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NFA/C/2/23

12th 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 ECHUYA CENTRAL FOREST RESERVE, KAGANO VILLAGE, KALENGYERE PARISH, MUKO SUBCOUNTY, RUBANDA 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 Echuya 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 Echuya Central Forest Reserve is within the GPS coordinates shown in the table below;

Coordinates UTM coordinates (35M WGS 1984)		
Points	Eastings (m E)	Northings (m N)
AE	812675	9862271
BE	812596	9862353
CE	812696	9862394
DE	812714	9862320

The total project cost is estimated at US \$ 896,171.49 (Eight hundred ninety-six thousand one hundred seventy-one and forty-nine hundredths US Dollars only).

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


Stuart Maniragaha

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

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



Uganda Revenue Authority
ESTABLISHED 2005

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

1240009145315



Payment Registration Details

Tax Head	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 fees		
Base Value (in Ugx)	NA	Amount (in Ugx)	735,981.00
BPAF Serial Number	NA	Units	NA
Reference Number	991OEPD23332000G	Identity Proof Type	NA
Reference Date	NA	Identity Proof Number	NA

To be filled by taxpayer during payment at bank

Bank Name:	Bank Of Uganda
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CHEQUES ONLY		
Bank	Cheque No	Amount (Ugx)

Amount in words:	

BANK STAMP AND ENDORSEMENT

CASH ONLY	
Currency	Amount
50,000/=	
20,000/=	
10,000/=	
5,000/=	
2,000/=	
1,000/=	
500/=	
200/=	
100/=	
50/=	
20/=	
10/=	
5/=	
Total	

Signature :		Contact No. :	0800117000
Name of Signatory :	Marion Namunyolo	Search Code :	FTNHFG0ZHP50

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. You are advised to use search code provided on this Payment Registration Slip to track the status.



P. O. BOX 4909, KAMPALA, UGANDA
Plot 697 BISHOP ROAD, NAMIREMBE VILLAGE
ccelam@outlook.com www.ccelam.com

CONSTRUCTION MEASUREMENT AND COST CONSULTANTS

OUR REF: CCEL/VIC/ECH/REP3/Rev1

27th 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)

QUANTITY SURVEYOR REPORT ON CONSTRUCTION PROJECT INVESTMENT COST

Executive Summary

Client/Financiers	National Forestry Authority/World Bank Group
Project	Proposed Construction of a Visitor Information Centre Facility at Echuya Forest
Projected Investment Estimate	US \$ 896,171.49 (Inc. VAT)
Project Design Consultants	FBW Uganda Limited
Contact	fvanmarrewijk@fbwarchitecten.nl / f.vanmarrewijk@gmail.com

Introduction

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 Echuya 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 \$ 896,171.49 (United States Dollars Eight Hundred Ninety-Six Thousand One Hundred and Seventy-One and cents Forty-Nine) 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 \$ 896,171.49**

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	40,243.00			
2	Civil/Main Builder's Work	382,856.78			
3	Mechanical and Electrical costs	125,442.95			
4	External Works	66,600.00			
5	Provisional Sums	20,500.00			
6	Contingency	31,782.14			
7	Environmental & Social Management Costs	23,000.00			
SUB-TOTAL		690,424.87			
b.	Land acquisition costs				See Note 1
c.	Local Authority Charges				See Note 2
d.	NEMA Licencing Fees				See Note 3
e.	Professional Fees	69,042.49			See Note 4
	TOTAL ESTIMATED INVESTMENT COST (US \$)	759,467.36	136,704.13	896,171.49	
	GROSS FLOOR AREA:	468 Sq. Mtrs			

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

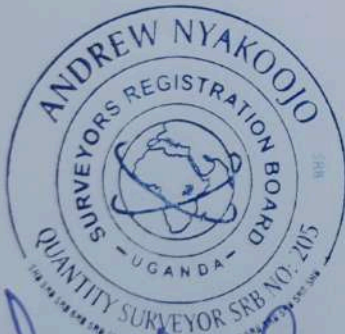
Note 3: NEMA licencing fees – to be determined by the End-User Entity.

Note 4: A percentage of 10% has been used for estimate purposes, as advised by 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.

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



Andrew Nyakoojo 27-09-2023

ANDREW NYAKOOJO.

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

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 Echuya Central Forest Reserve in Kagano Village, Kalengyere Parish,
Muko Sub - County, Rubanda District

Submitted By:



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

Development partners:



MINISTRY OF TOURISM, WILDLIFE & ANTIQUITIES



Prepared By:



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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 Proposed by the National Forestry Authority in Echuya Central Forest Reserve
Document Title	Environmental and Social Impact Assessment
Project Code	GEA 220109
Date	25 th September 2023
Project Proponent	National Forestry Authority
Project Team Representative	Stuart Maniraguha
Project Coordinator	Sylvia Tumusiime, Shallon Challenge

Administration /contact information

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Document Control

Document ID	GEA 220109 EIA	Contract No.	GEA 220109		
Client		Client address	National Forestry Authority Plot 10/20, Spring Road, P.O. Box 70863, Kampala - Uganda		
Rev	Date	Review details	Author	Quality Assurance	Approver
1	25/9/2023	Final	JN, KR, PKK, IT, IC,VK	HM	HM

Submission:

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

EXECUTIVE SUMMARY

E.1 Overview

The Government of Uganda (GoU) through the Ministry of Water and Environment (MoWE), with financial assistance from the World Bank (WB), is implementing the “Uganda: Investing in Forests and Protected Areas for Climate-Smart Development Project (IFPA-CD) in selected landscapes in Western Uganda. The project aims at transforming the Ugandan forestry sector and landscape for sustainable growth and economic and social benefits. The development objective of the project is to help Uganda improve sustainable management of forests and protected areas and to increase benefits to forest-dependent communities. As Uganda’s landscape is central to the tourism industry and overall economy, the project is intended both to increase ecosystem goods and services and generate more revenue from forests and protected areas. This will be achieved through financing infrastructure and equipment for management, protection, and development of key tourism infrastructure. In addition, the project is to invest in plantation forestry and wood value chains with the aim of enabling plantation forestry to become a strong and self-sustaining economic sector. This will be achieved by undertaking integrated interventions by the MoWE, Ministry of Tourism, Wildlife and Antiquities (MTWA), Uganda Wildlife Authority (UWA), National Forestry Authority (NFA), targeted District Local Governments (DLGs) and contracted Technical Service Providers (TSP).

The IFPA-CD Project investments will focus on 28 CFRs, 7 National Parks (NPs) and 4 Wildlife Reserves (WRs) which are ecologically sensitive areas. These protected areas are surrounded by communities whose economic activities are dominated by subsistence smallholder agriculture communities with significant dependence on natural resources in these protected areas. The project will support the GoU’s Vision 2040, which aims to transform Uganda into a modern and prosperous economy. It will contribute to the national development priorities stipulated in NDPIII especially enhancing value addition in Key Growth Opportunities during 2020 – 2024: project investments target to create jobs and increase revenues and incomes through value addition to Uganda’s tourism potential, wood value chains and other forest-based enterprises. Project support will cover tourism planning, diversification of and promoting tourism products, improving road and other access facilities in targeted project areas, private sector led tourism hospitality facilities, community led tourism investments, skilling manpower in tourism and other forest-based enterprises.

The project also aims to address the problem of increased vulnerability of economic productivity, biodiversity and livelihoods to the effects of climate change due to declining forestry ecosystems, goods and services. Building on the opportunities provided by forest and wildlife protected areas to mitigate climate change effects and build resilience of livelihoods and economy, the project aims to respond to some of these challenges through improving management and protection of forests, wetlands and wildlife protected areas, increasing opportunities for earning income and creating jobs from nature-based enterprises. The project responds to Uganda’s objectives set out in its Nationally Determined Contributions under the United Nations Framework Convention for Climate Change (UNFCCC) related to reversing the loss and degradation of forests and supporting their restoration. Forests play an important role in the resilience of local communities. Sustainable forest management, access to services and benefits from forests and wildlife PAs can help vulnerable communities to better absorb and adapt to the impacts of shocks and stressors among them, climate change. Project interventions will also enhance ecosystem services from the landscape, for example, watershed protection.

The project has 4 components summarized as follows:

- a) Component 1: will focus on improving management of government-managed forest and wildlife PAs to ensure they can continue to generate revenues and provide important environmental services.

- b) Component 2: will increase revenues and jobs from these forest and wildlife PAs through targeted investments in tourism and productive forests.
- c) Component 3: will encourage establishment of greater tree cover in refugee-hosting landscapes on host community land outside PAs, supporting sustainable forest management and landscape resilience on private and customary land.
- d) Component 4: will support overall project management and monitoring.

Echuya CFR has been selected among the Central Forest Reserves (CFRs) for the development of key tourism infrastructure under component 2 of the project specifically sub component 2.1 (Investments in Tourism). This subcomponent, implemented by NFA, will invest in tourism infrastructure and products in 3 CFRs in the project area. Although the individual Forest Management Plans (FMPs) of CFRs already identify some investment priorities, the project will rely on a more informed and comprehensive process (by the marketing, planning, and product development specialists) to define and plan investments that can achieve the aim of adding value to the tourist experience and helping Uganda reach and sustain new and more diverse markets. Direct investments will fall into two broad categories: (a) tourist reception, information, and interpretive facilities and (b) infrastructure for new (or improving existing) tourist products and activities. It is expected that investments in the infrastructure for tourist products and activities will increase climate resilience of target protected areas as well as communities involved in these tourism activities. The VICs will be used to improve the visitor experience in the PAs and to encourage visitors to stay longer at each site.

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 Environmental Health and Safety Guidelines (EHSGs).

E.2 The project

The planned Visitor Information Centre 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 Central Forest Reserve 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 UTM coordinates (36N WGS 1984)		
		Point	Easting (m E)	Northing (m N)
Echuya Central Forest Reserve	NFA sector offices at Kagano Village, Kalengyere Parish, Muko Sub – County, Rubanda District	A _E	812675	9862271
		B _E	812596	9862353
		C _E	812696	9862394
		D _E	812714	9862320



Figure E.1: Site plan for the Echuya Visitor Information Centre



Figure E.2: Artistic impression of the Echuya Visitor Information Centre

E.2 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 and socio-cultural environment;
- b) Assess impacts on infrastructure and social amenities (traffic, drainage, water supply);
- c) Identify and predict impacts on and changes in development policy with respect to the area; and
- d) Formulate an Environmental and Social Management Plan (ESMP).

E.3 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.4 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) and the World Bank Environmental and Social Standard 1 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.5 Environment and Socio-Economic Baseline

Climate

The Echuya Central Forest Reserve experiences tropical climate with annual rainfall range of 1,400 -1900mm and annual mean temperature range from minimum of 7-15°C and maximum 20-26°C. The forest receives two rainfall peaks between March to May and September to November with a severe dry spell during December-February and a mild dry weather occurs between June and August.

Topography

The relief of Rubanda district ranges between 1,200m to 3000m above sea level, with the highest points being to the western and southern parts of the district. The Echuya Central Forest Reserve lies on an altitudinal range of 2270- 2570m on a high ridge running between Lake Bunyonji and Muhavura Lava plains. The Large Muchuya swamp draining north runs in the centre of the Forest Reserve. The Echuya Central Forest Reserve represents the highest point on both sides of Rubanda and Kisoro district; the general topographical feature of the area is steep slope, as evidenced by frequent sharp bends along the Kabale – Kisoro Road

Geology and soils

The forest lies on earth crust rocks which are generally phyllites, and shales of the Ankole-Karagwean system. The soils are predominantly humic red loams, moderately acidic and deficient of bases. This soil is also dark, weakly structured or structure less loose and friable when it dries up and therefore very susceptible to erosion. The project area mainly consists of volcanic soils.

Flora

The trees within the site are dominated by; *Croton megalocarpus*, *Croton macrostachyus*, *Olaea europea*, *Polyscias fulva*, and *Antiaris toxicaria*. Rubanda districts comprises of two vegetation zones which include; high altitude forest and forest/savannah mosaic

Fauna

Echuya has moderate mammal diversity. From the site records, diurnal primates known include; Chimpanzee *Pan troglodytes* (Critically Endangered), Black and White Colobus *Colobus guereza*, Red-tailed Monkey *Cercopithecus Ascanius*, L'Hoest's Monkey *Cercopithecus lhoesti*, Blue Monkey *Cercopithecus mitis* and Olive Baboon *Papio Anubis*.

Bird activity around the site captured species such as; Mountain Oriole *Oriolus percivali*, Great blue Turaco *Corythaeola cristata*, White-stirred Robin *Pogonocichla stellate*, Sharpe's Starling *Poeoptera sharpi*, Banded Prinia *Prinia bairdii*, and Red-throated Alethe *Chamaetylas poliophrys*.

Population

The population of the district was estimated at about 196,896 people, with an annual population growth rate of 1.1%. Rubanda District is densely populated with an area of 660.2 square kilometres, the population density in the District as estimated by the 2014 housing and population census is at 298.2 people per km².

Health facilities

Rubanda district health system comprises of 10 facilities of which 2 are Health Centre IVs and 8 are Health Centre IIIs. From consultations made at Rubanda District Local Government, the project area is served by Muko Health Centre II.

Educational facilities

Rubanda district has a total of 110 primary schools, about 8 government aided secondary schools, 5 private secondary schools. There is a primary school to the North of the project site at approximately one kilometre – Muko Primary School. There is also a secondary school known as Muko Secondary School.

Cultural setting

The Batwa are the indigenous people in the EFR and hold strong social and cultural attachments to the forest. Batwa resettlement programs with Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBIFCT) and United Organisation for Batwa Development in Uganda (UOBDU) projects have been transforming Batwa culture and social setup by integrating their livelihoods with neighbouring communities of Bakiga and Bafumbira. Some of social cultural sites within Echuya Central Forest Reserve include:

- a) **The Batwa Cultural Trail:** This is a guided walk through the forest that showcases the traditional lifestyle and culture of the Batwa pygmies, the indigenous people who used to live in the forest before they were evicted. The trail offers a chance to learn about the Batwa's history, beliefs, skills, and challenges, as well as to interact with them and support their livelihoods.
- b) **The Muchuya Swamp:** This is a high-altitude swamp that lies within the forest and is home to a variety of wildlife, especially birds. The swamp is also a sacred site for the local communities, who believe that it has spiritual powers and healing properties. The swamp is also a source of water and medicinal plants for the locals.
- c) **The Echuya Forest Community Campsite:** This is a community-run campsite that offers accommodation and services to visitors who want to explore the forest and its surroundings. The campsite is located near the forest edge and has a panoramic view of Lake Bunyonyi and the Virunga volcanoes. The campsite also provides opportunities for visitors to engage in cultural activities, such as dancing, storytelling, cooking, or crafts with the local communities.

Transport infrastructure

Rubanda district is generally well served with road network although some of them are unmotorable during the rainy season. The total network of feeder roads in the District is 1,267.1 km. Kabale-Kisoro tarmac road is a major access to Echuya CFR, running almost east-west through the reserve in the northern part

E.6 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.

E.7 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 Central Forest Reserve), design and layout alternatives, establishment of a digital Visitor Information Central, 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.8 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
Enhancement: <ol style="list-style-type: none"> 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. 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 				
8.2.2	Technological transfer	Workers, Communities	Moderate and medium term	Moderate, positive, irreversible impact
Enhancement: <ol style="list-style-type: none"> 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 Documenting the establishment of the Visitor Information Centre 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. 				
8.2.3	Introduction of invasive species	Biota Surface and/or groundwater Communities	Low and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> The proponent shall use clean, coarse fill material for grading to reduce the potential for introducing or spreading non-native, or invasive plant species Manual control of invasive species shall be implemented at the site. Establish a monitoring and information system for invasive species to support planning and management. Landscaping and establishment of the arboretum shall use indigenous species The proponent shall enhance ongoing programs to combat invasive species within the Central Forest Reserve 				
8.2.4	Impact of particulate, fugitive and vehicular exhaust emissions	Atmosphere Workers Communities Biota	Low and immediate	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> Scheduling construction activities for periods when wind speeds are low Employing dust suppression techniques like water sprinkling at the site Fencing the site to reduce wind-induced re-entrainment of dust particles Covering trucks hauling debris and excavation spoil to curtail dust emissions during transportation 				

Ref	Impact	Receptors	Magnitude and duration	Significance
5. Selecting an appropriate disposal site such as to limit the distance travelled and disruption to the receptor communities				
8.2.5	Occupational Health and Safety risks	Workers Communities	Moderate and immediate	Moderate, negative, irreversible impact
<p>Mitigation:</p> <ol style="list-style-type: none"> All excavation work and lifting shall be supervised by a competent person and operatives doing the work shall be given clear instructions; Sides of excavations shall be thoroughly inspected: <ul style="list-style-type: none"> daily, before each shift and after an interruption in work of more than one day; after an unexpected fall to the ground; after substantial damage to supports; after heavy rain; when boulder formations are encountered. 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; 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"> the proper storage of materials and equipment; the removal of scrap, waste and debris at appropriate intervals 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. 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 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"> adequate safety nets or safety sheets shall be erected and maintained, or adequate safety harnesses shall be provided and used. 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. All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> avoid the risk of fire; quickly and efficiently control any outbreak of fire; bring about a quick and safe evacuation of persons Smoking shall be prohibited and "NO SMOKING" notices shall be prominently displayed in all appropriate locations within the subject site 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. Provision of appropriate Personal Protective Equipment to all workers. 				

Ref	Impact	Receptors	Magnitude and duration	Significance
13. All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site				
8.2.6	Solid waste generation	Surface and/or groundwater Workers Communities Biota	Low and immediate	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements Recycle construction materials from the existing structures where possible Establish adequate gender-segregated sanitary facilities for all workers and visitors to the site Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site Hire a licensed hazardous waste handler to remove and dispose of hazardous waste materials Train construction workers on proper waste management practices Cover trucks ferrying debris from the site to mitigate spillages during transportation Site stockpiles of debris away from storm water paths 				
8.2.7	Climate change impacts	Atmosphere Surface and/or groundwater Workers Communities Biota	Low and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 Open incineration of waste at the site shall be strictly prohibited All plastic waste generated at the site shall be collected in such a manner as to allow it to be recycled The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site 				
8.2.8	Visual impacts	Communities	Low and immediate	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> Completely fence off the site during the site preparation phase Start landscaping and replanting ornamental trees as soon as it is reasonable to restore the visual appeal of the site Schedule excavation works for January to March when the visitor numbers are low 				
8.2.9	Impacts on water resources	Surface and/or groundwater Communities	Minor and immediate	Low, negative, reversible impact

Ref	Impact	Receptors	Magnitude and duration	Significance
		Biota		
Mitigation: <ol style="list-style-type: none"> 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. All stock piles of materials or waste shall be situated away from paths of storm water The drainage channels around the construction site shall be desilted regularly The contractor shall maintain emergency spill kits at the site in the event of a significant oil spill 				
8.2.10	Fire hazards	Atmosphere Workers Communities Biota	Low and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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. All workers on site shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid. Emergency contacts shall be conspicuously displayed within all sections of the site A legible site map indicating evacuation routes and assembly points shall be displayed within all sections of the site. A high-pressure water line shall be established at the site for use by emergency services in the event of major fires All workers shall at all times wear high-visibility clothing All combustible materials including waste shall be kept away from fuel, acetylene gas storage A smoking area away from fuel and other combustible material shall be established. "No smoking" shall be displayed in areas where smoking is prohibited 				
8.2.11	Impacts of an increase in traffic	Atmosphere Workers Communities Biota	Low and immediate	Moderate, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> Inform and sensitize the community in advance of the anticipated impacts on traffic and roadways during the construction phase. Transport of construction materials should be scheduled for off-peak traffic hours. This will reduce the risk of traffic flow disruptions on Kabale - Kisoro road. Appropriate traffic warning signs shall be placed along Kabale - Kisoro road to inform road users of trucks turning ahead and instruct them to reduce speed. Loading of transportation trucks shall be within the permissible limits (guidelines) for Uganda National Roads Authority (UNRA) axel loads for the targeted roads. Debris and excavation shall be properly covered during transportation from the site to prevent spillage during transportation The trucks shall be parked on the proposed site until they are offloaded. Heavy equipment shall be transported early morning (12 am – 5 am) with proper pilotage. 				

Ref	Impact	Receptors	Magnitude and duration	Significance
8.	The use of flagmen shall be employed to regulate traffic flow.			
9.	Training and sensitization of personnel (drivers) in road safety and traffic regulations shall also be done by road contractors.			
8.2.12	Impact on ambient noise	Workers Communities Fauna	Moderate and immediate	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> All construction and excavation shall be restricted to the day-time only The proponent shall ensure that the noise emitted is within the permissible noise levels per the National Environment (Noise Standards and Control) Regulations, 2003 Equipment with the lowest noise rating shall be used where feasible NRMM such as generators shall be fitted with mufflers, enclosures and any other damping material to reduce their noise emission All machinery used on site shall be promptly serviced and maintained. Maintenance of old equipment can reduce noise levels by 50% Sound-absorbing barriers like plywood shall be erected around the site and noise equipment All Non-Road Mobile Machine and vehicles shall be shut down when not in use All workers shall be provided with the appropriate Personal Protective Equipment such as earmuffs or plugs to protect them from noise levels above 85 dBA 				
8.2.13	Impacts related to population influx	Communities Biota	Minor and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> Workers shall undergo training on social ethics and safe sex practices to curtail the spread of HIV/AIDS and other STDs A grievance redress mechanism shall be established to amicably resolve any grievances between the community and workers on site 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 				
8.2.14	Loss of vegetation and terrestrial habitat alteration	Surface and/or groundwater Biota	Low and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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. 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; 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; 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; 				

Ref	Impact	Receptors	Magnitude and duration	Significance
5.	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.			
8.2.15	Poaching	Communities Fauna	Minor and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 1. Implement strict control over firearms and other weapons to prevent them from falling into the hands of poachers. 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. 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. 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. 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 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 Echuya Central Forest Reserve sector management to share information and coordinate anti-poaching efforts during the construction phase. 				
8.2.16	Animal abuse	Fauna	Minor and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 1. Appropriate signage shall be put up at the Visitor Information Centres instructing drivers to observe safe driving guidelines under the Traffic and Road Safety Act and those in force within the Central Forest Reserve (for example speed limits and no hooting) 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 3. A game ranger shall be retained at the site at all times to handle problem animals 4. All incidences of attacks on animals or workers shall be reported to the proponent 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 Communities Biota	Minor and immediate	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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 Central Forest Reserve. 				

