: \_\_\_\_\_

Forwarded to Grievance Contact (GC):

\_\_\_\_\_ Name \_\_\_\_\_ Date Forwarded

#### Step 2: Grievance Documented

Nature of Grievance:

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Response, Corrective Action, and Resolution/Content of Verbal Response

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Verbal Response Delivered

Date  
By whom?

Grievance Resolved?

☐ Yes, Acknowledgement by Complainant

☐ No, Complainant's Further Statement if any

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#### Step 3: Grievance Forwarded to EHS Management Team

Grievance Forwarded

Date

By whom?

Grievance Forwarded

Date

By whom?

Further Appropriate Actions:

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Investigation Report Prepared?

Date

By whom?

Document Number: \_\_\_\_\_

#### Step 4: Written Response Prepared by Grievance Contact

Grievance Response No:

Date

Grievance Reviewed

Date

By whom?

## Response and Resolution Summary

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Response Delivered \_\_\_\_\_ Date \_\_\_\_\_ By GC \_\_\_\_\_  
Grievance Resolved?

☐ Yes, Acknowledgement by Complainant

If Complaint Not Resolved:

### Step 5: Grievance Forwarded to Resolution Committee

Summary of Actions by GRC:

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Grievance Resolved?

☐ Yes, Acknowledgement by Complainant

If Complaint Not Resolved:

**Step 6: Forwarded to Legal Department** **Date**

\_\_\_\_\_ Received by Whom

Additional documents list

| Date of issue | Title of document | Remarks |
|---------------|-------------------|---------|
|               |                   |         |
|               |                   |         |
|               |                   |         |
|               |                   |         |