Ref	Impact	Receptors	Magnitude and duration	Significance
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, National Environment Management Authority, 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			

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

Ref	Impact	Receptors	Magnitude and duration	Significance
8.3.1	Tourism boost	Communities Tourism sector	High and long term	Moderate, positive, irreversible impact
Enhancement:				
<ol style="list-style-type: none"> 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 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 				
8.3.2	Enhanced visitor experience	Communities Visitors Tourism sector	Very high and long term	High, positive, irreversible impact
Enhancement:				
<ol style="list-style-type: none"> The staff at the VIC shall be extensively trained in hospitality, information dissemination, interpretation and quality assurance The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant 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 				
8.3.3	Socio-economic benefits	Communities	High and long term	High, positive, irreversible impact
Enhancement:				
<ol style="list-style-type: none"> 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 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 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 				

Ref	Impact	Receptors	Magnitude and duration	Significance
8.3.4	Security risks	Employees Visitors Communities	Low and long term	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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 2. Signage instructing all personnel to safeguard their personal belongings at all times shall be displayed within all sections of the VIC 3. The VIC will be kept under CCTV surveillance, 24/7; the CCTV system shall have remote access capabilities 4. The proponent shall provide ample security at the VIC to tackle any threats to life and property 5. The security personnel at the VIC shall be instructed to use desist from unlawful acts such as torture, excessive force, extortion, etc. 6. The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals 7. The proponent shall adhere to any guidance issued by security organs i.e. Uganda Police Force, Interpol, UPDF etc. 				
8.3.5	Occupational Safety and Health risks	Employees Visitors Communities	Low and long term	Moderate, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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; 2. Medical pre-selection of employees to ensure that they are fit to work in these environments; 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; 4. Workrooms shall have enough free space to allow people to move about with ease; 5. The workplace, and certain equipment, devices and systems shall be maintained in efficient working order (efficient for health, safety and welfare) 6. There shall be sufficient traffic routes, of sufficient width and headroom, allowing people and vehicles to circulate safely and with ease 7. Set appropriate speed limits, and make sure they, and any other traffic rules, are obeyed; 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; 9. Cleaning and the removal of waste shall be carried out as necessary by an effective method. Waste shall be stored in suitable receptacles. 10. Doors and gates shall be suitably constructed and fitted with safety devices if necessary; 11. Suitable and sufficient sanitary conveniences and washing facilities shall be provided at readily accessible places; and 12. An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, shall be provided 13. The employees at the VIC shall be provided with the appropriate PPE considering the hazards they are occupationally exposed to 				

Ref	Impact	Receptors	Magnitude and duration	Significance
	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 15. A fully stocked first aid box shall be maintained at the site at all times 16. All employees shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site			
8.3.6	Fire risks	Atmosphere Biota Employees Visitors Communities	Low and long term	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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. All staff shall be periodically trained in emergency response including firefighting techniques, hazard identification, reporting, evacuation and first aid. Emergency contacts shall be conspicuously displayed within all sections of the VIC Legible maps indicating evacuation routes and assembly points shall be displayed within all sections of the VIC. 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 All combustible materials including waste shall be kept away from fuel, sources of heat and ignition 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 Communities	Low and long term	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> 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 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 The proponent shall institute good sanitation practices and encourage employees to strictly observe good personal hygiene The proponent shall encourage employees to get rabies pre-exposure vaccination Visitors and workers shall avoid physical contact with the animal species as much as possible; unless the physical contact is sanctioned by the proponent 				
8.3.8	Solid waste generation	Surface and/or groundwater Employees Communities Biota	Low and long term	Low, negative, irreversible impact

Ref	Impact	Receptors	Magnitude and duration	Significance
Mitigation: <ol style="list-style-type: none"> All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements Well-labelled bins shall be placed at all sections of the building, these will aid in the segregation of waste Legible signage showing where each type of waste shall be disposed of shall be put up in all sections of the VIC The waste receptacles shall have well-secured lids to prevent animals from accessing the discarded materials 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 				
8.3.9 Climate Related Impacts				
8.3.9.1	Impacts on Climate Change	Atmosphere Communities Biota	Low and long term	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 Recycling of non-biodegradable waste other than open incineration shall be encouraged to reduce the release of greenhouse gases and particulate matter. All plastic waste generated at the VIC shall be collected in such a manner as to allow it to be recycled The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site 				
8.3.9.2	Climate change impact on the project	VIC components Employees Visitors	Low and long term	Moderate, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> 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. 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. Adopting sustainable landscaping practices that support native flora and fauna will enhance the resilience of the surrounding environment to climate change. 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. 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. 				
8.3.10	Impacts on air quality	Atmosphere	Low and long term	Low, negative, reversible impact

Ref	Impact	Receptors	Magnitude and duration	Significance
		Employees Communities Biota		
Mitigation: <ol style="list-style-type: none"> The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 Open incineration of waste at the VIC shall be strictly prohibited The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated All vehicles and machines shall be shut down when not in use Solar, LPG gas or eco-friendly briquettes shall be used in the kitchen Cleaning operations that minimize the emission or resuspension of particulate matter shall be prioritized for example, the use of vacuuming over sweeping 				
8.3.11	Loss of cultural identity	Communities	Low and long term	Low, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> The proponent shall engage the relevant stakeholders to identify how local cultural heritage may be incorporated into or affected by the VIC The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant The proponent shall implement a grievance redress mechanism to amicably resolve any adverse cultural impacts or any forms of misrepresentation 				
8.3.12	Risk of oil and fuel spills	Surface and/or groundwater Workers Communities Biota	Low and long term	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> 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 The proponent shall maintain spill kits at the VIC in the event of significant oil spills Contaminated soil from a significant oil spill shall be stored in a secure drum and disposed of by a licensed waste handler 				
8.3.13	Traffic disruption	Atmosphere Employees Communities Biota	Low and long term	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> 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 				

Ref	Impact	Receptors	Magnitude and duration	Significance
	<ol style="list-style-type: none"> 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) The proponent shall develop a traffic management plan to address the increase in traffic during the peak season The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals 			
8.3.14	Dependence on tourism-related activities	Local community Cultural institutions	Minor and Medium-term	Low, Negative, Irreversible impact
Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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. 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. 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. 				
8.3.15	Decay of marriage and sexual norms	Local community	Minor and Medium-term	Low, Negative, Irreversible impact
Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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 				
8.3.16	Impact on child rearing norms and family structures	Local community	Low and Medium-term	Low, Negative, Irreversible impact
Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts Efforts could be made to ensure that economic opportunities generated by tourism are distributed in a way that is compatible with the local's traditional values and practices. 				
8.3.17	Shift in balance of power	Local community Cultural institutions	Low and Short-term	Low, Negative, Irreversible impact
Mitigation:				

Ref	Impact	Receptors	Magnitude and duration	Significance
	<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Efforts could be made to promote the importance of traditional leadership and governance systems. This could involve working with the locals to integrate traditional systems of governance into formal decision-making processes, or supporting the development of programs that promote the importance of traditional knowledge 			
8.3.18	Impact on traditional systems of healing	Local community	Minor and Long-term	Low, Negative, Irreversible impact
	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Involve the locals in establishing herbal demonstration sites outside the Forest Reserve. 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
	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. The locals shall be fairly compensated for their participation in tourism initiatives, including benefit-sharing schemes and fair wages for employees. 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. 4. Efforts could be made to promote cultural awareness and understanding between different social groups within the local community 			
8.3.20	Impact of commercialization of culture	Local community Cultural institutions	Low and Medium-term	Low, Negative, Irreversible impact
	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Design and implement activities that take into account the need for integrating conservation friendly cultural values of the local people into PA management 3. The proponent shall respect the intellectual property rights of the creators and custodians of cultural products. 4. Efforts could also be made to ensure that the commercialization of the local culture is done in a responsible and sustainable manner like cultural sensitivity training 5. 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 6. Efforts could be made to empower the local community to control the representation and sharing of their cultural heritage. 			
8.3.21	Cultural preservation	Local community Cultural institutions	Very High and Long-term	High, Positive, Irreversible impact
	Enhancement:			

Ref	Impact	Receptors	Magnitude and duration	Significance
	<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. 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. 3. 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. 			
8.3.22	Community development	Local community	Very High and Long-term	High, Positive, Irreversible impact
	Enhancement: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Create and provide gender balanced employment opportunities such as tour guides, porters, boundary management 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; 4. For ecotourism activities, prioritize local community member's employment as tour guides considering their unique local and cultural knowledge 			
8.3.23	Enhancing education and awareness	Local community	Very High and Long-term	High, Positive, Irreversible impact
	Enhancement: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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. 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 4. VICs shall provide accurate and up-to-date information, as well as high-quality educational materials such as brochures, maps, and multimedia displays. 			

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 Communities	Moderate and immediate	Moderate, negative, irreversible impact
Mitigation: <ol style="list-style-type: none"> All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site The decommissioning crews shall be inducted and trained on the safety measures and guidelines and observed while at the site All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> avoid the risk of fire; control quickly and efficiently any outbreak of fire; bring about a quick and safe evacuation of persons Smoking shall be prohibited and "No Smoking" notices be prominently displayed in all appropriate locations within the subject site. Additionally, smoking zones shall be gazetted for those who intend to smoke. 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. Provision of appropriate PPE to all workers. 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"> adequate safety nets or safety sheets shall be erected and maintained; or adequate safety harnesses shall be provided and used 				
8.4.2	Waste generation	Surface and/or groundwater Workers Communities Biota	Low and immediate	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements at the time of decommissioning Establish adequate gender-segregated sanitary facilities for all workers at the decommissioning site Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site Hire a licensed hazardous waste handler to remove and dispose of any hazardous substances Train the decommissioning workers on proper waste management practices Cover trucks ferrying debris from the site to curtail fugitive emissions during transportation Site stockpiles of debris away from storm water paths 				

Ref	Impact	Receptors	Magnitude and duration	Significance
8.4.3	Visual impacts	Visitors Workers Communities Biota	Low and immediate	Low, negative, reversible impact
Mitigation: <ol style="list-style-type: none"> 1. Completely fence off the site during the decommissioning phase 2. Start restoration activities as soon as it is reasonable to restore the visual appeal of the site 3. Schedule decommissioning for periods when the visitor numbers are low 				
8.4.4	Restoration of the disturbed environment	Biota	High and immediate	Moderate, positive, reversible impact
Enhancement: <ol style="list-style-type: none"> 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 				

E.9 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.9 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 Organizations
CFM:	Collaborative Forest Management
CFR(s):	Central Forest Reserve(s)
DLGs:	District Local Governments
EHSGs:	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
IIPA:	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

- Best practices:** 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.
- Branding:** 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.
- Concession; concessionaires:** 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).
- Cultural heritage:** 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.
- Ecotourism:** Responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.
- Local (or host) community:** 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.
- Sustainable tourism:** 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.
- Tourism:** 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.
- Tourist:** Any visitor whose trip to a protected area includes an overnight stay.
- User fees:** 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).
- Visitor:** 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.

Visitor use:	Any use made of the protected area by a visitor during his/her stay.
Visitor hours:	The total length of time, in hours, that visitors stay in the protected area.
Visitor management:	The process of tracking visitor usage in a protected area
Visitor carrying capacity:	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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However, while acknowledging the contributions and support received during the course of the study, the EIA Team 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 Echuya Central Forest Reserve

ON BEHALF OF THE NATIONAL FORESTRY AUTHORITY

Signed:

Dated: 25th 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:

- a) 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.
- b) The project team has extensive experience in conducting ESIA's and ESMP's for similar projects that meet in-country requirements as well as international policies, standards and guidelines;
- c) The social experts have extensive experience in social research, baseline surveys and Social Impact Assessments (SIAs);
- d) 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
Harriet MUJUNI Certified Environmental Practitioner	Environmental and Social Safeguards Specialist Legal Expert (ESIA Team Lead)	<ul style="list-style-type: none"> - Collation, analysis and review of policies, legal and administrative frame works - Baseline desktop studies - Review of specialist reports - Impact analysis and evaluation - Development of monitoring and management plans - Heritage and Chance Finds - Social Assessment - Drafting of Scoping and EIA reports
Irene TUHAISE Certified Environmental Practitioner	Health/Safety Expert	<ul style="list-style-type: none"> - Hazard assessment - Risk assessment - Health and safety risk assessment - Health and safety impact identification, assessment and provision of mitigation measures - Infrastructure architecture and engineering
Julius NSEREKO Certified Environmental Practitioner	Environmental engineer Noise Modelling; Water, Wastewater and Sanitation Expert	<ul style="list-style-type: none"> - Infrastructure architecture and engineering - Baseline ambient noise study - Noise impact evaluation - Noise dispersion modelling and develop a Noise Monitoring Programme - Water, Wastewater, Sanitation - Analysis of Project alternatives - Transportation Impacts and Traffic Management - Impact Analysis - EIA report writing
Samuel MUTEBI Certified Environmental Practitioner	Ecologists / Land use / Flora / Wildlife	<ul style="list-style-type: none"> - Classification of existing vegetation - Flora inventory - Taxonomy and classification of existing fauna life
Richard SSEMANDA Michael Opige ODUL		<ul style="list-style-type: none"> - Fauna Inventory - Report on ecological findings

Name	Specialization/position	Assigned task
Ronald KYOMUHENDO	Emissions & Air Dispersion Modelling Expert GIS Mapping / Remote Sensing Services Engineering (General)	<ul style="list-style-type: none"> - Baseline Ambient Air Monitoring - Air quality evaluation - Emission & Air Dispersion Modelling - Soil / Land use / Land Cover - Design Assessment - Map Production - EIA report writing
Peacekinz K. KWEEZI	Energy Engineer Water, Waste & Sanitation Health & Safety Geological Assessment	<ul style="list-style-type: none"> - Climate change impacts - Energy design considerations - Waste water - Health & Safety - Soil/ Land use / Land cover
Virginia KABATANA	Civil Engineer	<ul style="list-style-type: none"> - Structural analysis - Review of architectural drawings - Traffic Impact Assessment
Isaiah CULA	Social Lead Study Coordination	<ul style="list-style-type: none"> - Specialist Reports Lead - Social Impact Assessment - Stakeholder Consultations Lead
Hilda NAMITALA	Social Lead	<ul style="list-style-type: none"> - Baseline data collection - Social Impact Assessment - Stakeholder Consultations - Co-ordination of Public Participatory Process
David KALANZI	Archaeologist (Physical and Cultural)	<ul style="list-style-type: none"> - Archaeological and Cultural Heritage

1.0 INTRODUCTION

This report presents the Environmental and Social Impact Assessment for the proposed construction of a tourist reception, information and interpretive facility herein referred to as a “*Visitor Information Centre*” (VIC) to be located in Echuya Central Forest Reserve (ECFR) at the National Forestry Authority (NFA) sector offices at Kagano Village, Kalengyere Parish, Muko Sub County in Rubanda District. The report has been jointly prepared by *Gissat LLP* as a firm of EIA experts and *FBW Architects & Engineers* the Project Design Team based on terms of reference (TORs) approved by the National Environment Management Authority (NEMA). The objective of the ESIA is to identify impacts that the project may have on the biophysical and socio- economic environment making reference to the baseline conditions prior to the project implementation.

1.1 Background

Uganda is referred to as the “*Pearl of Africa*” because of its diverse natural endowments and beauty as described by Winston Churchill. The country boasts of; 12 National Parks and 3 Game Reserves, 12 Wildlife Reserves, 10 Wildlife Sanctuaries, 5 Community Wildlife Management Areas and; 529,595 hectares under total Forest Reserves each with unique endowments (*UBOS, 2023*). Uganda is also the primate Capital of the World. It has the largest mountain gorilla population (53%; about 459 of them) in the world. Less than 900 mountain gorillas survive in the world today. There are over 5,000 chimpanzees found in Uganda (Kibale Forest National Park (KFNP) alone holds a population of more than 1,000 chimpanzees). The country is also home to the world’s largest number of monkeys, baboons, rare colobus, nocturnal Bush babies and Pottos found in pristine eco-environment. More than 1,083 bird species can be found in Uganda. Studies estimate about 50 percent of all the bird species in Africa and 10 percent of all birds in the world are found in Uganda. The forests and wildlife of the Albertine landscape are particularly important for tourism, as they attract more than 80 percent of the leisure tourists in Uganda for wildlife safaris, bird-watching tours, and gorilla and chimpanzee tracking.

Over the years, the Government of Uganda (GoU) has prioritized tourism development in the country in a bid to achieve social economic development. The National Development Planning Frameworks recognize the importance of tourism development in transforming Uganda into a modern state and have highlighted Tourism as a Primary growth sector (NDP III). Nature-based tourism has been identified as a key growth sector in the National Development Plan III (2020/21 – 2024/25). Tourism exports have been growing in recent years, generating UGX 4,580.4 billion in 2019 from inbound tourism (*UBOS, 2023*) and providing 1.17 million jobs (8 percent of total employment). Travel and tourism are forecast to rise to 8 percent of GDP by 2027.

Although this is so, Uganda’s natural forests are being lost and degraded at one of the highest rates in the world despite their importance for tourism and the role they play in supporting other natural resource-based activities. The total net loss of Uganda’s forests during 2000–2015 was estimated at 1.8 million ha, equivalent to an average annual loss rate of 4 percent.

In addition, Uganda, like the rest of the world is vulnerable to climate change and its impacts are already being experienced in the region. There are increased occurrences of drought conditions and reduced or more variable rainfall across much of the country which is affecting agriculture, livestock and human health.

Environmental degradation which is partly responsible for severity of local climate change effects, poses significant challenges to Uganda’s economic growth and to livelihoods, especially those of the poorest and vulnerable groups, particularly women. There is also under-investment and lack of integrated tourism-related planning which are major constraints to fully realizing the economic potential of Uganda’s natural endowments. Opportunities to

link wildlife attractions and ecotourism in PAs to nearby cultural or community-based goods and service providers are missed and tourism products and infrastructure within the PAs are limited and have not really changed for many years.¹

In order to conserve and sustain forest cover and counter all these climate-change related impact, there is need to improve sustainable management of forests and protected areas and increase benefits to communities from forests in target landscapes.

1.2 Uganda Investing in Forests and Protected Areas for Climate Smart Development

The Government of Uganda (GoU) through the Ministry of Water and Environment (MoWE), with financial assistance from the World Bank (WB), is implementing the “Uganda: Investing in Forests and Protected Areas for Climate-Smart Development Project (IFPA-CD) in selected landscapes in Western Uganda. The project aims at transforming the Ugandan forestry sector and landscape for sustainable growth and economic and social benefits. The development objective of the project is to help Uganda improve sustainable management of forests and protected areas and to increase benefits to forest-dependent communities. As Uganda’s landscape is central to the tourism industry and overall economy, the project is intended both to increase ecosystem goods and services and generate more revenue from forests and protected areas. This will be achieved through financing infrastructure and equipment for management, protection, and development of key tourism infrastructure. In addition, the project is to invest in plantation forestry and wood value chains with the aim of enabling plantation forestry to become a strong and self-sustaining economic sector. This will be achieved by undertaking integrated interventions by the MoWE, Ministry of Tourism, Wildlife and Antiquities (MTWA), Uganda Wildlife Authority (UWA), National Forestry Authority (NFA), targeted District Local Governments (DLGs) and contracted Technical Service Providers (TSP).

The IFPA-CD Project investments will focus on 28 CFRs, 7 National Parks (NPs) and 4 Wildlife Reserves (WRs) which are ecologically sensitive areas. These protected areas are surrounded by communities whose economic activities are dominated by subsistence smallholder agriculture communities with significant dependence on natural resources in these protected areas. The project will support the GoU’s Vision 2040, which aims to transform Uganda into a modern and prosperous economy. It will contribute to the national development priorities stipulated in NDPIII especially enhancing value addition in Key Growth Opportunities during 2020 – 2024: project investments target to create jobs and increase revenues and incomes through value addition to Uganda’s tourism potential, wood value chains and other forest-based enterprises. Project support will cover tourism planning, diversification of and promoting tourism products, improving road and other access facilities in targeted project areas, private sector led tourism hospitality facilities, community led tourism investments, skilling manpower in tourism and other forest-based enterprises.

The project also aims to address the problem of increased vulnerability of economic productivity, biodiversity and livelihoods to the effects of climate change due to declining forestry ecosystems, goods and services. Building on the opportunities provided by forest and wildlife protected areas to mitigate climate change effects and build resilience of livelihoods and economy, the project aims to respond to some of these challenges through improving management and protection of forests, wetlands and wildlife protected areas, increasing opportunities for earning income and creating jobs from nature-based enterprises. The project responds to Uganda’s objectives set out in its Nationally Determined Contributions under the United Nations Framework Convention for Climate Change (UNFCCC) related to reversing the loss and degradation of forests and supporting their restoration. Forests play an important

¹ Ministry of Water and Environment 2015. *Uganda’s Intended Nationally Determined Contribution.*

role in the resilience of local communities. Sustainable forest management, access to services and benefits from forests and wildlife PAs can help vulnerable communities to better absorb and adapt to the impacts of shocks and stressors among them, climate change. Project interventions will also enhance ecosystem services from the landscape, for example, watershed protection.

The project has 4 components summarized as follows:

- e) Component 1: will focus on improving management of government-managed forest and wildlife PAs to ensure they can continue to generate revenues and provide important environmental services.
- f) Component 2: will increase revenues and jobs from these forest and wildlife PAs through targeted investments in tourism and productive forests.
- g) Component 3: will encourage establishment of greater tree cover in refugee-hosting landscapes on host community land outside PAs, supporting sustainable forest management and landscape resilience on private and customary land.
- h) Component 4: will support overall project management and monitoring.

Echuya CFR has been selected among the PAs for the development of key tourism infrastructure under component 2 of the project specifically sub component 2.1 (Investments in Tourism). This subcomponent, implemented by NFA, will invest in tourism infrastructure and products in 3 CFRs in the project area. Although the individual Forest Management Plans (FMPs) of CFRs already identify some investment priorities, the project will rely on a more informed and comprehensive process (by the marketing, planning, and product development specialists) to define and plan investments that can achieve the aim of adding value to the tourist experience and helping Uganda reach and sustain new and more diverse markets. Direct investments will fall into two broad categories: (a) tourist reception, information, and interpretive facilities and (b) infrastructure for new (or improving existing) tourist products and activities. It is expected that investments in the infrastructure for tourist products and activities will increase climate resilience of target protected areas as well as communities involved in these tourism activities. The VICs will be used to improve the visitor experience in the PAs and to encourage visitors to stay longer at each site.

1.3 The Importance of Echuya Central Forest Reserve

The forest provides several ecosystem goods and services which includes catchment protection, rain regime regulation for the region, climate change moderator, wildlife conservation, recreation, education, research, provision of timber (poles, firewood) and non-timber products including medicinal plants, wild honey, craft materials, bamboo among others. This is because of its high species richness and habitat heterogeneity and rarity, both of which are of priority for conservation and protection.

The forest lies at the heart of the biodiversity-rich Albertine rift eco-region and is a site of global biodiversity importance and hence is categorised by *Bird Life* as an *Important Bird Area* because of the high diversity of bird species, some of which are globally threatened and endemic. Echuya Forest is the only natural forest adjoining Rubanda, Kabale and Kisoro districts and thus forms a unique and critical ecosystem with special ecological, socio-economic and cultural importance. It has high conservation value of species that are endemic, rare or globally threatened (Nature Conservation Master Plan 2002).

Echuya Forest Reserve has a high conservation value of species that are endemic, rare or globally threatened – 127 species of trees, 85 of birds, 20 of mammals, 54 of butterflies and 43 species of large moth (Davenport, 1996). Of these, eight species of birds are Albertine Rift endemics. These include the Grauer’s swamp warbler (*Bradypterus graueri*), a globally threatened species that occurs in sizeable numbers only in Muchuya swamp and some

swamps of Bwindi. The others are handsome francolin (*Pternistis nobilis*), regal sunbird (*Cinnyris regius*), Dusky crimson-wing (*Cryptospiza jacksoni*), Stripe-breasted tit (*Parus fasciiventer*), collared apalis (*Apalis ruwenzorii*), Red-faced woodland warbler (*Phylloscopus laetus*) and Ruwenzori batis (*Batis diops*). It supports 4 species of trees, 4 butterflies and 1 of birds which do not occur anywhere else in Uganda and are unique to the reserve. The forest lies between 1°14' - 1°21' S and 29°47' - 29°52'E, covers an area of 34 km, and has an altitude range of 2270 - 2570 m. The forest contains the large Muchuya swamp which runs north-south along the reserve. This swamp is an important water catchment and reservoir of the area draining to the north and into Lake Bunyonyi. Echuya forest acts as a watershed between Kabale and Kisoro districts and also between Uganda and Rwanda. It is particularly known for its high-quality bamboo, *Yushania alpina*. There are also areas of broad-leaved forest, particularly along the Eastern side and higher altitude northern end of the Kabale - Kisoro road. The forest cover is approximately 80% mature *Macaranga kilimandscharia* and *Hagenia abyssinica* forest and 20% mountain bamboo *Yushania alpina*. The natural mountain bamboo forest acts as a carbon sink for carbon sequestration and contributes to climate change mitigation. The forest reserve is on a high altitudinal ridge, with about 74% exceeding a 15% slope. The forest therefore plays a significant role in stabilizing soils and acting as a buffer against strong winds, thus an important water catchment area.

The forest is surrounded by areas with a very high rural population density that depends entirely on natural resources and forest products for their basic livelihood needs e.g. firewood, bamboo for construction, medicinal plants etc.). Most of the landscape around Echuya has been deforested, leaving the CFR as the only local source of forest products. The surrounding communities have been using forest products unsustainably due to a lack of alternative sources of livelihood.

Culturally, the forest reserve used to be a habitat for the indigenous people called the Batwa before government relocated them to the neighbouring private land in Kisoro, Rubanda and Kabale. They have a very rich and distinct culture and the forest acts as a significant location for traditional ceremonies, worship and tourist trails. Their caves and other cultural values are still in existence within the forest which they preserved and hold so dearly. One of these “*Ngarama*” cave – once home to their king is often visited during cultural heritage tours for visitors to learn about the traditional culture of these indigenous people. The Batwa’s indigenous knowledge has been helpful in understanding the effects of climate change on the ecosystem. Their testimony shows that climate change has led to the loss of early morning fog, disappearance of tree and bird species, introduction of strange diseases, reduction of water levels and drying up of water sources. This information is helping with the development of strategies to avert the negative impacts of climatic trends. Building on local knowledge in the implementation of projects such as those on rainwater harvesting and bamboo cultivation has helped to ensure pride and ownership of the interventions, thus helping to ensure sustainability.

The forest has a great eco-tourism potential along the western circuit near the Rwandan border. The high altitude (mountainous) provides an excellent panorama of the forest, the surrounding countryside and neighbouring Virunga Mountain ranges especially for bird watchers for the different species which are endemic to the reserve. The rarity of its flora and fauna also has much potential for sustainable tourism initiatives due to the dense human population of the area and the growing interactions between these people and the forest. There are also troops of blue and colobus monkeys and a small population of baboons in addition to other different small mammal species and lots of butterflies that contribute to the forest’ scenic outlook.

1.4 Justification for the establishment of the Visitor Information Centre

Like many other PAs, Echuya CFR ecosystem is faced with a number of anthropogenic and climate change related pressures that threaten its existence. These threats have been identified in the FMP (2016-2026). The threats include among others, rapid human population growth around the forest ecosystem compounded with poverty and inequality in consumption of resources. The forest plays a significant role in the provision of ecological, social and economic services to the local, national and regional community. The forest has high conservation value of species that are endemic, rare or globally threatened (Nature Conservation Master Plan 2002).

Subsistence crop production, forest products (for commercial and domestic purposes), petty trade and pastoralism remain the main sources of livelihood for the majority of the population around the forest. The dwindling size of landholdings and growing pressure on the land has led to declining soil fertility leading to the need to seek the forest land as an alternative; changing lifestyle patterns based on the rapid growth in consumerism and weak conservation measures are outstripping the supply of most natural resources and causing extensive forest degradation. Overharvesting of species mainly from collection of bamboo and medicinal herbs, forest burning / fires, particularly in Muchuya swamp by hunters (for bush meat), overgrazing and charcoaling has led to biodiversity loss. Rural growth / settlement areas like Murubindi, Kashasha, Gitebe-Kanaba, Biizi-Rugeshi–Murora, Mukasaayi, Karengyere-Rwamahano and Kinyarushengye are densely populated and the proximity of the forest to the settlements makes it face the growing problem of encroachment, waste disposal and pollution. In addition, climatic changes have naturally shifted habitats resulting new species assemblages and invasive species spread. The forest also faces both Institutional and policy obstacles including funding, security and management capability to ensure effective protection.

The economy of Uganda is highly vulnerable to climate change due to its impacts on key sectors such as agriculture, fisheries, water resources, forestry, energy, health, infrastructure and settlements. The effect of climate change on these key sectors hampers efforts to reduce poverty and to improve people's well-being and household incomes. This necessitates policy actions to build climate change resilience and climate-compatible development through climate change adaptation and mitigation, while at the same time promoting economic and social development.

Echuya is a natural montane bamboo forest with increasing conversion pressure for industrial, commercial and domestic use. The cornerstone issues concerning the forest include; to ensure sustainable yield of bamboo for local and industrial use; support stakeholder partnerships and involved local communities into collaborative forest management for forest conservation and livelihood improvement and to conserve biodiversity, soil and water resources in and around the forest. The proposed VIC project supports several key thematic areas of the FMP including: natural forest conservation and management, ecotourism, water conservation, education, training and research and climate change mitigation. It envisages enhanced participation of local community, public and private sector participation in the forest development. Properly managed forests have a great promise in helping the country achieve the Sustainable Development Goals (SDGs). The VIC project is intended to contribute in addressing the aforementioned threats and challenges to the forest ecosystem to ensure sustainable management of this important resource.

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.

1.4.1 Opportunities for the VIC

National Forestry Authority 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 area, provide information and interpretation for identified attractions, control and filter visitor flows and, in some cases, be a substitution for on-site visits. The VIC 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.

1.4.2 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 spill over 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 used to support 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.

1.4.3 Tourism in the Third National Development Plan (NDP III) 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.

1.5 Echuya Forest Management Plan

This Echuya forest management plan was designed to run for a period of ten years commencing 1st July 2016 to 30th June 2026. It incorporates international treaties including the Convention on Biological Diversity (CBD) and the Convention on International Trade on Endangered Species (CITES), United Nations Framework for Combating Climate Change (UNFCCC) which require each member country to embrace the principles of sustainable natural resource management. Echuya is a natural montane bamboo forest with increasing conversion pressure for industrial, commercial and domestic use. Echuya CFR is a sustainably managed bio-diversity rich forest, supplying wood and non-wood products for improved livelihoods of the surrounding communities.

The management objectives of the plan are twofold: to ensure the sustainable yield of bamboo for local and industrial use and to foster stakeholder partnerships while involving local communities in collaborative forest management. Additionally, a key objective is to conserve the rich biodiversity, soil, and water resources within and around the Echuya Central Forest Reserve (CFR). These objectives underpin the plan's commitment to achieving a harmonious balance between ecological conservation and socio-economic development in the region. The Management objectives are both short and long terms

In the short term, the plan focuses on safeguarding the unique biodiversity found in the Muchuya swamp, a significant component of the Echuya CFR. Additionally, the plan aims to preserve the protective vegetation cover within the CFR to prevent soil erosion and maintain critical hydrological functions in the surrounding areas. Promoting affirmative silviculture practices for sustainable bamboo production, preserving the natural beauty of the region, and fostering ecotourism development activities are also immediate objectives. Moreover, forging partnerships with local communities, non-governmental organizations (NGOs), and the private sector to enhance livelihoods is a top priority within the next few years.

In the medium term, the plan seeks to strengthen the active participation of communities living around the Echuya CFR in collaborative forest management initiatives. Additionally, it aims to promote and sustainably implement forest management practices within the CFR. These objectives align with a broader vision of enhancing the environmental resilience and socio-economic well-being of the region over the next decade. By fostering partnerships, promoting sustainable practices, and conserving biodiversity, the plan aims to ensure that Echuya CFR serves as a model for balanced, community-centred, and ecologically sound forest management in the years to come.

1.6 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”.

1.7 Objectives of the Environmental and Social Impact Statement

The key purpose of the ESIA 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 ESIA 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:

1. describe the nature of construction to be undertaken;
2. verify compliance with environmental laws, policies and regulations as well as industry best practices and standards;
3. identify and analyse alternatives to the proposed project;
4. 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;
5. seek the views of affected persons in consultation with NEMA and concerned lead agencies;
6. 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.

1.8 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.

1.9 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 1.1 below outlines the Terms of Reference as set out by the Authority.

Table 1.1: 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;	<p>A scoping report was prepared for the three proposed Visitor Information Centres within the selected Central Forest Reserves, Bugoma, Budongo and Echuya; this was approved by the Authority which issued the proponent with the terms of reference for the conduct of the ESIA (refer to Appendix A).</p> <p>This ESIA report is for the proposed VIC within Echuya CFR. GPS coordinates and maps indicating the proposed area of development are given in chapter four of this report.</p>	Chapter four
(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;	<p>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).</p> <p>Issues raised during these consultative meetings have been documented in chapter seven of this report. The records of consultation have also been appended.</p>	Chapter seven
(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 four of this report.	Chapter four 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 four of this report; including all activities under the construction and operation phase.	Chapter four
(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	Mitigation measures including requirements for monitoring, allocation of	Chapter nine

No	Condition	Compliance	Section
	and monitoring plans, respectively (preferably in table matrix format), that related to the identified potential environmental impacts and risks;	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.: <ul style="list-style-type: none"> - Waste management plan (Appendix G) - Health and Safety plan (Appendix H) - Biodiversity management and monitoring plan (Appendix I) - Chance finds procedure (Appendix J) 	Chapter ten Appendices G to J
(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 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 four of this report. The certificate of valuation is attached to this report	Chapter four

1.10 IFPA-CD Institutional Implementation Arrangement

The IFPA-CD is spearheaded by the Ministry of Water and Environment whose roles include leading the project steering committee and technical working groups; monitoring and reporting; assigning and maintaining an executive and technical level of the project. The ministry is also responsible for establishing 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 (MWE, 2020).

The establishment of the proposed VIC (the project) is to be implemented by the National Forestry Authority (the proponent). This is in line with NFA's roles under IFPA-CD to implement tourism initiatives in central forest reserves and other project components that fall under its mandate. The management of the VIC and all activities implemented thereunder will be left to the discretion of the proponent in conformity with the regulatory framework and consultation with the relevant stakeholders.

1.10.1 The Project Team

The focal personnel responsible for VIC design, site selection, planning and implementation for NFA-selected sites are given in table 1.2 below.

Table 1.2: Project Focal Persons

Role	Name	Contact Details
Proponent Team: NFA		
Director Plantations Development	Stuart Maniraguha	Mobile: 0782786048 Email: stuartmani@gmail.com
Director Natural Forests	Tom Rukundo	Email: tom.rukundo@nfa.go.ug
Environment Management Officer	Shallon Challenge	Email: shallon.challenge@nfa.go.ug Mobile: +256 774265636

Role	Name	Contact Details
Social Safeguards Officer	Christine Mugenyi	Email: christine.mugenyi@nfa.go.ug
Eco-tourism officer	Sylvia Tumusiime	Tel: +256 312 264430/6 Mobile: 256 776325959 Email: sylvia.tumusiime@nfa.go.ug
Echuya CFR	Mr. Alex Obonyo (Sector Manager)	Tel: 0778 697 601
	Mr. Peter Makisa (Forest Supervisor)	Tel: 0779 063 227 / 0700 470 106
World Bank Team:		
	Eng. James Labongo	labongojames.soltech@gmail.com
	Lesya Verheijen	lesya.verheijen@gmail.com
	Stephen Ling	sling@worldbank.org
Design Team: FBW		
Project Coordinator	Stuart Harley	Tel: +256 (0)703 788278 E-mail: s.harley@fbwgroup.com
Lead Architect / Design Team Leader	Nigel Tilling	Tel: +256 (0)752 796777 E-mail: n.tilling@fbwgroup.com
Project Architect	Franka Van Marrewijk	Tel: +31 613031213 E-mail: f.vanmarrewijk@gmail.com
Project Architect	Alexandra Papadaki	Tel: +31 613031213 Email: apapadaki@fbwarchitecten.nl
Project Architect	Donald Luwaga	Tel: +256 785 544324 Email: d.luwaga@fbwgroup.com
Structural Engineer	Joseph Debuni	Tel: +256 (0)772 508462 E-mail: j.debuni@fbwgroup.com
MEP Project Manager	Dean Gibbs	Tel: +256 (0)769 024260 E-mail: d.gibbs@fbwgroup.com

1.11 ESIA Report Structure

The structure of the report is based on the NEMA EIA guidelines and is presented in eleven chapters as indicated below:

Chapter 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.

Chapter 2 Study methodology

Presents the assessment methodology and approach to the ESIA study

Chapter 3 Legislative and Institutional Framework

Provides an overview of the environmental regulatory and policy framework applicable to the project.

Chapter 4 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.

Chapter 5 Environmental and social baseline

Presents the environmental and social baseline conditions within the project site and its surroundings

Chapter 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

Chapter 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

Chapter 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

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

Chapter 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).

Chapter 11 Conclusion

Gives the study recommendation and conclusion

2.0 STUDY METHODOLOGY

2.1 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.

2.2 Socio-economic survey methods

2.2.1 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:

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

2.2.2 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:

1. introducing the project to stakeholders and potential affected and benefited people;
2. understanding stakeholders' concerns regarding various aspects of the project proposal;
3. 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;
4. 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.

5. allowing stakeholders to air out their opinions about and expectations from the proposed project, and
6. promoting understanding through active participation of individuals, organizations as stakeholders who have a stake in the project and its outcomes.

2.2.3 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.

2.3 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.

2.3.1 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.

2.3.2 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 2.1 below shows the specialized equipment used for the ESIA.

Table 2.1: Specialized equipment 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"> Noise
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"> Particulate matter PM_{2.5}, PM₁₀, PM₁ Formaldehyde Volatile compounds Temperature Relative Humidity

2.3.3 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 included: -

1. Soil texture determination by hydrometer method
2. Bulk density determination by the soil infill method
3. Organic matter determination
4. Soil pH and electro conductivity determination

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

2.4 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.

2.4.1 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.

2.4.2 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.

2.4.3 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.

2.5 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.

2.5.1 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.

2.5.2 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:

2.5.2.1 Sighting (casual encounters)

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

2.5.2.2 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.

2.5.2.3 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.

2.5.3 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.

2.5.3.1 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.

2.5.3.2 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.

2.5.4 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:

2.5.4.1 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.

2.5.4.2 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.

2.5.4.3 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 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.

2.6 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.

2.6.1 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.

2.6.2 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.

2.6.3 Indices (calls/songs, nests and feathers)

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

2.7 Mapping of the proposed site

2.7.1 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.

2.7.2 Features mapped

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

2.7.3 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.

2.8 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.

2.10 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.

2.10.1 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.

2.10.1.1 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.

2.10.1.2 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).

2.10.1.3 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).

2.10.1.4 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).

2.10.1.5 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)

2.10.1.6 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 2.2 provides a description of the colour coding adopted in impact analysis.

Table 2.2: Colour coding description of adopted impact analysis

SW	-ve Rating	Definition	+ve Rating
0	NO IMPACT 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

SW	-ve Rating	Definition	+ve Rating
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

3.0 LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

3.1 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:

1. The conduct of Environmental and Social Impact Assessments;
2. Occupational Health and Safety;
3. Labour relations;
4. Pollution prevention and management;
5. Public Health and Safety;
6. Biodiversity conservation;
7. Cultural heritage;
8. Waste management;
9. Resource efficiency management; and
10. General environmental management

The most relevant and significant national policies, laws and regulations for Uganda that apply to the proposed project are summarized in box 3.1 and detailed in Appendix 3.

Box 3.1: 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 National Policy on Persons with Disability, 2006
 The Renewable Energy Policy for Uganda, 2007
 Solar Power Subsidy (2007)

Uganda National Medicines Policy 2015
 Uganda Gender Policy, 2007
 National Policy on Disability, 2006

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)

3.2 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.

3.3 Policies

3.3.1. 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

3.3.2. 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:

1. Tourism will be private sector driven
2. The government will provide the enabling framework for the industry to flourish
3. A strong destination brand and image and increased national awareness of tourism
4. Effective market inclusiveness and community involvement will form the basis of tourism growth
5. Tourism development will be underpinned by sustainable environmental practices
6. Tourism development is dependent on the establishment of cooperation and close partnerships among key stakeholders
7. Tourism development will take place in the context of regional cooperation with other states of East Africa
8. 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:

1. Sustainable environmental management practices
2. Involvement of local communities
3. A safe and stable tourism environment
4. Globally competitive practices, by offering quality services and value for money
5. Innovative and responsive to customer needs
6. Focus on product enhancement and emphasize diversity
7. Effective tourism training, education and awareness
8. Creative and aggressive marketing and promotion
9. Strong economic linkages with other sectors of the economy
10. Appropriate institutional structures
11. Appropriate supportive infrastructure
12. 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.

3.3.3. 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.

1. Conservation and sustainable development: Uganda’s forests should be managed to meet the needs of this generation without compromising the rights of future generations.
2. 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.
3. Biodiversity and environmental services: forest sector development should safeguard the nation's forest biodiversity and environmental services through effective conservation strategies.
4. Partnerships in governance: new institutional relationships should enhance efficiency, transparency, accountability and professionalism, and build confidence in all forest stakeholders:
5. 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.
6. Cultural and traditional institutions: forest sector development should take into consideration cultural and traditional attributes and institutions.
7. International obligations: legislation should be developed to support the implementation of current and future international commitments that affect the forest sector.
8. Forestry valuation: environmental and social values should be used in cost/benefit valuations when assessing strategies to implement the forestry policy.

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.

Policy statements relevant to the establishment of the VIC include:

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

3.3.4. 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.

3.3.5. 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; stakeholder engagement and project disclosure has been conducted as part of this ESIA. This conforms to the requirements of this policy.

3.3.6. 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.

3.3.7. 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.

3.3.8. 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. Sections of Echuya are classified as high-altitude wetlands and as such are subject to the provisions of this policy. This ESIA identified potential impacts on wetland systems and recommended appropriate mitigation measures.

3.3.9. 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.

3.3.10. 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.

3.3.11. 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.

3.3.12. 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.

3.3.13. Uganda National HIV and AIDS Policy, 2011

The policy provides a broad framework for delivering Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) services in the country. It stipulates policies and legal requirements that guide planning and action in social and economic sectors and at the various levels of the response to HIV and AIDS. Under Paragraph 3.1 (Policy: Coordination and Management of the National Response), Government requires all stakeholders involved in development efforts to mainstream HIV and AIDS in their policies and plans.

Relevance: The Project Proponents shall, in compliance with the provisions of this policy, develop an HIV/AIDS Workplace Policy, which will also include checks for project contractors to embed this within their policies, plans and procedures.

3.3.14. The National Policy on Persons with Disability, 2006

The Policy seeks to promote equal opportunities, care and support for the protection of Persons with Disabilities.

Relevance: The proposed project has been designed in consideration of persons with disabilities.

3.3.15. 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 Echuya 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.

3.3.16. Uganda National Medicines Policy 2015

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

Relevance: The Echuya 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.

3.3.17 Uganda Gender Policy 2007

The Uganda Gender Policy is an integral part of the national development policies. It is a framework for redressing gender imbalances as well as a guide to all development practitioners. The aim of this policy is to guide all levels of planning, resource allocation and implementation of development programs with a gender perspective. The emphasis on gender is based on the recognition that "gender" is a development concept useful in identifying and understanding the social roles and relations of women and men of all ages, and how these impact on development.

Relevance: The Uganda Gender Policy is relevant in the construction and operation of a Visitor Information Centre (VIC) as it guides the design, resource allocation, and programming to ensure inclusivity, equitable service provision, and consideration of gender-specific needs and roles

3.3.18 National Policy on Disability 2006

In Uganda, PWDs face difficulties in accessing education, health and sports facilities, places of employment, cultural sites and other physical infrastructure. They are denied access to most buildings such as schools, hospitals, courts of laws, stadia. This is due to the fact that many buildings do not have such facilities such as ramps and lifts. The existing lifts do not have talking devices to enable the blind to access information. Roads do not have facilities for PWDs. In most cases, PWDs cannot access information provided by both electronic and print media.

Relevance: The National Policy on Disability 2006 is crucial for VICs as it underscores the need for accessibility to information conveyed at the Centres about cultural sites and attractions among others. It highlights the importance of inclusive infrastructure and accessible information, ensuring equal access and services for all visitors, including those with disabilities

3.4 Laws

3.4.1. 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

3.4.2. 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.

3.4.3. 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.

3.4.4. 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.

3.4.5. 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

3.4.6. 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.

3.4.7. 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.

3.4.8. 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.

3.4.9. 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.

3.4.10. 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.

3.4.11. 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.

3.4.12. 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.

3.4.13. 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.

3.4.14. 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.

3.4.15. 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.

3.4.16. 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.

3.4.17. 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.

3.4.18. 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.

3.4.19. 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.

3.4.20 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.

3.5 Regulations

3.5.1. 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.

3.5.2. 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.

3.5.3. 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.

3.5.4. 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.

3.5.5. 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.

3.5.6. The National Environment (Mountainous and Hilly Areas Management) Regulations, 2000

These provide for the sustainable management of mountainous and hilly areas and prescribe rules for soil conservation. The regulations also prohibit the introduction of invasive alien species.

Relevance: The Project will involve the establishment of a VIC in a hilly location i.e. Echuya CFR. This will increase the potential for soil erosion or the introduction of invasive species. The Project Proponents shall apply appropriate measures necessary to prevent soil erosion in hilly areas and to prevent the introduction of invasive alien species in accordance with these regulations.

3.5.7. 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.

3.5.8. 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.

3.5.9. 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 report has been conducted by a competent team of registered environmental practitioners as required by these regulations.

3.5.10. 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.

3.6 Echuya Forest Management Plan

The Echuya FMP deals with environmental conditions such as biodiversity status, ecological function, wetlands, problems and issues and ecological fragile areas. It also covers the history of management of these CFRs since reservation and how subsequent management scenarios were done. Periods of the Management Plans, players and major prescriptions are given.

The Echuya FMP also describes the planned work in the FMPA and how it will be implemented following a laid down plan. It defines the management mission and details the management objectives. It further justifies management's interest in prescribing short - and long-term strategies and activities for the next 10 years up to 2022.

The plan covers planned management activities within the CFRs in relation to production, silviculture, protection, consultation, FM, research, partnership, infrastructure and financial forecast.

The plan brings out mitigation measures for environmental and social impacts and strategies for implementing them. It also tackles economic benefits to accrue to the local community, the local government (LG) and the nation through planned management.

It also comes up with the proposed optimum organisational structure and necessary logistics to propel Echuya FMPA to achieve the proposed work. Finally, it looks at monitoring and evaluation concerns based on the indicators to be developed

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."

3.7 IFPA-CD Environmental and Social Management 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)

3.7.1 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.

3.7.2 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 3.1 below.

Table 3.1: Relevance of the IFPA – CD gender action plan to the proposed project

No	Component or Subcomponent Intent	Objective	Applicability
Component 1. Improved management of protected areas			
	Subcomponent 1.1. Improvement of infrastructure and equipment for the management of forest PAs	<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"> (i) Training in fire management; (ii) Establishment and maintenance of fire breaks; (iii) Gender-inclusive community sensitization, response, and monitoring; and (iv) Introduction of appropriate modern approaches to help in efficient fire management practices at the landscape level 	<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>
	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	<ul style="list-style-type: none"> (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. (ii) Support gender inclusiveness in the management plans for the share of forest area managed. (iii) Engage community leaders and particularly men as agents for change in promoting gender inclusion and equity in forest management and use. (iv) Identify and promote best practices in inclusive benefit sharing in the management and use of forests and wildlife resources. 	<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> <p>The Echuya 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
			quality and effective services to the visitors and other project stakeholders including members of the host community.
Component 2. Increased revenues and jobs from forests and wildlife protected areas			
	Subcomponent 2.1. Investments in tourism	<ul style="list-style-type: none"> (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. (ii) Support gender-inclusive capacity building for private timber plantation owners. (iii) Promote targeted communication/media products, and organize tourism-related trainings targeted for men and women entrepreneurs, strongly encouraging women participation. 	<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 centre 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>

3.7.3 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.

3.7.4 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 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

3.7.5 Vulnerable and Marginalized Group Framework

The purpose of the Vulnerable and Marginalized Groups Framework (VMGF) guides the implementation of IFPA-CD interventions (including the proposed VICs) that may affect Vulnerable Groups (VGs) in the project area of influence (AoI). The VMGF is based on the ESS7 of the World Bank Environmental and Social Framework (ESF) and the applicable National policies, laws and regulations of Uganda. The ESS7 was triggered, in consideration of the presence of the Batwa within the project AoI and their collective attachment to the subject Protected Area. The VMGF includes a description of project activities; potential

positive and negative effects on VMGs; and a framework for ensuring free, prior, and informed consent (FPIC, where applicable). The VMGF serves as a practical tool to provide guidance for the project in handling any anticipated issues related to VGs. The VMGF identifies measures required for avoiding or minimizing any adverse impacts on the Batwa and supports the development of alternative livelihoods where and as needed. The VMGF applies to all components and activities that will impact the Batwa and provides procedures to ensure that the impacts are mitigated and that the Batwa benefit from the project.

3.8 Governance and administrative structure

The key administrative bodies/agencies that are responsible for the enforcement of the laws, policies and regulations. These institutions shall be highly considered to maintain a harmonious working environment with compliance and sustainability of the environment. Table 3.2 describes the institutions and their role in the environment with respect to the project.

Table 3.2: Regulators for project implementation

Institution	Mandate and Role in the project	Permits
National level		
National Environment Management Authority (NEMA)	<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
National Forestry Authority (NFA)	<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"> (a) To develop and manage all central forest reserves (b) to promote innovative approaches for local community participation in the management of central forest reserves; (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; 	

Institution	Mandate and Role in the project	Permits
	<p>(d) to establish procedures for the sustainable utilization of Uganda's forest resources by and for the benefit of the people of Uganda;</p> <p>(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;</p> <p>(f) in consultation with other lead agencies, to develop, or control the development of tourist facilities in central forest reserves;</p> <p>(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</p> <p>(h) to carry out or commission research for the conservation, development and utilisation of forests, and the conservation of biological diversity and genetic resources.</p> <p><u>Roles under IFPA</u></p> <ol style="list-style-type: none"> 1. Implement forestry activities in and around central forest reserves 2. Monitors and reports on activities undertakings 3. NFA leads activities within CFRs. 4. Responsible for the implementation of activities in components that fall under the NFA mandate. 	
Uganda Wildlife Authority (UWA)	<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"> (a) to ensure the sustainable management of wildlife conservation areas; (b) to propose policies on wildlife management to the Minister; (c) to implement Government policies on wildlife management; (d) to establish and implement management plans for wildlife conservation areas and wildlife populations outside wildlife conservation areas; (e) to develop and implement management and administrative policies for better implementation of national policies and laws relating to wildlife management in Uganda; (f) in consultation with other lead agencies, to control, develop or licence the development of tourist facilities in wildlife-protected areas; (g) to promote the conservation of biological diversity <i>ex-situ</i> and to contribute to the establishment of standards and regulations for that purpose; (h) to disseminate information and promote public education and awareness of wildlife conservation and management; (i) to charge fees for services it provides and for the licences, rights and any other permission that it may grant. 	

Institution	Mandate and Role in the project	Permits
	<p><u>Roles under IFPA</u></p> <ol style="list-style-type: none"> 1. Implement tourism and national parks and wildlife reserves activities 2. Monitors and reports on activities undertakings 3. Responsible for the implementation of activities in and around NPs and wildlife reserves in components that fall under the UWA mandate. 	
<p>Ministry of Water and Environment (MWE)</p>	<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> <p>The Ministry of Water and Environment also spearheads the IFPA-CD project under which the VICs are being established.</p> <p><u>Roles under IFPA</u></p> <ol style="list-style-type: none"> 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. 2. Assign and maintain the executive level and technical level of the Project 3. Responsible for monitoring and reporting on the Project 4. Provide high-level political support to FSSD to ensure multi-sectoral coordination. 5. Lead Project Steering Committee and technical working groups 6. Provides items for joint annual work program and budget approval 	<p>Water abstraction (Surface and ground) and drilling permit</p>
<p>Ministry of Tourism, Wildlife and Antiquities (MTWA)</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, The 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><u>Roles under IFPA</u></p> <ol style="list-style-type: none"> 1. A member of the Project Steering Committee 2. Supports Project coordination and implementation 	

Institution	Mandate and Role in the project	Permits
	<ol style="list-style-type: none"> 3. Assign and maintain the executive level and technical level of the Project 4. Provide high-level political support. 5. Provides policy guidance and oversees UWA 	
Ministry of Gender Labour and Social Development (MGLSD)	<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>	Certificate of Registration of a workplace
Uganda Tourism Board (UTB)	<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> <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> <ol style="list-style-type: none"> (a) To formulate, in cooperation and consultation with the private sector and relevant entities, a marketing strategy for tourism in Uganda. (b) To implement the marketing strategy and to promote Uganda as an attractive and sustainable tourist destination. (c) To encourage and promote domestic tourism within Uganda. (d) To encourage investment in the tourism sector and wherever possible, to direct such investment to the less developed tourism areas. (e) To enforce, and monitor standards in the tourism sector; 	
Uganda Police Force (UPF)	<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>	
Local level		

Institution	Mandate and Role in the project	Permits
<p>District Local Governments</p>	<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><u>Roles under IFPA</u></p> <ol style="list-style-type: none"> 1. Oversight implementation of Project activities in the district 2. Supporting in supervision, advisory, coordination and planning of Project relevant activities 3. Liaise with the MWE and MTWA and agencies on Project Implementation 4. Providing technical personnel for review and assessing compliance, learning lessons, and improving the future of the Project 5. Handle issues and supervise issues of integration/mainstreaming of gender, ethnic minority and marginalized group involvement in all Project activities 6. Participate in the appraisal of Project activities 	<p>Architectural and structural approval</p> <p>Occupation permits</p>
<p>Non-Government Organisations</p>		
<p>Cultural institutions</p>	<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 ESIA report</p>	

Institution	Mandate and Role in the project	Permits
Civil society organizations (CSO) and Community-Based Organizations (CBO)	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	

3.9 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 1st 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 3.3: Environmental and social standards

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHSG
			Yes	No		
3.9.1	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 each individual VIC is a subproject under the IFPA project and shall 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"> (a) Conducted an environmental and social assessment of the proposed project, including stakeholder engagement; (b) Undertaken stakeholder engagement and disclose appropriate information in accordance with ESS10; (c) Developed an ESCP, and implement all measures and actions set out in the legal agreement including the ESCP; and (d) shall conduct monitoring and reporting on the environmental and social performance of the project against the ESSs. <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>
3.9.2	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"> • promote safety and health at work; • promote fair treatment, non-discrimination and equal opportunity of project workers 	<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
			Yes	No		
					<ul style="list-style-type: none"> protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate. prevent the use of all forms of forced labour and child labour. support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. provide project workers with accessible means to raise workplace concerns. <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
			Yes	No		
						<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
			Yes	No		
						<p>prevention and preparedness and response arrangements to emergency situations; and (f) remedies for adverse impacts such as occupational injuries, deaths, disability and disease</p> <p>26. All parties who employ or engage project workers will develop and implement procedures to establish and maintain a safe working environment, including that workplaces, machinery, equipment and processes under their control are safe and without risk to health, including by use of appropriate measures relating to chemical, physical and biological substances and agents. Such parties will actively collaborate and consult with project workers in promoting understanding, and methods for, implementation of OHS requirements, as well as in providing information to project workers, training on occupational safety and health, and provision of personal protective equipment without expense to the project workers.</p> <p>27. Workplace processes will be put in place for project workers to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health. Project workers who remove themselves from such situations will not be required to return to work until necessary remedial action to correct the situation has been taken. Project workers will not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removal.</p> <p>28. Project workers will be provided with facilities appropriate to the circumstances of their work, including access to canteens, hygiene facilities, and appropriate areas for rest. Where accommodation services are provided to project workers, policies will be put in place and implemented on the management and quality of accommodation to protect and promote the health, safety, and well-being of the project workers, and to provide access to or provision of services that accommodate their physical, social and cultural needs.</p> <p>30. A system for regular review of occupational safety and health performance and the working environment will be put in place and include identification of safety and health hazards and risks, implementation of effective methods for responding to identified hazards and risks, setting priorities for taking action, and evaluation of results.</p>
3.9.3	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 practices have become more accessible and achievable.	✓		<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"> • promote the sustainable use of resources, including energy, water and raw materials; • avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities; • avoid or minimize project-related emissions of short and long-lived climate pollutants; 	<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>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
					<ul style="list-style-type: none"> avoid or minimize generation of hazardous and non-hazardous waste; <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 / EHS
			Yes	No		
						<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>
3.9.4	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"> anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project 	<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 EHSs and other GIIP, taking into consideration safety</p>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
					<p>life cycle from both routine and non-routine circumstances.</p> <ul style="list-style-type: none"> • promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams. • avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials. • have in place effective measures to address emergency events. • ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities. <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>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						<p>in a coordinated and expeditious manner, to prevent it from injuring the health and safety of the community, and to minimize, mitigate and compensate for any impacts that may occur.</p> <p>22. The Borrower will document its emergency preparedness and response activities, resources, and responsibilities, and will disclose appropriate information, as well as any subsequent material changes thereto, to affected communities, relevant government agencies, or other relevant parties. The Borrower will assist and collaborate with affected communities, relevant government agencies and other relevant parties in their preparations to respond effectively to an emergency event, especially where their participation and collaboration will be an important part of an effective response.</p> <p>24. When the Borrower retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by these security arrangements to those within and outside the project site. In making such arrangements, the Borrower will be guided by the principles of proportionality and GIIP, and by applicable law, in relation to hiring, rules of conduct, training, equipping, and monitoring of such security workers. The Borrower will not sanction any use of force by direct or contracted workers in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.</p> <p>27. The Borrower will review all allegations of unlawful or abusive acts of security personnel, take action (or urge appropriate parties to take action) to prevent recurrence and, where necessary, report unlawful and abusive acts to the relevant authorities.</p>
3.9.5	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.		X	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.
3.9.6	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 services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.	✓		<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"> • protect and conserve biodiversity and habitats. • apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. • promote the sustainable management of living natural resources. 	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 differing values attached to biodiversity and habitats by project-affected parties and other interested parties.

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
					<ul style="list-style-type: none"> support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities. <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>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> <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</p>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						<p>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>
3.3.7	Environmental and Social Standard 7: VMGs	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	✓		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	11. A key purpose of this ESS is to ensure that Indigenous Peoples (Batwa) /Sub-Saharan African Historically Underserved Traditional Local Communities present in, or with collective attachment to, the project area are fully consulted about, and have opportunities to actively participate

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS		
			Yes	No				
		<p>"Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities,"¹ 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>			<ul style="list-style-type: none"> ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource based livelihoods of VMGs. avoid adverse impacts of projects on VMGs, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts. promote sustainable development benefits and opportunities for VMGs in a manner that is accessible, culturally appropriate and inclusive. 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. obtain the Free, Prior, and Informed Consent (FPIC) of affected VMGs in the three circumstances described in this ESS. 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. <p>With respect to the criteria outlined in paragraph 7 of ESS7, "This ESS applies whenever VMGs (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 Batwa are subject to the provisions of this standard. The Batwa community is present in Echuya CFR.</p> <p>The Proponent and other Government agencies have engaged the Batwa through the Vulnerable and Marginalized Group Framework under the IFPA-CD project. The current engagement of the Batwa within the subject protected areas is detailed in chapter four of this ESIA report.</p> <p>Stakeholder consultation with the Batwa communities conducted during the exercise 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>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 VMGs.</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 VMGs.</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 Peoples/Sub – Saharan African Historically Underserved Traditional Local Communities of: (a) their rights under national law; (b) the scope and nature of the proposed commercial development; and (c) the potential consequences of such development; and obtain their FPIC. The Borrower will also enable VMGs to share equitably in the benefits to be</p>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						<p>derived from commercial development of such cultural heritage, consistent with the customs and traditions of the VMGs.</p> <p>34. The Borrower will ensure that a grievance mechanism is established for the project, as described in ESS10, which is culturally appropriate and accessible to affected VMGs, and takes into account the availability of judicial recourse and customary dispute settlement mechanisms among VMGs.</p>
3.3.8	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"> • protect cultural heritage from the adverse impacts of project activities and support its preservation. • address cultural heritage as an integral aspect of sustainable development. • promote meaningful consultation with stakeholders regarding cultural heritage. • promote the equitable sharing of benefits from the use of cultural heritage. <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 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</p>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						<p>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 features with cultural heritage significance affected by the project, the people that value such features, and the individuals or groups with authority to represent and negotiate regarding the location, protection and use of the heritage place(s).</p> <p>29. Where a project intends to use cultural heritage of project affected parties (including individuals and communities) for commercial purposes, the Borrower will inform the project affected parties of: (a) their rights under national law; (b) the scope and nature of the commercial</p>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						development and the potential impacts; and (c) the potential consequences of such development and impacts. 30. The Borrower will not proceed with such commercial use unless it: (a) carries out meaningful consultation with stakeholders as described in ESS10; (b) provides for fair and equitable sharing of benefits from commercial use of such cultural heritage, consistent with customs and traditions of the project affected parties; and (c) identifies mitigation measures according to the mitigation hierarchy.
3.3.9	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.		X	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.
3.3.10	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.	✓		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 ESS 10 aims to: <ul style="list-style-type: none"> • 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. • 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. • 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. • 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. 	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. 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. 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. 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. 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' 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

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						<p>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> <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</p>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						<p>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> <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>

No	ESS	Objective	Was it triggered?		Applicability	Requirements / EHS
			Yes	No		
						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.

4.0 THE PROPOSAL

4.1 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 Echuya 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.

4.2 Echuya VIC

Echuya Forest lies at the heart of the biodiversity rich Albertine rift eco-region and is particularly known for its high-altitude swamp of Muchuya and unique biodiversity. The forest ranges altitude between 2270 and 2570m; it is one of Uganda's 30 identified important bird Areas. The forest reserve was first constituted in 1939 as un-demarcated forest followed by demarcation from 1944 to 1947 in its present boundary limits. The preferred site approximately 500 sq. meters is located in Muko Sub – County at the current NFA sector offices. It comprises of a pine tree woodlot and open grassland as shown in the plates below.



Plate 4.1: A section of Echuya forest reserve



Plate 4.2: View of the project site



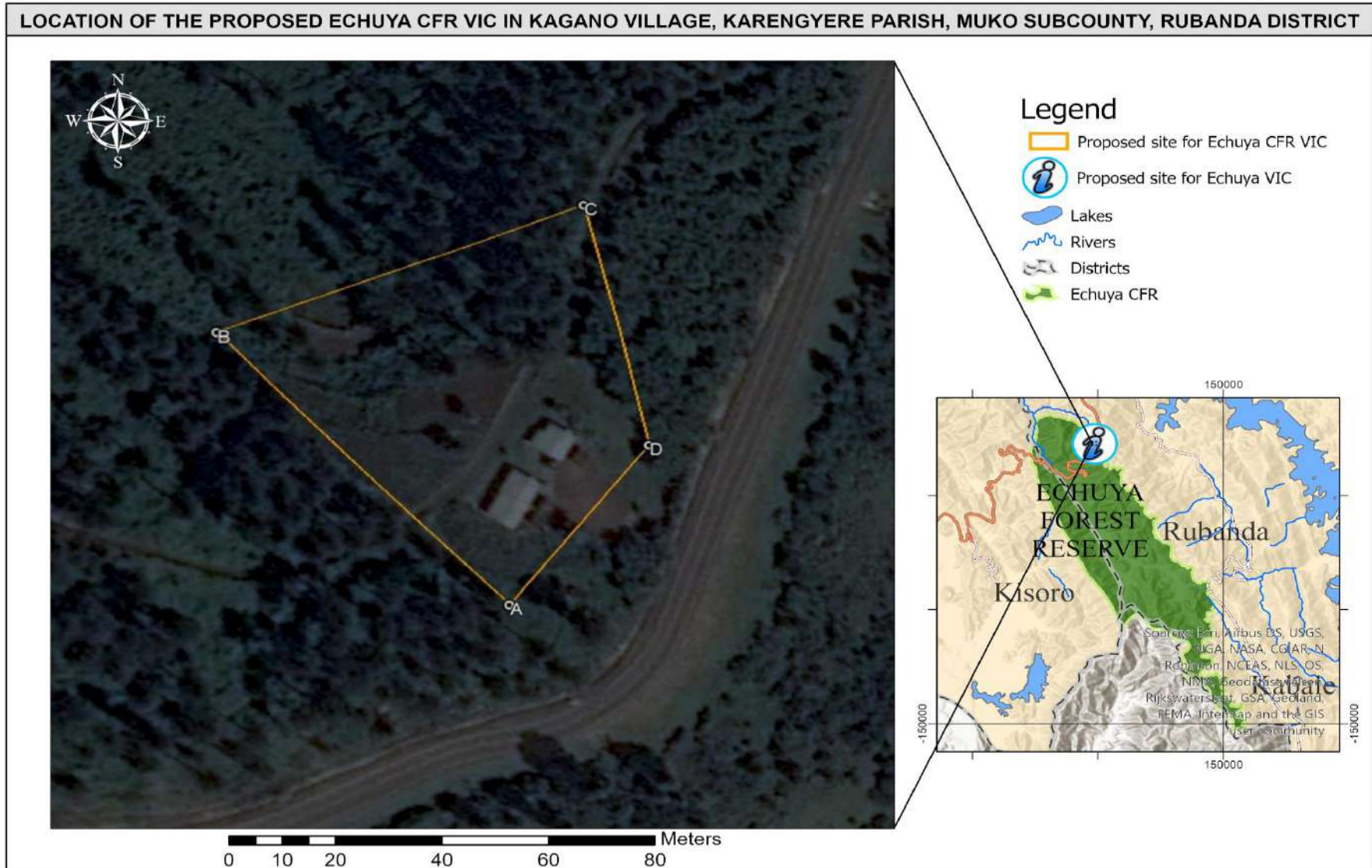
Plate 4.3: Access to the project site off Kabale – Kisoro Road

4.3 Project Location

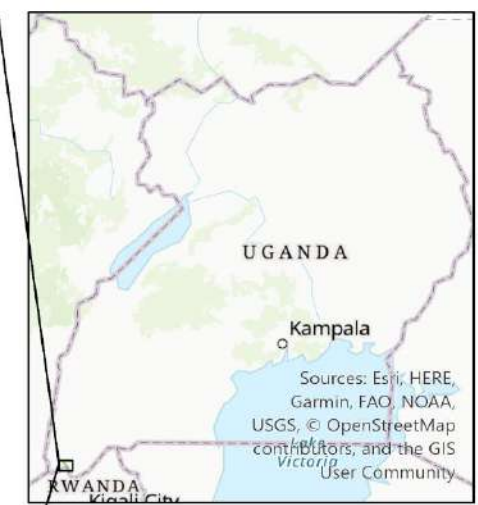
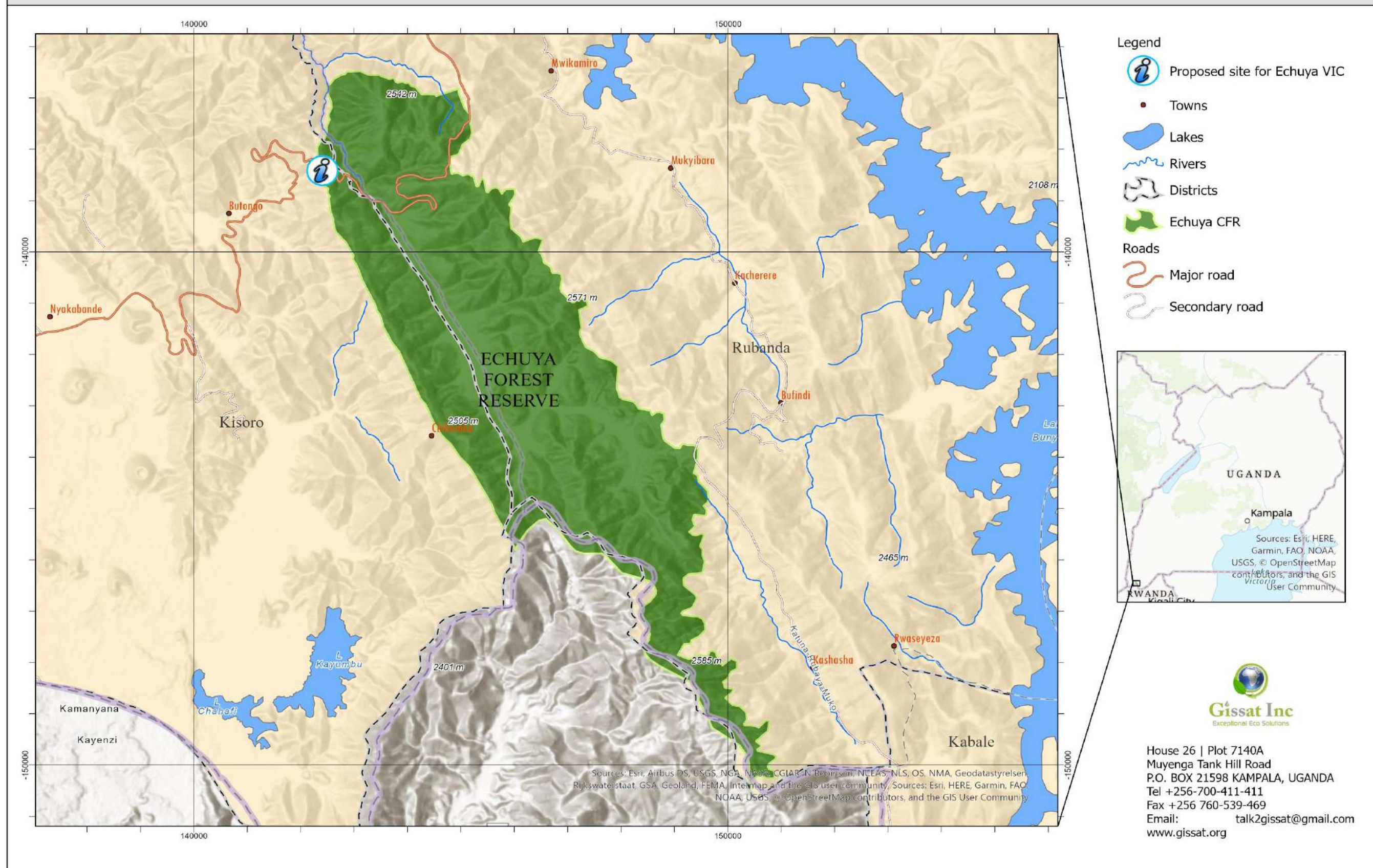
The project will support the development of visitor information infrastructure within Echuya CFR. The location of the preferred site within Echuya CFR is shown in the table below and Map 4.1 below. The Kagano site currently hosts the NFA sector offices that is accessed via Kabale – Kisoro Road. The prioritized site is 51.4km from Kabale town.

Table 4.2: Location of the prioritized sites

S/No.	Proposed VIC	Location details	Coordinates		
			UTM coordinates (35M WGS 1984)		
1.	Echuya Central Forest Reserve	NFA sector offices at Kagano Village, Kalengyere Parish, Muko Sub – County, Rubanda District	A _E	812675	9862271
			B _E	812596	9862353
			C _E	812696	9862394
			D _E	812714	9862320



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



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Map 4.2: Location of the site for the proposed VIC at Kagano

4.5 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 each location, the project architects focused on elements that can be found similar, to create a common, easily recognizable architectural identity for the VIC within Echuya CFR. 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.)

4.5.1 General overview

The design concept followed the below principles detailed below:

- a) 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;
- b) 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.
- c) 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.
- d) 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.

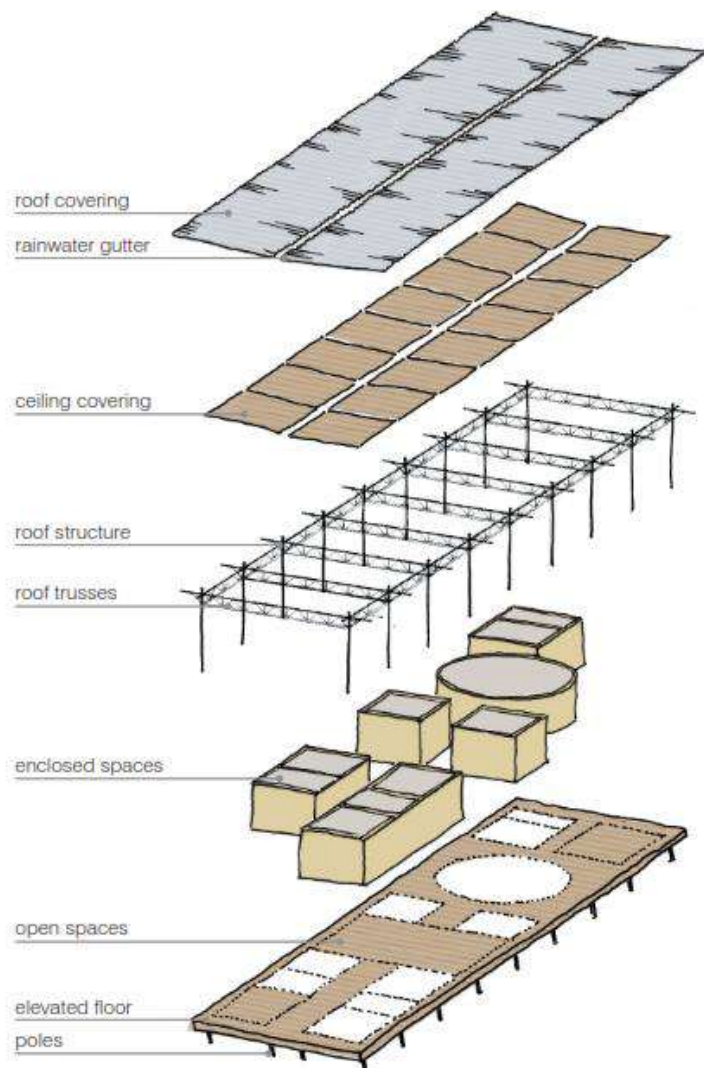


Figure 4.2: Design concept / axonometric diagram

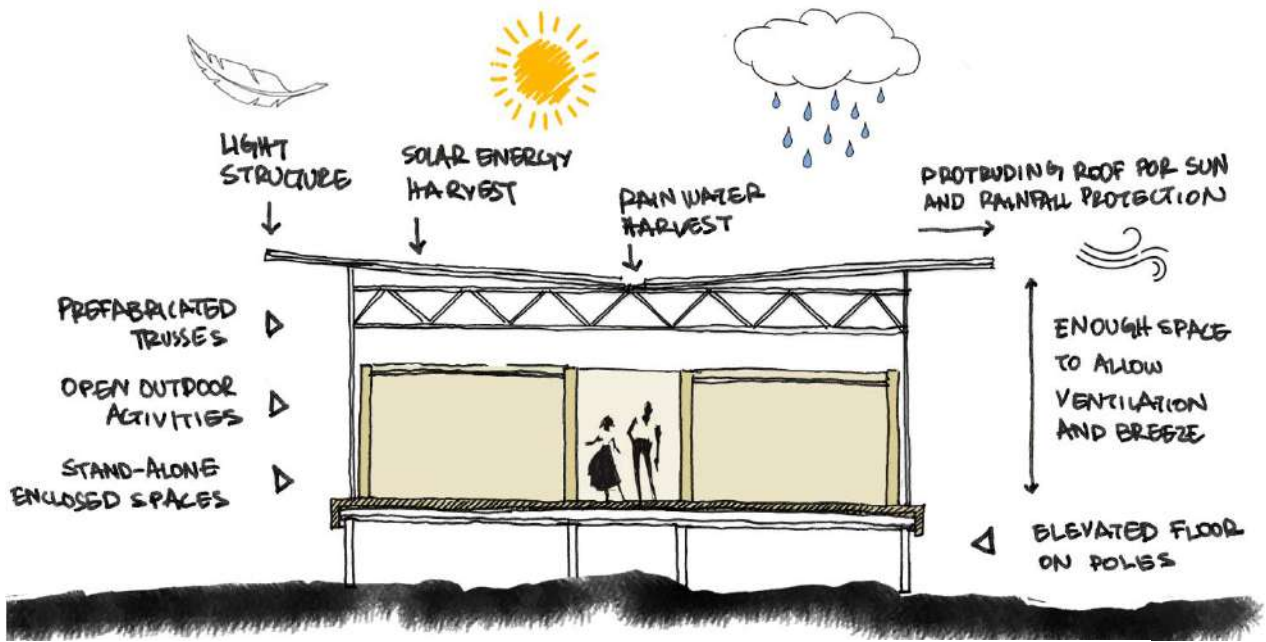


Figure 4.3: Illustration of the design principle



Figure 4.4: An overview of walls and space divisions that will be used depending on the location of the VIC

4.6 Design approach

The design concept was based on the following design approach:

- a) Standardization in plan and technology, to reduce cost in labour, building materials and transport and maximize efficiency.
- b) Creation of a tool-kit of building components
- c) Prefabrication of elements that need quality control
- d) Simplicity for straightforward and fast construction
- e) Robustness to minimize future maintenance and ensure long lifetime

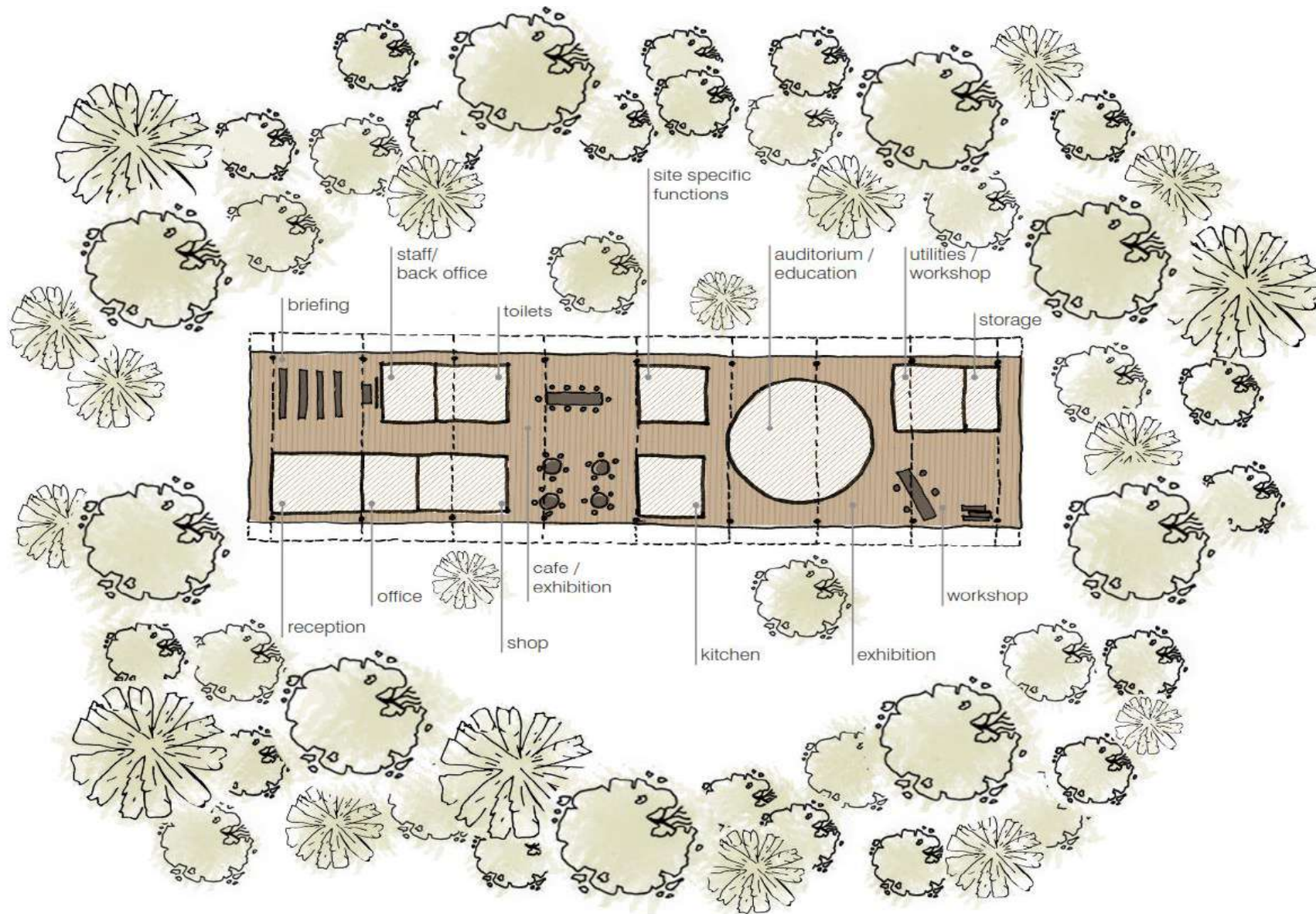


Figure 4.5: Generic layout plan of the proposed visitor information centre

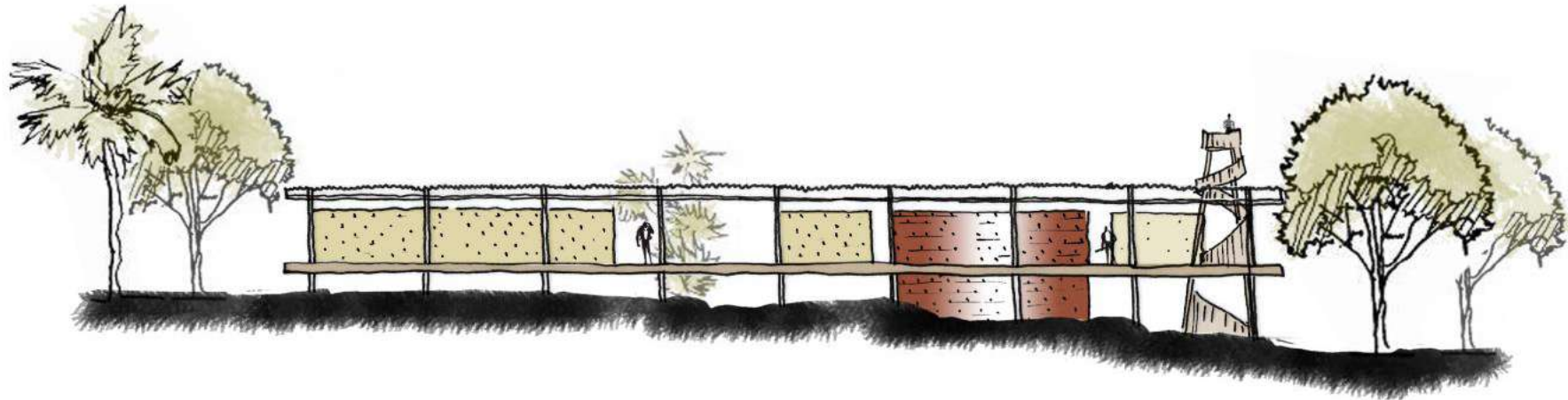
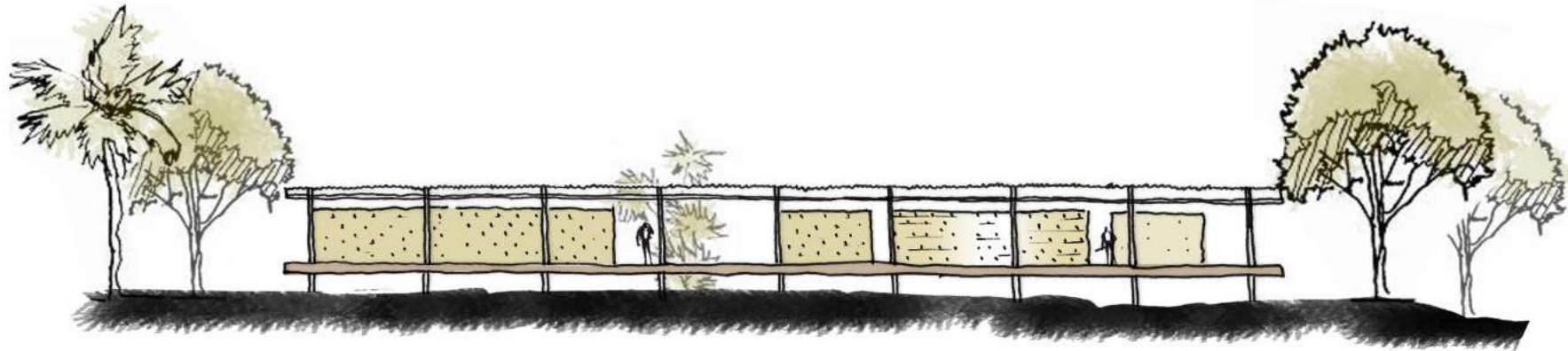


Figure 4.6 Section of a typical VIC

4.7 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.

4.7.1 Landscape zonal concept

4.7.1.1 Car parking and walk ways

There will be 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.

4.7.1.2 Outdoor briefing / seating

For the visitor centre within Echuya, a briefing or seating area shall be incorporated. The site 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.

4.7.1.3 Garden and exhibition area

To highlight the importance of preserving endemic plant species, the VIC 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.

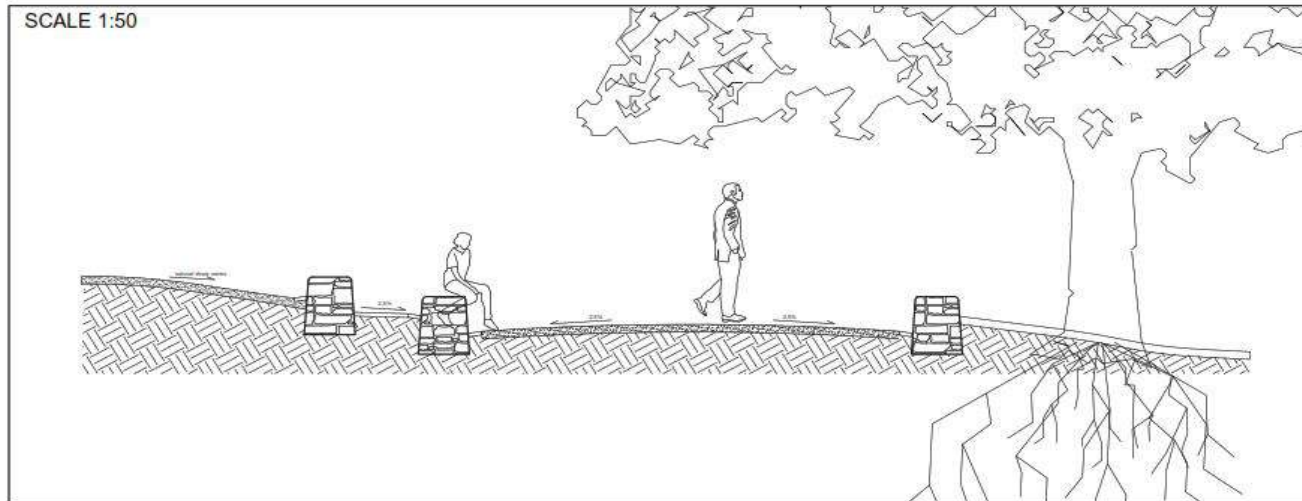
Table 4.5: Proposed landscaping schedule

Grouping / drawing no.	Buildings	Unit area (sqm)	No. of units/capacity	Total area sqm (outdoor)
LANDSCAPE AND PARKING FACILITIES				
LA1	<i>Parking areas</i>			
LA 1	Parking areas (cars) gravel with stone kerb	14	7	98
LA 1	Parking areas VIP cars (concrete pavement)	14	2	28
LA 1	Parking areas (coach) gravel with stone kerb			

Grouping drawing no.	Buildings	Unit area (sqm)	No. of units/capacity	Total area sqm (outdoor)
LA2	<i>Roads, pathways, steps</i>			
LA 2	Footpath (locally sourced stone in mortar)			140
LA 2	Footpath (roughened concrete)			
LA 2	Murram Road			1000
See LA 1	Gravel road / parking area		260	
See specifications	Stone steps			
LA3	<i>Surfaces and open spaces</i>			
LA 3.1	Botanical garden/flower orchard area	95	1	95
see LA2	Terrace/hardscape (locally sourced stone in mortar)	40	1	40
	Outdoor seating area (murram with small natural stone edging)	250	1	250
	Cleared open space (murram/sand/natural)			
LA 3.2	Viewing deck	20	1	20
LA 3.3	Performance platform			
LA4	<i>Landscape objects</i>			
LA 4.1	Entrance board (concrete)		1	
LA 4.2	Seating - bench (stone + timber)		4	
see LA 4.2	Seating - large bench	~10m long	2	*
	Kiosk table - brick/plastered concrete (2mX1.2X0.6m)			
LA 4.3	Briefing area (murram) circular benches (stones)			
LA 4.4	Picnic bench			
LA 4.5	Trash bin (bamboo)		5	
LA 4.6	Exhibition display (timber)		1	
LA 4.7	Solar led outdoor light		10	
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	<i>Landscape plants and trees</i>			
LA 5	New tree (medium size, flowering)		10	
LA 5	New tree (large, broad leaf)		10	
LA 5	New tree (large special tree)		2	



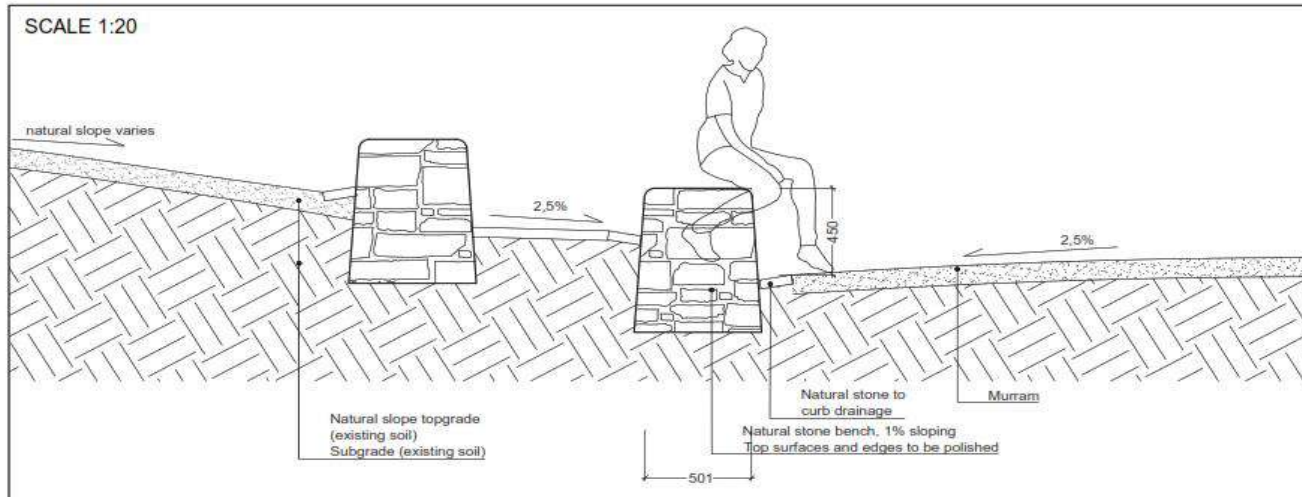
Figure 4.7: illustration of the typical landscaping options that may be considered for the subject VIC



KEY & REFERENCES



Example seating



 <p>F&W F&W LINK Plot no: 14174 3000 Sq. Units Plot ID: F&W Link 14174 www.f&wlink.com.ug</p>	LANDSCAPE DRAWINGS	SCALE	1:20
	VISITOR INFORMATION CENTRES FOR PROTECTED AREAS	FORMAT	A3 (297x420mm)
	Client World Bank Group Uganda (NFA & UWA)	DATE	31.07.22
	LA 4.3 GATHERING SPACE	NO. SHEETS	380
	FINAL	DATE	LA_4.3

Figure 4.8: illustration of the outdoor briefing and gathering areas for the subject VIC

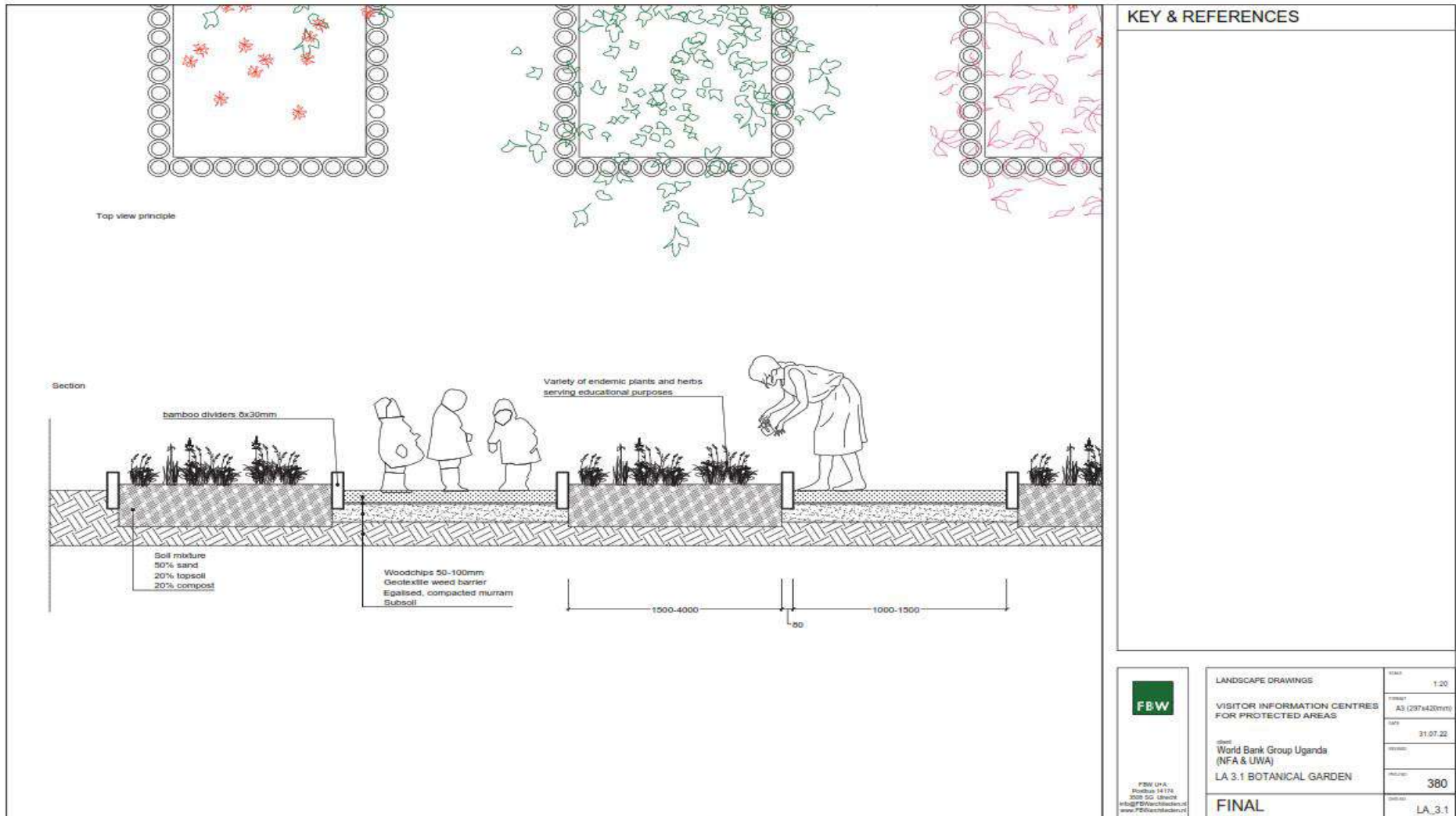


Figure 4.9: An overview of botanical gardens that shall be considered for the proposed VIC

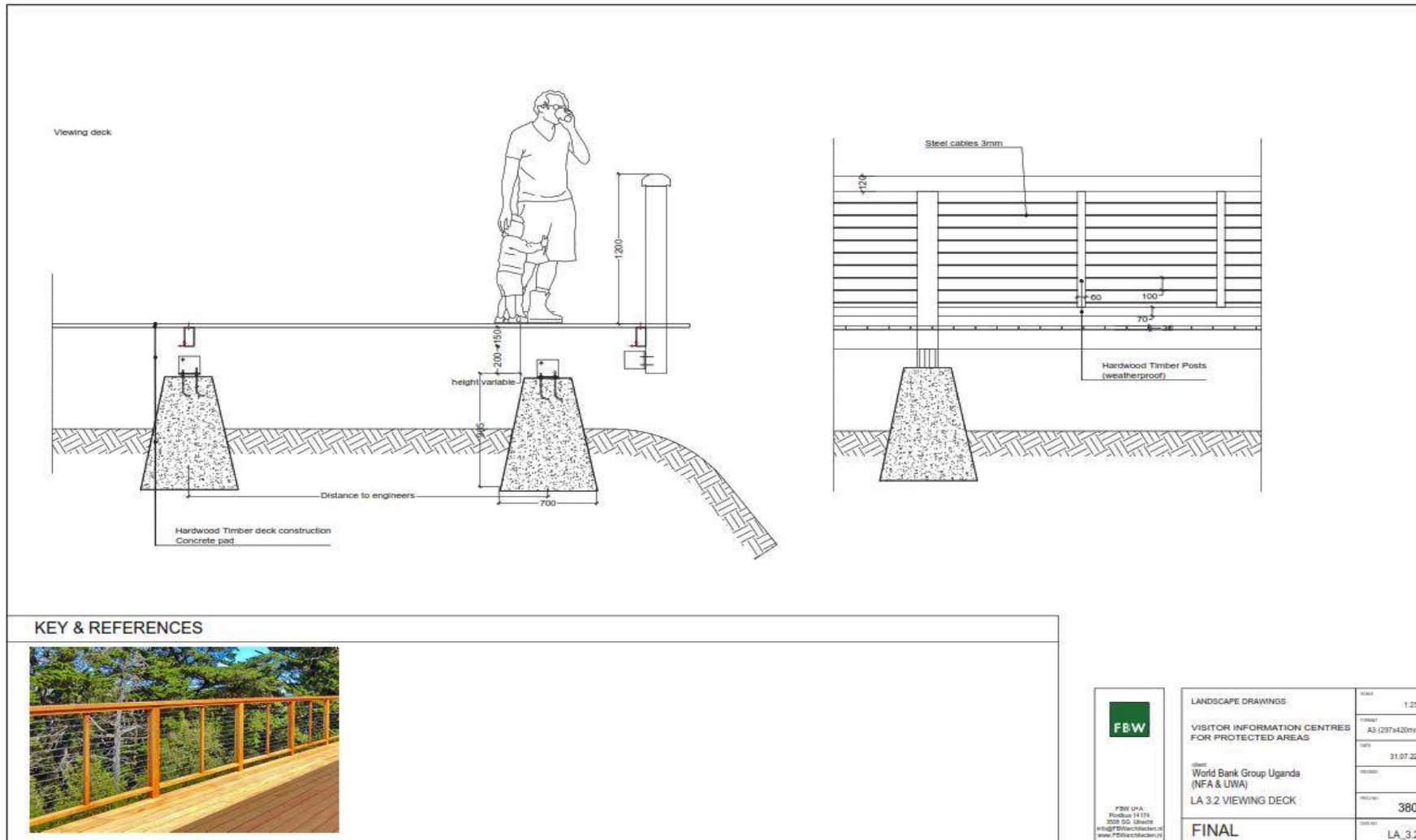


Figure 4.10: A cross section of the viewing deck at the proposed VIC

4.8 Proposed components

With a carrying capacity of the 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 4.6: Overview of components at the proposed VIC

Public facilities			
S/no.	Space function	Area indoor (m²)	Area out door (m²)
1.	Reception area	40	
	Reception Office		
2.	Auditorium / education	50	
	Seating area		
	Tech room		
3.	Waiting and instruction		20
	Briefing area		
4.	Café / Exhibition	15	70
	Seating area		
	Kitchen / counter		
	Exhibition area		
5.	Medical services	10	
	First aid clinic		
6.	Sanitary facilities	22	
	Toilets / Washrooms		
	Showers		
Service facilities			
7.	Staff facilities	15	30
	Staff room / back office		
	workshop		
8.	Storage and safety facilities	15	

	Supply room / storage Strong room		
1.	MEP Services Tech room / generator / transformer Water / solar heaters Water pressure tank	8	4
2.	Electrical Service CCTV Equipment IT equipment	2	
3.	Waste disposal services Centralized on site Garbage containers		6
4.	Parking areas Parking area (Cars) Parking area (Coach)		190
5.	Landscaping Garden Outdoor seating		25
	Subtotal indoor roofed	206	
	Circulation, construction 30%	62	
	Total indoor roofed	267	
	Total outdoor roofed		129
	Total roofed	396	
	Total outdoor (landscape)		217

4.8.1 Design brief

The design approach for the Echuya VIC is focused on the facility being an educational centre for the natural and the cultural values of the surrounding location / communities. The facility shall offer multifunctional rooms and spaces that can accommodate both community and visitors. The walls of the thicker structure are to be made of volcanic stone, while the rooms will be furnished by bamboo of Yashunia Alpine that characteristic of the project area.

The landscape elements are focused on maintaining the natural feeling of the forest. This will be achieved by incorporating a smaller garden that will showcase special plant species and medicinal plants endemic to the project area. It is also aimed to create some viewpoints so that the surrounding mountains and forest can be seen. Design attributes specific to this VIC include but not limited to:

- a) Bird watching area; and
- b) Botanical garden for highland wetland fauna.

Figure 4.11 below highlights the 3D artistic impression of the proposed VIC, while figures 4.12 – 4.13 show the placement of various project components

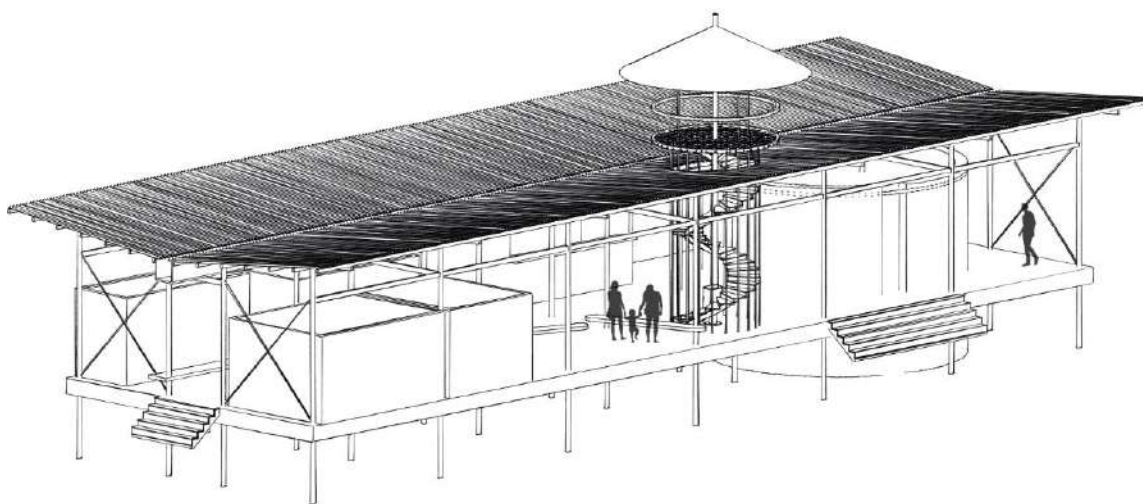
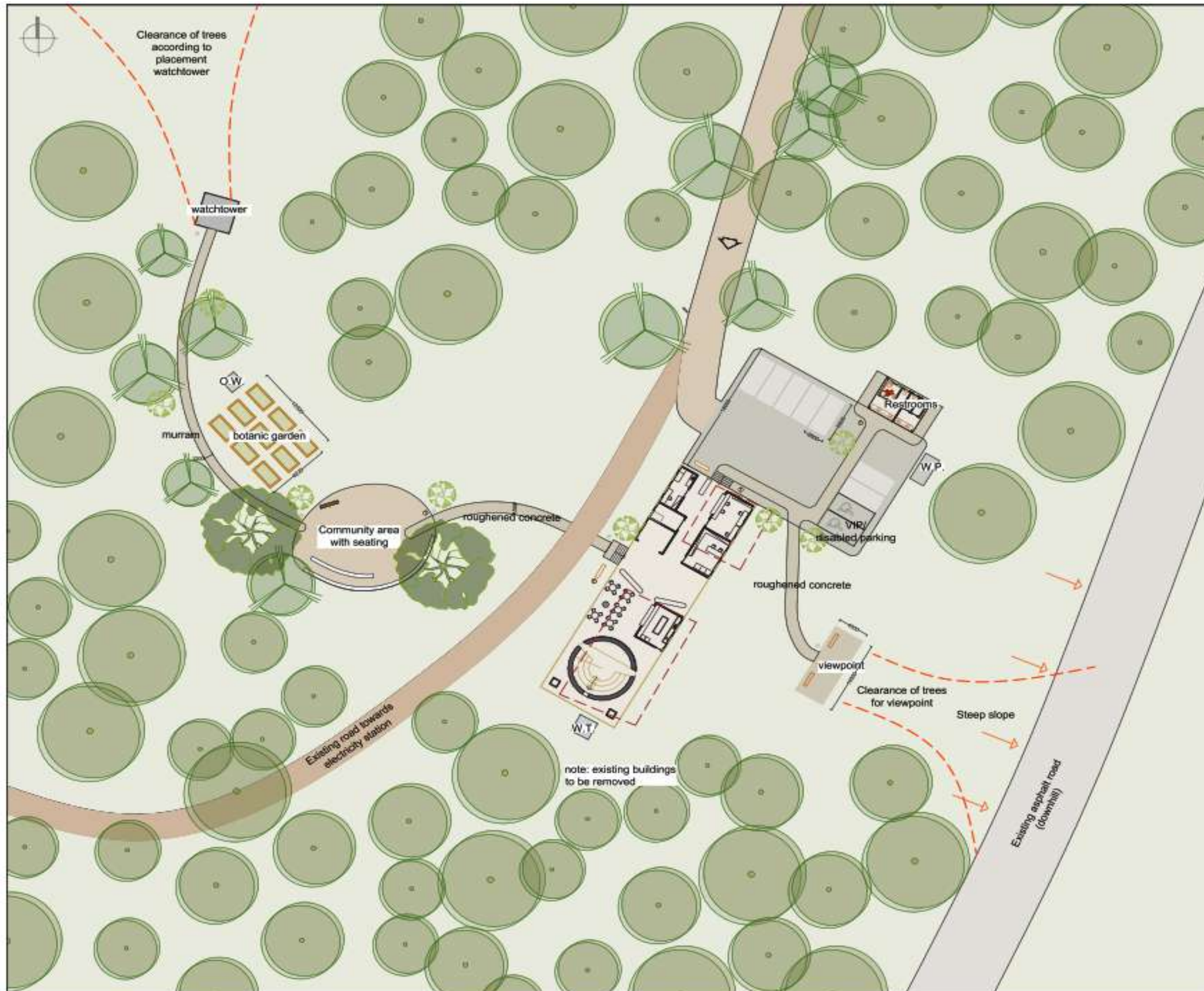


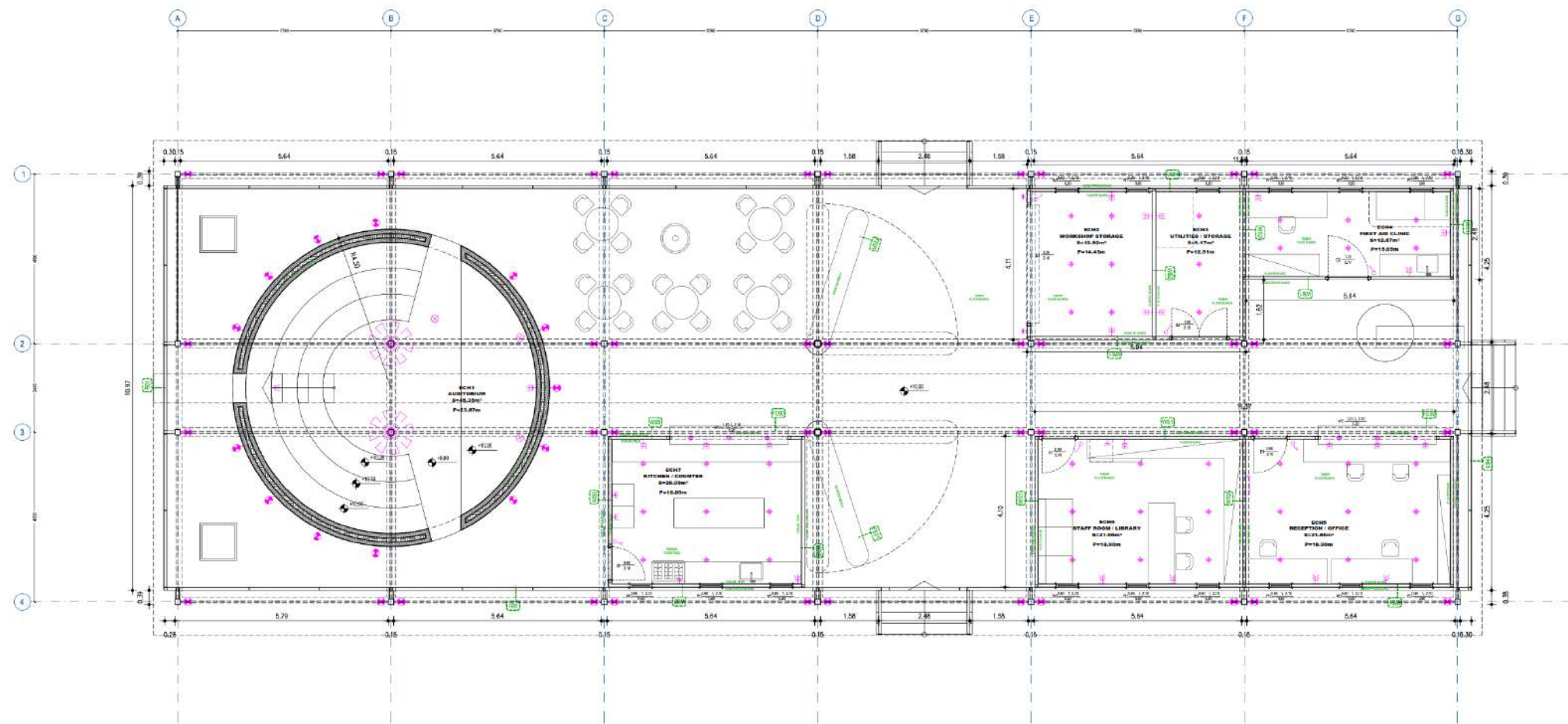
Figure 4.11: 3D artistic impression of the proposed VIC



KEY	
	Surface water run off
	Exhibition display - entrance board [LA 4.1] - [LA 4.6]
	Disabled parking [LA 1]
	Driveway direction
	Murram road [LA 2]
	Gravel road [LA 1]
	Pathway [LA 2] Natural stone in mortar
	Pathway garden [LA 3.1] Woodchips
	Cleared open space [LA 3]
	Botanic garden [LA 3.1] Flower and herbal groundcover plants
	Outdoor light [LA 4.7]
	Trash bin [LA 4.5] Bamboo
	Solid / Organic waste collection (2x2m) specs 4.14
	Water tank (see MEP) specs 4.13
	Furniture/seating [LA 4.2 - 4.3 - 4.4] timber, stone
	Tropical High Forest Species See ESIA scoping report
	Exceptional tree (new) Large, special 'crowned' tree species s.a. Ficus Sur
	Small flowering tree (new)
	Lowland Tropical Forest species Existing: Terminalia superba, Senna spectabilis, Cassia siamese and Cedrella odorata, etc.
	New tree (broadleaf) According to endangered species in ESIA of site location
	Existing building to be removed

 <small>FBW U+A Postbox 14174 2598 SG Utrecht info@fbwarchitecten.nl www.fbwarchitecten.nl</small>	LANDSCAPE DRAWINGS	SCALE	1:500
	VISITOR INFORMATION CENTRES FOR PROTECTED AREAS	FORMAT	A3 (297x420mm)
	client World Bank Group Uganda (NFA & UWA)	DATE	31.07.22
	SITE PLAN - ECHUYA	REVISION	
	FINAL	FILE NO	380
		DWG NO	380_LA_ECH

Figure 4.12: Proposed VIC master / site lay out plan



<p>DRAWING SYMBOLS</p> <p>STRUCTURAL AXES (K) — structural height at finished floor</p> <p>DOOR — structural opening height from finished floor</p> <p>WINDOW — W1 — height at finish</p> <p>SECTION SYMBOL — DETAIL</p> <p>DETAIL SYMBOLS</p> <p>WS — WALL STRUCTURE DETAILS</p> <p>F — FLOOR STRUCTURE DETAILS</p> <p>R — RAILING</p> <p>C — CEILING STRUCTURE DETAILS</p> <p>SC — SPECIAL CONSTRUCTION</p>	<p>ELECTRIC SYMBOLS</p> <p>⊗ light fixture</p> <p>⊕ light fixture, wall mounted</p> <p>⊙ spot light fixture</p> <p>⊕ light fixture, water proof</p> <p>⊕ light fixture, water proof, wall mounted</p> <p>⊕ switch, one pole</p> <p>⊕ two-way switch, single pole</p> <p>⊕ switch, two pole</p> <p>⊕ wall socket, single</p> <p>⊕ wall socket, double</p> <p>⊕ wall socket, water proof</p>	<p>NOTES</p> <p>ALL DIMENSIONS ARE IN m</p> <p>FLOOR LEVELS ARE IN m</p> <p>CONSULTANT ARCHITECTS MUST BE INFORMED FOR ANY DISCREPANCIES BETWEEN DRAWINGS OF THE DIFFERENT DISCIPLINES</p> <p>ALL DIMENSIONS AND SECTION OF STRUCTURAL ELEMENTS SUBJECT TO STRUCTURAL ENGINEER</p>	<table border="1"> <thead> <tr> <th>MARK</th> <th>DATE</th> <th>MADE BY</th> <th>REVISION</th> </tr> </thead> <tbody> <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> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	MARK	DATE	MADE BY	REVISION																						<p>CONTRACT DRAWINGS</p> <p>NO. 150</p> <p>VISITOR INFORMATION CENTRES FOR PROTECTED AREAS</p> <p>PROJECT: AD (1041841rev)</p> <p>DATE: 27.06.22</p> <p>CLIENT: World Bank Group Uganda</p> <p>GROUND FLOOR PLAN</p> <p>NO. 380</p> <p>ECH.GA01</p> <p>NO. 380_GA_Plans</p>
				MARK	DATE	MADE BY	REVISION																						
<p>DRAWING SYMBOLS</p> <p>DOOR — structural opening height from finished floor</p> <p>WINDOW — W1 — height at finish</p> <p>SECTION SYMBOL — DETAIL</p>																													

Figure 4.13: Ground floor plan of the Echuya VIC building

4.9 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 nor 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 Echuya CFR, the proposed VIC shall stand out as 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, the design for the VIC have prioritized the cultural values and beliefs of the host communities. This is evidenced by the construction materials and the kind of information to be displayed at the VIC.

Current Engagement of NFA with the Batwa in target Protected Areas

NFA has entered into collaborative forest management agreements with four CFM associations in managing the buffer zone of the CFR, these CFM agreements cover all villages around the Echuya forest in Rubanda and Kisoro Districts:

- Bufundi Echuya Forest Conservation and Livelihoods Improvement Association (BECLA) in Bufundi sub-country
- Kanaba Community Development and Echuya Forest Conservation Association (KADECA), in Kabana sub-county
- Muko Echuya Forest Conservation Development Association (MECDA), in Muko sub county - Murora Echuya Forest Conservation and Poverty Alleviation Association (MEFCPAA), in Murora sub-county.

The Batwa in the landscape were all integrated in the CFM groups and associations formed. In all CFM groups the Batwa were voted into executive committees, a breakthrough to Batwa communities starting to participate in decision making discussions. Each of the CFM groups has two Batwa representatives on the CFM group (a registered community-based organization) executive committee (MWE, 2020).

Echuya Ecotourism Association (ECOTA) is a CFM umbrella group coordinating all the CFM groups and implementing ecotourism in Echuya. It has a Memorandum of Understanding with NFA and has two Batwa representatives on the executive committee as well.

One of the groups (MECDA) has the highest number of Batwa CFM members (15 in total) while the other three groups have less than this number.

As a result of its demand driven approach, CFM has been opened to all segments of society adjacent to CFRs to access resources and to participate in social economic development. In Echuya, affirmative action has been taken for the Batwa to harvest more bamboo and wood fuel from the forest than other members, recognizing that they have never acquired land. Under the CFM arrangement, it was agreed that the Batwa shall collect fuel wood (dead and dry wood) on a daily basis, while the rest of the tribes (Bakiga and Bafumbira) collect once a

week. This goes beyond the Batwas' immediate subsistence livelihood because the Batwa sell wood fuel for cash.

In all CFM groups, people have rights to access forests for cultural values, medicinal herbs, honey harvesting, sand (using manual extraction), water, grass, ropes, and fee-based wood fuel and rattan extraction (with the exception for Batwa, as described above). See Annex 3 for a complete description of agreed arrangements for resource use in Echuya forest, including special conditions for CFM groups and the Batwa.

The CFM agreements were signed in 2007, for a 10-year period, and they had lapsed. However, NFA respects agreed arrangements with the communities and intends to renew the CFM agreements with project support.

The Echuya CFR Forest Management Plan (2016-2026) includes a requirement for the management to prioritize the socio-economic and cultural rights of the indigenous Batwa in collaboration with other partners.

4.10 EHS safeguards during the site preparation and construction phases

4.10.1 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.

4.10.2 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 each 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.

4.10.3 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

4.10.4 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.

4.10.5 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.

4.10.6 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.

4.10.7 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.

4.10.8 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); Rubanda 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).

4.10.9 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.

4.10.10 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.

4.11 Environmental, Health and Safety systems

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

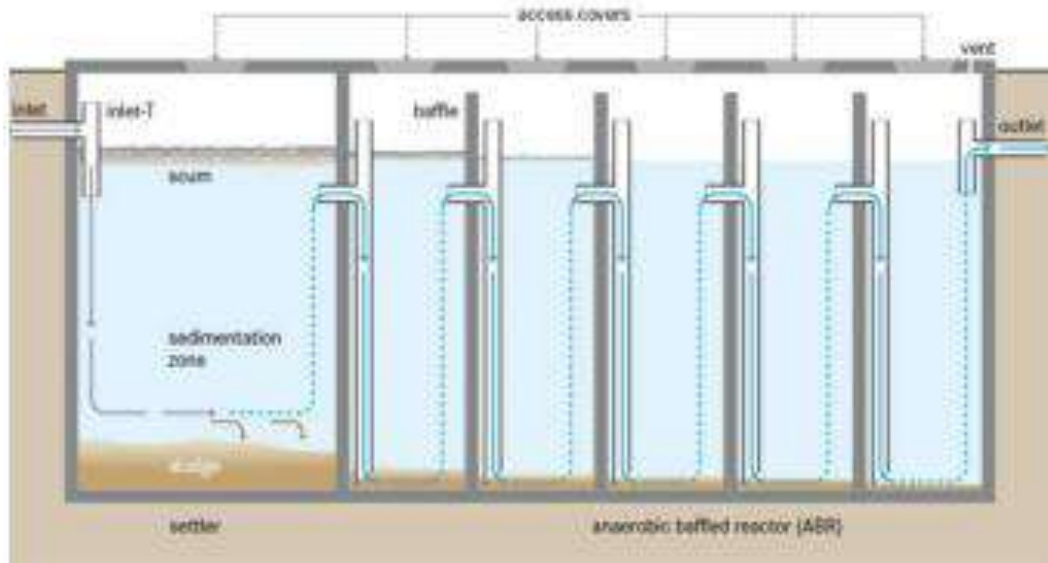
4.11.1 Drainage

4.11.1.1 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.

4.11.1.2 Waste Water Handling and Disposal

Waste water from all wash rooms and staff washrooms will be channelled through manholes to the decentralized Anaerobic Baffled Reactor (ABR) illustrated in figure 4.14 below safely located at least fifty meters from key sensitive receptors. Compared to a conventional septic tank, an ABR provides additional treatment of the water before being released into the ground through percolation trenches. The treatment occurs in chambers referred to as 'baffles' which hold back scum allowing the sludge to settle. The sludge contains micro-organisms that take on the anaerobic reaction through which the organisms are broken down. Methane is generated during this process and safely vented off. The resulting liquid effluent is considerably cleaner compared to the output of a conventional septic tank.



4.11.2 Wate Figure 4.14: Anaerobic baffled reactor

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.

4.11.3 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.

4.11.4 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 all 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.

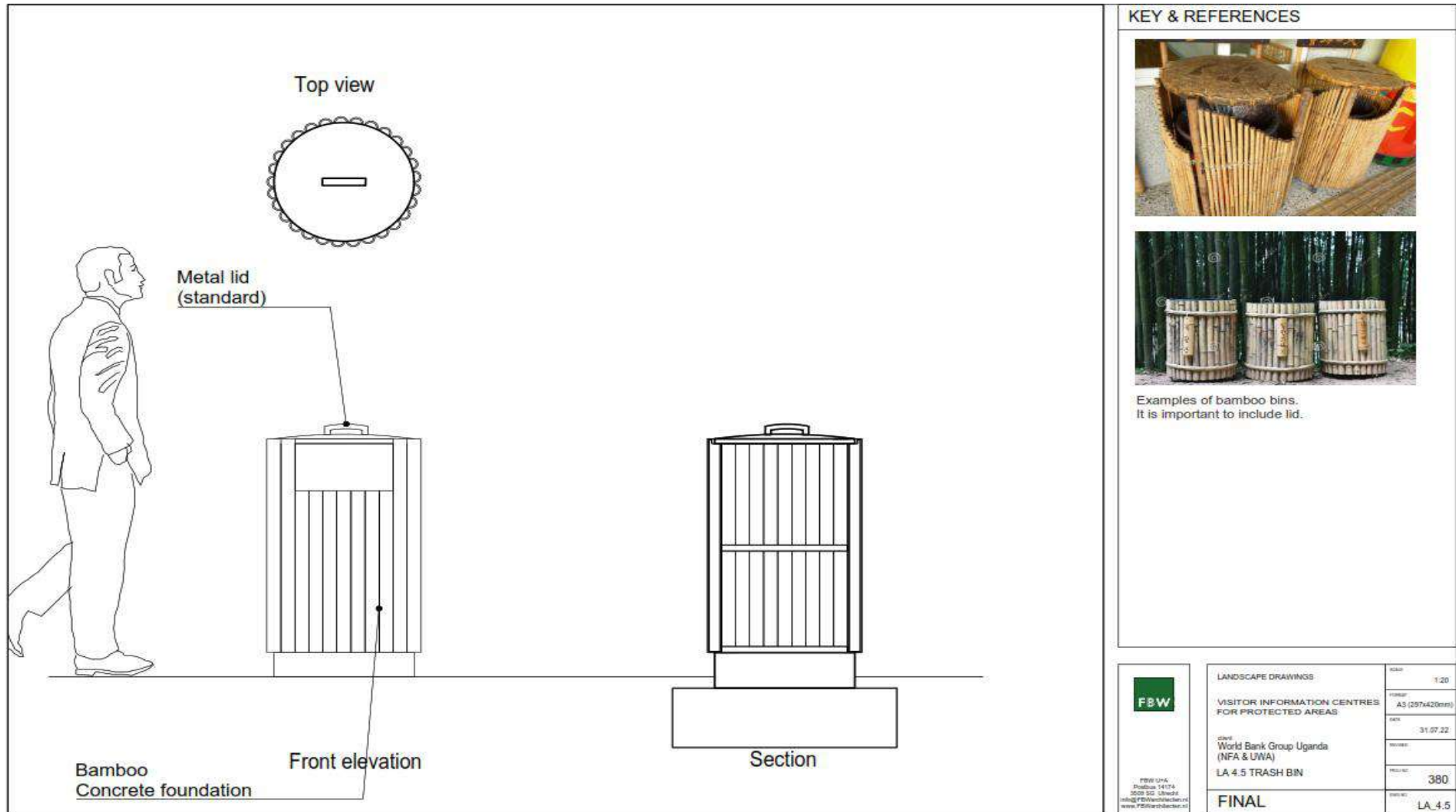


Figure 4.15: An illustration of waste bins to be utilized at the proposed VIC

4.11.4.1 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.

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

4.11.5 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.

4.11.6 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 each 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 facility.

4.11.7 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.

4.11.8 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.

4.11.9 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 on 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
- c) Formulating incident report form for each 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, COVID – 19 guidelines, etc.

4.11.10 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.

4.11.11 General health and safety at the VIC

The Echuya VIC needs to comply with the Occupational Health and Safety (OHS) regulations and should have a valid OHS certificate all the times. The proposed VIC shall form part of the workplace and needs 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 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
- e) display of signage & emergency evacuation charts within the VIC.

4.11.12 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.

4.12 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 \$ 896,171.49 (Incl. VAT) (United States Dollars Eight Hundred Ninety-Six Thousand One Hundred and Seventy-One and cents Forty-Nine). The project will be implemented by the National Forestry Authority. The primary contact information of the proponent is given in table 2.7 below.

Table 2.7: Details of the proponent

No	Bill selection description	Estimated cost (Excl. VAT)- (US \$)	VAT (US \$)	Amount	Estimated Total (Incl. VAT)	REMARKS
Estimated cost of Structures, Services & External Works						
1	Preliminaries	40,243.00				
2	Civil/Main Builder's Work	382,856.78				
3	Mechanical and Electrical costs	125,442.95				
4	External Works	66,600.00				
5	Provisional Sums	20,500.00				
6	Contingency	31,782.14				
7	Environmental & Social Management Costs	23,000.00				
SUB-TOTAL		690,424.87				
b	Land acquisition costs					
c	Local Authority Charges					
d	NEMA Licensing Fees					
e	Professional Fees	69,042.49				
	TOTAL ESTIMATED INVESTMENT COST (US \$)	759,467.36	136,704.13		\$896,171.49	

Name	National Forestry Authority
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	\$ 896,171.49

5.0 BASELINE INFORMATION FOR THE PROPOSED PROJECT SITE

5.1 Introduction

The following baseline information details on environmental, socio-economic and bio-physical characteristics of the site. It is meant to provide for a benchmark for continued monitoring and assessment of the impact of implementing the proposal on the environment.

5.2 Socio-economic setting

5.2.1 Local Government and Administration

Rubanda District is located in the South West of the Republic of Uganda. It borders with the Districts of Kisoro to the West, Rukungiri and Kanungu to the North, Kabale and Rubanda to the East and the Republic of Rwanda to the South. It is a highland District of Uganda. It covers a land area of 660.2 sq. km. It consists of two constituencies divided into 7 sub-counties and 2 Town Councils, 49 parishes which are further divided into 461 villages/cells. Rubanda District has a total area of 660.2 square kilometres of which 1695 sq.km is covered by land and 48.5 sq.km is covered by water body, swamps/wetlands is 79.4 sq.km and marginal land is 41.1 sq. km.

The proposed project is located within Echuya Central Forest Reserve at NFA sector offices in Kagano Village, Kalengyere Parish, Muko Sub – County, Rubanda District.

Echuya Central Forest Reserve (EFR) is located in south western Uganda within the districts of Rubanda and Kisoro. The forest reserve stretches along the sub-counties of Bufundi and Kanaba in Rubanda district; and Muko and Murora in Kisoro district. Echuya CFR Lies between latitude 1°13' - 1°21' S and longitude 29°46' - 29°52' E. It is 23km East of Kisoro Town and about 40km West of Kabale Town.

5.2.1.1 Legal Status and ownership

Echuya forest reserve was constituted in 1939 and was first gazetted and declared as an undemarcated crown forest of 4,144 Ha in 1941. It was demarcated in 1944 and re-gazetted as a Central Forest Reserve by Legal Notice No. 41 of 1948 with an area of 3,403Ha. Management of the EFR forest is vested in the National Forestry Authority (NFA) under Section 54(i) of the National Forestry and Tree Planting Act 2003, while Section 33(1) stipulates rights and privileges of communities.

5.2.1.2 Boundaries

The 45 km forest boundary of Echuya CFR is fully demarcated. 2kms follow natural stream, 9km forms an international boundary along North east border of Rwanda and 43km is planted cut line adjoining local communities. The Eastern boundary is marked by R. Mukashayu valley, part of Kabale-Kisoro road which leads to a footpath that continues to Kashasha on Uganda-Rwanda border. The western edge starts in River Mulindi valley and joins Kanaba - Kabahunde road which joins a clear foot path from the Bishop's House along the continuous ridge up to Rwanda - Uganda border.

5.2.1.3 Threats and Conflicts

5.2.1.3.1 Threats

There are many threats to the forest, the major ones being;

1. Since gazettement of Mgahinga and Bwindi as National parks in 1991, Echuya became the main source of bamboo in the country. Export of bamboo forms a big market for handcraft products and materials in the neighbouring Rwanda and Democratic Republic of Congo. This has led to large extraction of green and young bamboo shoots leading to over exploitation and possible unsustainable supply from this forest.
2. Illegal grazing and monkey damage has destroyed most of young bamboo shoots and this has interfered with the regeneration of the EFR.

3. Fires arising from wild honey hunters and cultivators neighbouring the reserve have caused fragmented damage to the forest, more especially Muchuya swamp.
4. Boundary encroachment by forest adjacent communities.

5.2.1.3.2 Conflicts

Echuya CFR is the main source of timber and non-timber forest products and services and any access and use controls and restrictions encounters resistance, thus the conflicts:

- i. Transboundary conflicts between Ugandans and hostile encroachers from Rwanda.
- ii. Controlled access to the forest for various forest products by the adjacent communities both in Rubanda and Kisoro districts, to avoid overharvesting.
- iii. Batwa people harvest large quantities of bamboo, shifting from one end of the forest to another in exchange for food from communities.
- iv. Forest boundary on the Rubanda side is not very clear causing disputes with local communities who tend to encroach on the EFR.
- v. Some communities do not abide by arrangements made to enable them access the forest products on specified days in a week, thus complicating working relationship between them and NFA management.

5.2.1.3.3 Problems

Problems identified relate to maintaining the EFR integrity, control of forest resource use by communities and violations of the National Forestry and Tree Planting Act 2003. These include:

1. Encroachment mainly due to high population and shortage of land for agricultural production;
2. Illegal cutting of forest produce, especially bamboo exceeding authorized quantities; forest burning/ fires, particularly in Muchuya swamp, by hunters in search of wild animals.

5.2.1.3.4 Community use of forest products

Livelihoods of communities surrounding Echuya FR depend on subsistence agriculture, forest products for commercial and domestic purposes and petty trade. Demand for use of forest products is very high as there is limited alternative source of natural forest products.

Table 5.1: Community use of forest products

Group	Forest products
Batwa community	<ol style="list-style-type: none"> 1. Bamboo (building and for sale) 2. Ropes 3. Water (domestic use) 4. Handicraft material 5. Honey 6. Rainfall (microclimate)
Youth	<ol style="list-style-type: none"> 1. General income 2. Employment opportunities 3. Government revenue 4. Building materials 5. Herbal medicine 6. Water 7. Honey 8. Firewood 9. Timber 10. Sand/murram 11. Fruits 12. Wildlife habitat 13. Tourism

Group	Forest products
	14. Tree wildings (for planting)
Women	<ol style="list-style-type: none"> 1. Firewood 2. Craft materials 3. Building materials 4. Water 5. Rainfall
Old/Married men	<ol style="list-style-type: none"> 1. Water (domestic and animals) 2. Bamboo (building) 3. Firewood 4. Honey 5. Rainfall 6. Ropes and grasses for thatch 7. Herbal medicine 8. Tourism 9. Murrum 10. Employment opportunity

5.3 Demographic characteristics

According to the 2014 national census the population of the District was estimated at about 196,896 people, with an annual population growth rate of 1.1%. Rubanda District is densely populated with an area of 660.2 square kilometres, the population density in the District as estimated by the 2014 housing and population census is at 298.2 people per km². The average household size of 4.4 persons. The estimated population for 2020 was at 208500 people. Table 5.2 presents the population of Rubanda district by sub-county.

Table 5.2: Rubanda Population by Sub County and by Sex

Sub County	Male	Female	Total	Sex Ratio	Land Area	Pop Density
Bubare	15908	17912	33820	0.89	77.90	434.1
Bufundi	11685	13906	25591	0.84	80.70	317.1
Hamurwa	12637	14348	26985	0.88	91.20	295.9
Hamurwa Town Council	2403	2697	5100	0.89	15.90	320.8
Ikumba	14307	16998	31305	0.84	129.60	241.6
Muko	22194	24342	46536	0.91	143.00	325.4
Nyamweru	8155	9205	17360	0.89	60.40	287.4
Ruhija	4722	5477	10199	0.86	61.50	165.8
Total	92011	104885	196896	0.88	660.20	298.2

Source: UBOS, 2014

5.4 Social Cultural sites

The Batwa are the indigenous people in the EFR and hold strong social and cultural attachments to the forest. Batwa resettlement programs with Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBIFCT) and United Organisation for Batwa Development in Uganda (UOBDU) projects have been transforming Batwa culture and social setup by integrating their livelihoods with neighbouring communities of Bakiga and Bafumbira. Some of social cultural sites within Echuya Central Forest Reserve include:

- a) **The Batwa Cultural Trail:** This is a guided walk through the forest that showcases the traditional lifestyle and culture of the Batwa pygmies, the indigenous people who used to live in the forest before they were evicted. The trail offers a chance to learn about the Batwa's history, beliefs, skills, and challenges, as well as to interact with them and support their livelihoods.

- b) **The Muchuya Swamp:** This is a high-altitude swamp that lies within the forest and is home to a variety of wildlife, especially birds. The swamp is also a sacred site for the local communities, who believe that it has spiritual powers and healing properties. The swamp is also a source of water and medicinal plants for the locals.
- c) **The Echuya Forest Community Campsite:** This is a community-run campsite that offers accommodation and services to visitors who want to explore the forest and its surroundings. The campsite is located near the forest edge and has a panoramic view of Lake Bunyonyi and the Virunga volcanoes. The campsite also provides opportunities for visitors to engage in cultural activities, such as dancing, storytelling, cooking, or crafts with the local communities.

5.5 Infrastructure and Social Services

5.5.1 Health services

Rubanda district health system comprises of 10 facilities of which 2 are Health Centre IVs and 8 are Health Centre IIIs. From consultations made at Rubanda District Local Government, the project area is served by Muko Health Centre II.

5.5.2 Transport infrastructure and Traffic flow

The District is generally well served with road network although some of them are un-motorable during the rainy season. The total network of feeder roads in the District is 1,267.1km. Kabale-Kisoro tarmac road is a major access to Echuya CFR, running almost east-west through the reserve in the northern part. Muko-Bufundi-Katuna murram road reaches Rushayu area in Kashasha via Ikamiro, Kacerere and Kishanje. During the rainy season, the road condition is poor. NFA has two built forest stations at Rwaburimbe and Kanaba with permanent houses which require minor repairs and maintenance.

5.5.3 Educational Facilities

Rubanda district has a total of 110 primary schools, about 8 government aided secondary schools, 5 private secondary schools. There is a primary school to the North of the project site at approximately one kilometre – Muko Primary School. There is also a secondary school known as Muko Secondary School. From consultations with the people in the community, the team found out that there is another primary school, St. Peters Karengyere Primary School which is located at approximately 6 kilometres away from Kagano village.

5.6 Biophysical profile

5.6.1 Vegetation

Rubanda districts comprises of two vegetation zones which include; high altitude forest and forest/savannah mosaic.

1) High altitude forest

The high-altitude forest comprises those, which lie at altitudes over 5,000 feet, mainly on the lower slopes of the major mountains, but also in the highlands of Rubanda especially Bwindi Forest. Though not including such a large number of species as the forests at medium altitudes, these forests are quite varied in form and composition; a variation, which reflects the wide range of sites that, they occupy.

2) Forest/Savannah Mosaic at high altitudes

Only few remnants of forest still survive in the district and at altitudes between 2,200 m and 3,200 m there is a mosaic of patches of savannah and scrub at various stages of the succession back to forest, where the influence of fire and cultivation has been reduced. The savannahs delivered are barely distinguishable, the tree layer which is often scarce and usually 2-4m high, is characterised by *protea gagwedi* and *faurea saligua* and the grass layer, 0.6-15m high is dominated by *Andropofon distachyus*, *cymbopogon validus*, *exotheca abyssiniaca* of *hyparrhenia cymbaria*. At the lower limit, this merge gradually into dries

combretum savannah and above into a space stunted health. Further *pennisetum claudesinum* grasslands have developed on deep soils at altitudes of 5,500-7,000 feet in southern part of the District following the destruction of the original forest cover. In the South Western part of the District the shallow soils support grasslands in areas which were originally forests. Small areas are covered by evergreen thicket e.g. Echuya/Orugano. Table 5.3 presents the forest cover in Rubanda district.

Table: 5.3: Forest cover in Rubanda

Reserve	County	Type of Forest	Total area (ha)
Mafuga	Rubanda/Kanungu	Coniferous plantation	2,670
Kiirima	Rubanda	Coniferous plantation	1,028
Echuya	Rubanda/Bufumbira	Bamboo	3,405
Muko	Rubanda	Coniferous plantation.	168
Bwindi	Rubanda/Kanungu	Impenetrable	

Source: Rubanda District Development Plan, 2020- 2025

The vegetation in Echuya CFR is dominated by mountain bamboo (*Arundinaria alpina*) on the northern and north-east. Human activities especially in the south and western parts have increased processes of regeneration and colonization of bamboo and where the bamboos are scanty, woody and herbaceous plants of *Hagenia abyssinica*, *Macaranga kilimandscharica*, *Myrica sadicifolia*, *Syzygium guineense*, *Rubaus apelatus*, *Crotalaria spp*, and *Faurea saligna* are seen. The EFR has a permanent high altitude; the vegetation in the Muchuya swamp at an altitude of 2300m is dominated by sedges (*Carex* species), tussock vegetation and giant lobelias. There is a small plantation of *Pinus patula* (about 30 Ha) which was planted around 1992/93 near Rwaburimbe Forest Station and is regarded as a seed stand. The relatively small forest is partially degraded due to increasing exploitation pressure from high human population. Table 5.4 presents the flora species in Echuya CFR.

Table 5.4: Flora species in Echuya CFR

No.	Scientific name	Rukiga/Nyarwanda
1.	<i>Polyscias fulva</i>	Omuungo
2.	<i>Hagenia abyssinica</i>	Omujesi
3.	<i>Chrysophyllum albidum</i>	Omushayu
4.	<i>Sapium ellipticum</i>	Omushasha
5.	<i>Carapa grandifolia</i>	Omuruguya, Omutongana
6.	<i>Nuxia congensis</i>	Omubuzigye, Omubiriko
7.	<i>Bersama abyssinica</i>	Omukaka, Omukore
8.	<i>Ekebergia capensis</i>	Omufumba
9.	<i>Turrea robusta</i>	Omukarakare
10.	<i>Macaranga kilimandscharica</i>	



Plate 5.1: Vegetation to the southern section of the project site



Plate 5.2: Vegetation to the eastern section of the project site

5.6.2 Birds

Bird activity around the site captured species such as; Mountain Oriole *Oriolus percivali*, Great blue Turaco *Corythaeola cristata*, White-stirred Robin *Pogonocichla stellate*, Sharpe's Starling *Poeoptera sharpi*, Banded Prinia *bairdii*, and Red-throated Alethe *Chamaetylas poliophrys*.

5.6.2.1 Sensitivity and species of conservation concern

Echuya is known for being the only reserve with the Endemic Grauer's Swamp-warbler *Bradypterus graueri* found mainly in the swampy areas of the forest. However, several other species of conservation value are known for the forest reserve but no such species are known around or were recorded within the environs of the proposed VIC site.

5.6.3 Mammals

Echuya has moderate mammal diversity. From the site records, diurnal primates known include; Chimpanzee *Pan troglodytes* (Critically Endangered), Black and White Colobus *Colobus guereza*, Red-tailed Monkey *Cercopithecus Ascanius*, L'Hoest's Monkey *Cercopithecus lhoesti*, Blue Monkey *Cercopithecus mitis* and Olive Baboon *Papio Anubis*. However, the proposed site is already influenced by the presence of people in addition to its proximity to the Kabale – Kisoro highway and therefore no records of mammals were captured during the survey.

5.6.4 Topography and Altitude

The relief of Rubanda district ranges between 1,200m to 3000m above sea level, with the highest points being to the western and southern parts of the District. Most of Uganda forms part of an interior high plateau comprising of a number of levels, which represent several stages of transition across underlying structures of the ancient rock basement. These stages of transaction are the result of long continued sub aerial denudation, which progressed in phases related to continental cyclic changes but which was complicated in this region by the direct and indirect effects of warping and rift valley development. The interaction of these sub aerial process with the underlying structures and tectonic deformation have produced the present landscape, in the south west of the county the plateau reaches its greatest heights with hill summit levels above 2000m. The rise of the plateau levels to the west is emphasised by the impressive mountainous topography found along the borders. The major volcanoes of the West in Kigezi consist of young conical hills rising to a maximum of over 4000m.

The EFR lies on an altitudinal range of 2270- 2570m on a high ridge running between Lake Bunyonji and Muhavura Lava plains. The Large Muchuya swamp draining north runs in the centre of the EFR.

The EFR represents the highest point on both sides of Rubanda and Kisoro district; the general topographical feature of the area is steep slope, as evidenced by frequent sharp bends along the Kabale – Kisoro road.

5.7 Geographical setting

5.7.1 Geology and Soils

The soils of Rubanda district are mainly volcanic, ferralitic and peat soils. The volcanic soils are mainly found in Muko sub county and major parts of Rubanda town council. The volcanic soils largely depend on bases held in the clay and organic complexes for their fertility. Productivity of ferralitic soils depends on favourable, adequate depth and maintenance of the holmic top soil. On the other hand, the peat soils are mainly found in the papyrus swamps. The peat soils are formed as a result of accumulation of a thick layer of organic matter below swamp vegetation due to slow decomposition. Pit swamps produce rich organic soils for agriculture which dominate the valleys of Rubanda.

The forest lies on earth crust rocks which are generally phyllities, and shales of the Ankole-Karagwean system. The soils are predominantly humic red loams, moderately acidic and deficient of bases. This soil is also dark, weakly structured or structure less loose and friable when it dries up and therefore very susceptible to erosion. The project area mainly consists of volcanic soils.

5.7.2 Climatic conditions

The EFR experiences tropical climate with annual rainfall range of 1,400 -1900mm and annual mean temperature range from minimum of 7-15°C and maximum 20-26°C. The forest receives two rainfall peaks between March to May and September to November with a severe dry spell during December-February and a mild dry weather occurs between June and August. Table 5.5 presents the rainfall distribution in Echuya CFR.

Table 5.5: Rainfall in Echuya CFR

Year	J	F	M	A	M	J	J	A	S	O	N	D	Total
2007	162.7	45	39.2	71.5	61.9	37	34.2	11.5	91.7	87	115.8	95	852.5
2008	21	16.5	116.7	30.7	26	84	11.5	30.1	69.2	139.2	94.5	48.3	687.7
2009	35.3	100.8	72.5	69.4	53.3	0	0	47.4	42.8	75	102.2	33.7	632.4
2010	129.4	58.4	203.7	76.5	72.7	8.2	0	0	141.4	129.9	17.2	93.6	931
2011	25	25	90.2	44.8	33.2	72.6	0	78.8	44.1	65.4	132	13.5	647.1

5.7.3 Hydrology

Echuya is drained by river Mukashayu from Muchuya swamp to the north. R. Mukashayu valley continues to Kashasha on Uganda- Rwanda border. River Mulindi valley on the western edge joins Kanaba-Kabahunde road along Kabale-Kisoro tarmac road. Geographically, the area is associated with up warping of the western escarpment of the Great East African Rift Valley.

5.7.3.1 Wetland valleys and fragile areas

Muchuya swamp forms the main wetland swamp in Echuya forest. River Mukashayu from Muchuya swamp to the north forms Mukashayu valley and River Mulindi valley on the western edge. Geologically, the area is associated with up-warping of the western rift valley and not endowed with open water bodies. Echuya CFR is a high altitudinal ridge, with about 74% exceeding a 15% slope. The forest reserve therefore plays a significant role in stabilizing soils and acting as buffer against strong winds, thus an important water catchment area.

5.8 Site specific baseline data

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

5.8.1 Ambient Noise

From the baseline noise four (4) measurements were carried out within the project site. The results from the baseline noise measurements recorded are presented in table 5.6 and figure 5.1.

Table 5.6: Baseline noise results taken on site during day time

Coordinate (Zone 35N)	Max Noise(dB)	Min Noise(dB)	Average Noise(dB)
812660.61 m E 9862321.55 m S	77.4	53.8	62.3
812687.30 m E 9862357.65 m S	98.3	47.7	64.05
812709.72 m E 9862321.94 m S	87.1	53	63.17
812648.46 m E 9862366.62 m S	80.7	50.3	63.83
812637.97 m E 9862359.18 m S	79.5	49.7	60.51
812640.46 m E 9862352.01 m S	78.6	49.3	60.31
812700.40 m E 9862372.09 m S	86.8	56.3	67.13
812650.10 m E 9862305.62 m S	82.5	52.8	63.82
812615.42 m E 9862351.77 m S	82.6	49.8	58.9
812674.68 m E 9862360.63 m S	76.2	57.5	63.82
812700.24 m E 9862315.44 m S	93.2	54.1	70.29
812688.32 m E 9862377.27 m S	97.2	54.9	69.33
812671.15 m E9862300.21 m S	84.9	52.6	65.18
812671.15 m E9862300.21 m S	94.7	52.6	66.53
812669.56 m E 9862377.53 m S	98.2	48.1	64.79

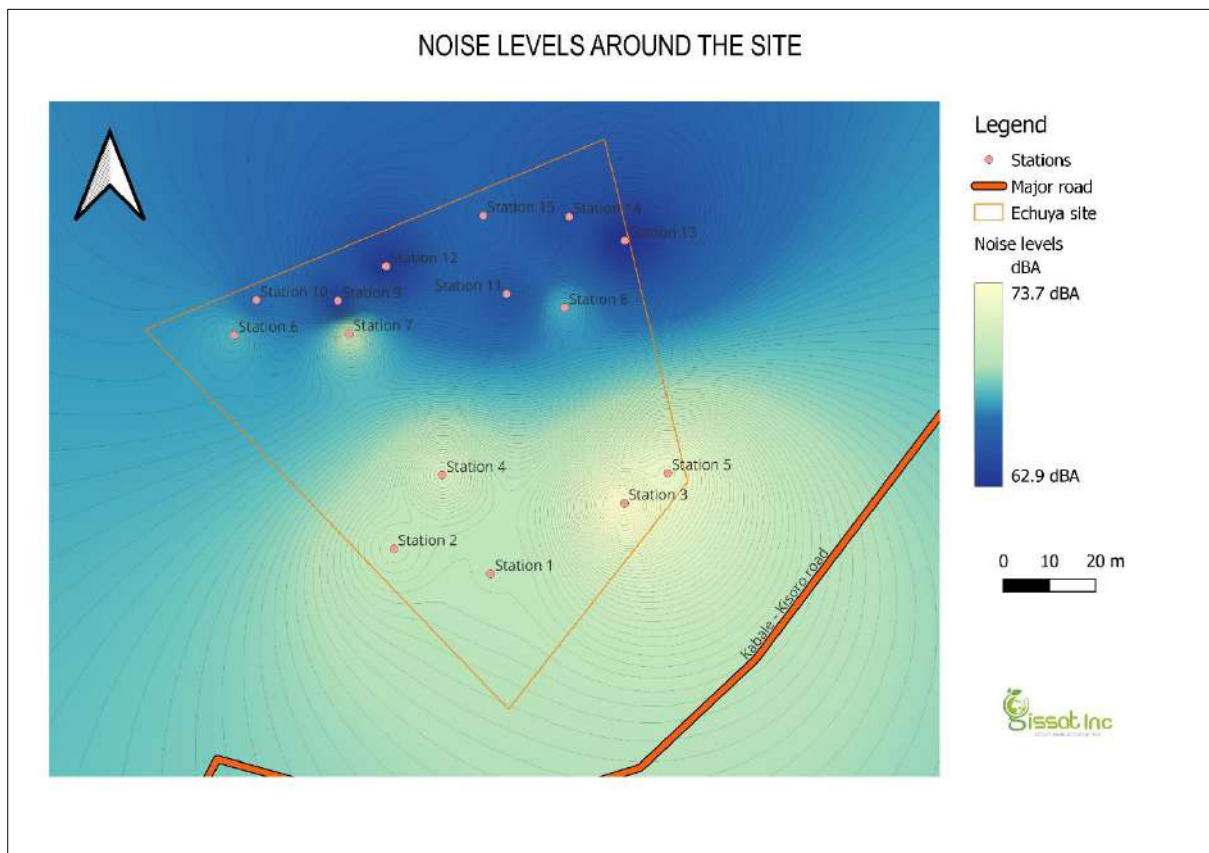


Figure 5.1: Noise levels taken on site during day time

5.8.2 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 5.7. Note that Uganda does not have national standards for PM10 and PM2.5, 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 in accordance with the East African Standard Air Quality Specification, EAS 751: 2010 as presented in table 5.8 were considered. The existing quality of the environment serves as an index for assessing the pollution load and the assimilative capacity of the area.

Table 5.7: Ambient air quality status near the project site

Station	Coordinate (35N)	PM _{2.5}	PM ₁₀	PM ₁	HCHO	TVOC	TEMP	HUMIDITY
1	812660.61 m E 9862321.55 m S	1	0	1	0.001	0.009	24	66
2	812687.30 m E 9862357.65 m S	1	0	1	0.004	0.018	23	66
3	812709.72 m E 9862321.94 m S	3	2	3	0.001	0.048	24	65
4	812648.46 m E 9862366.62 m S	2	1	2	0.006	0.024	24	66
5	812637.97 m E 9862359.18 m S	3	2	3	0.009	0.036	23	66
6	812640.46 m E 9862352.01 m S	1	0	1	0.007	0.032	24	67
7	812700.40 m E 9862372.09 m S	1	0	1	0.004	0.018	24	66
8	812650.10 m E 9862305.62 m S	0	1	0	0.005	0.020	24	66
9	812615.42 m E 9862351.77 m S	2	0	2	0.006	0.030	22	66
10	812674.68 m E 9862360.63 m S	1	0	1	0.007	0.027	24	66
11	812700.24 m E 9862315.44 m S	1	0	1	0.006	0.030	24	64
12	812688.32 m E 9862377.27 m S	3	2	3	0.001	0.033	24	65
13	812671.15 m E 9862300.21 m S	2	1	2	0.010	0.041	23	66
14	812671.15 m E 9862300.21 m S	1	0	1	0.005	0.021	24	66

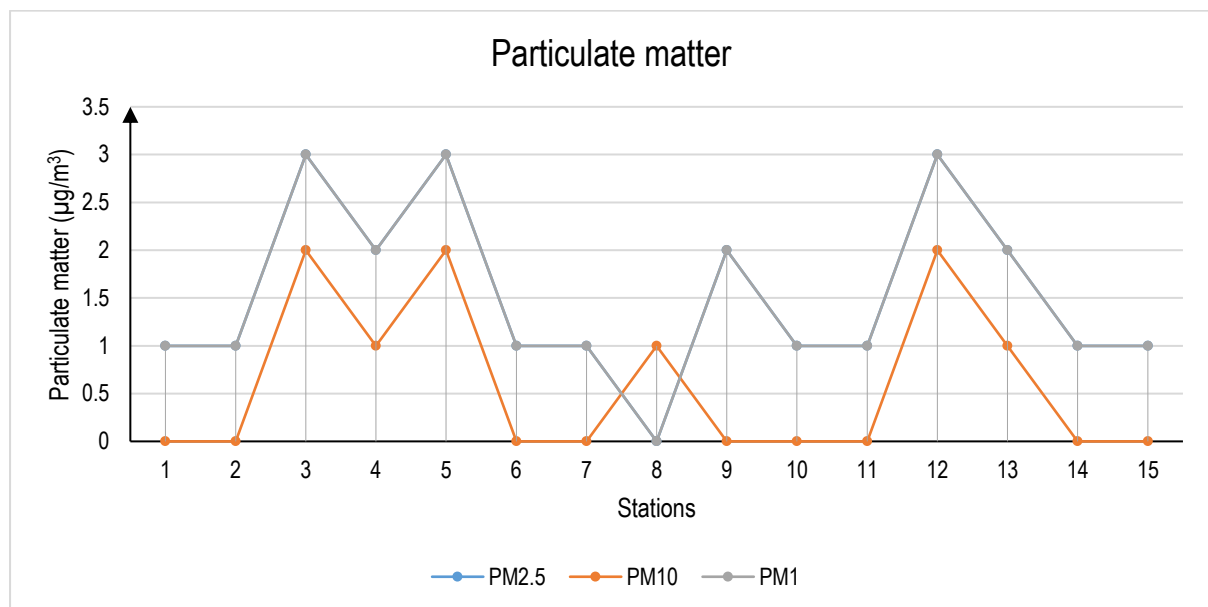


Figure 5.2: Particulate matter

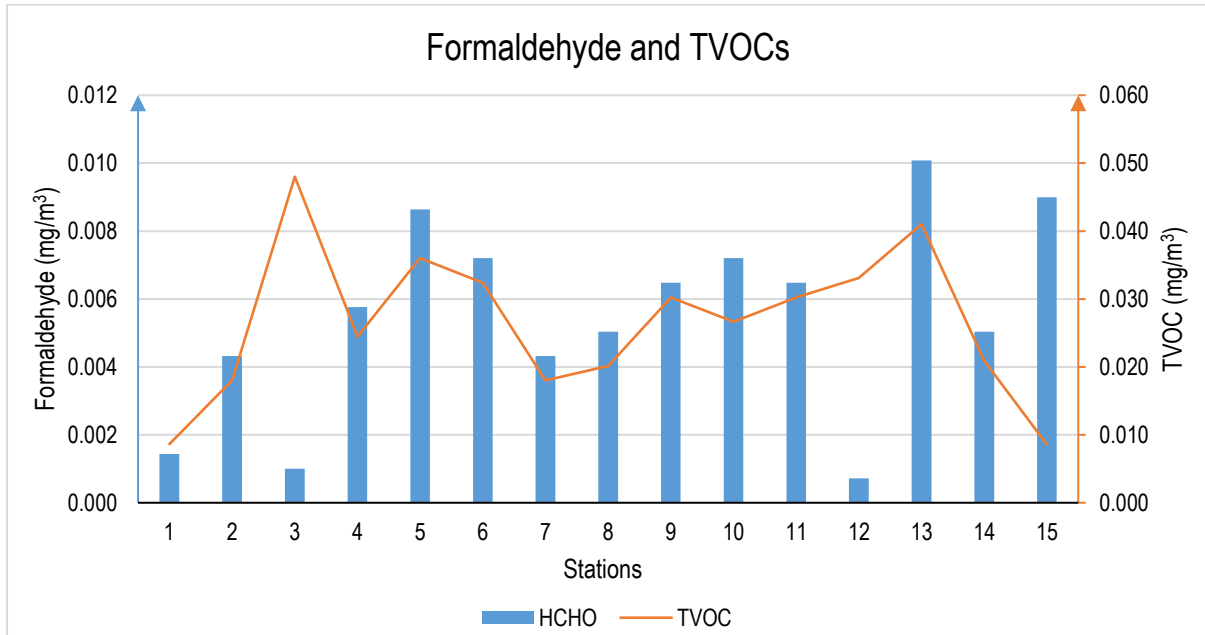


Figure 5.3: Formaldehyde and Total Volatile Organic Compounds

5.8.3 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 5.8. Figure 5.4 presents the concentration levels of trace elements and heavy metals.

Table 5.8: Soil analysis results

Location	Kagano Village (35M 812675 m E 9862271 m N)		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 classific	Sand	52.0	
	Clay	30.0	

Location	Kagano Village (35M 812675 m E 9862271 m N)	Standards of the National Cooperative Soil Survey (NCSS)	
	Silt	8.0	
Classification	Sandy Clay loam soil		

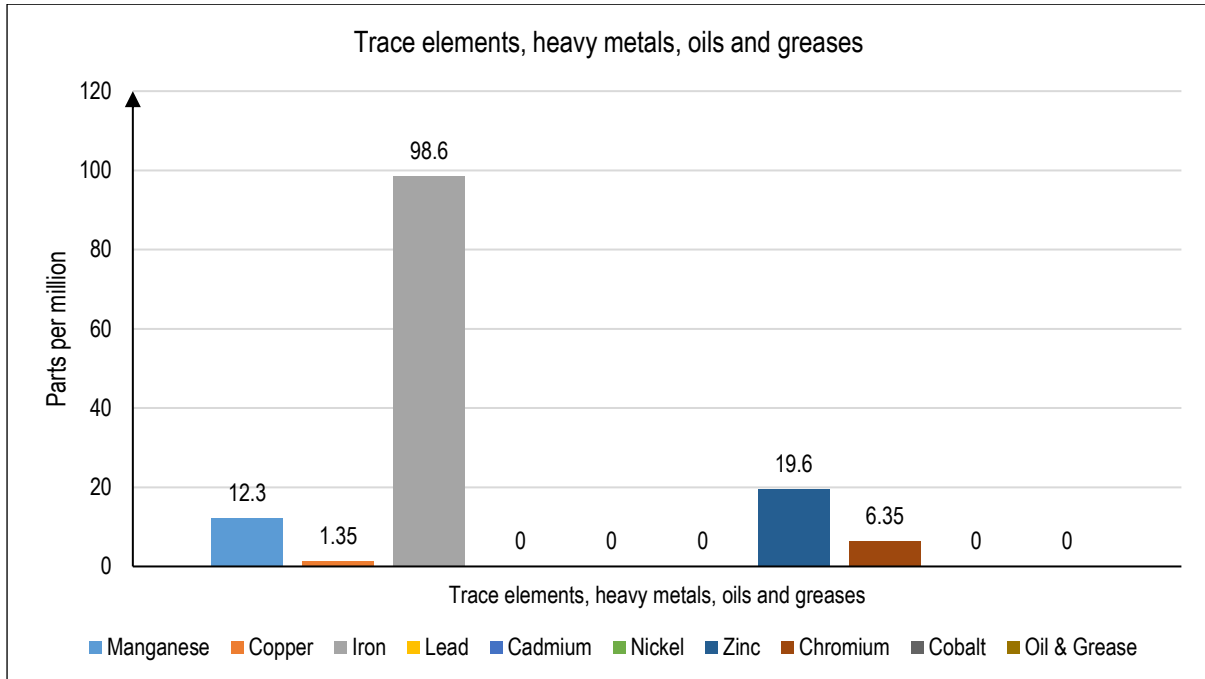


Figure 5.4: Trace elements, heavy metals, oils and greases

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.

In light of the anticipated benefits for the local communities, the gains in tourism and enhancement in visitor experience, alternative 2 has been selected for further implementation.

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 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. In consideration of the benefits of the physical VIC, this alternative was dropped.

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 Kabale and Kisoro 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, and 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 4.5 – 4.7 of Cap four 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 Echuya 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 4.4 for the Echuya 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

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 respective designated 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 6.1: Location of the prioritized site

S/no.	Proposed VIC	Site condition			
		Acreage	Site vegetation	Access to the site	Site topography
1.	Echuya Central Forest Reserve	Ca. 500 Sq. metres	The trees within the site are dominated by; <i>Croton macrostachyus</i> , <i>Olaea europea</i> , <i>Polyscias fulva</i> , <i>Ficus sp</i> and <i>Antiaris toxicaria</i> . Herbs ; <i>Digitaria sp</i> , <i>Justicia exigua</i>	The Kagano site currently hosts the NFA sector offices that is accessed via Kabale – Kisoro Road. The prioritized site is 51.4km from Kabale town	Gentle rolling landscape ranging from 2452m to 2425m above sea level towards Kabale – Kisoro Road.

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 sites that guided the site selection process for the proposed VIC is detailed in table 6.2 below.

Table 6.2: Attributes of each site considered for the each proposed VIC

No	Proposed VIC	Attribute of the sites		
		Preferred Site	Alternative one	Alternative two
1.	Echuya CFR	<p>The preferred site is in Muko Sub county (at the forest station, pine seed stand, eco-tourism area)</p> <ul style="list-style-type: none"> There are existing trails (Rugwamachumu, Kwakawedo, Batwa cultural) Houses NFA office and pine seed stands Has an existing eco-tourism site (and community group) Site already largely open with sparse mature trees Easily accessible According to the preliminary biodiversity assessed (flora and fauna), there are no significant ecological impacts anticipated Gives good first visitor impression 	<p>Kanaba (NFA camping site on top, off the check point and has scenic forest view)</p> <ul style="list-style-type: none"> There are existing trails linking blocks and attraction sites Houses NFA camping facilities (latrine, bandas and nice compound) Site under use (camp site) Well, positioned with panoramic view of the forest Site already largely open with sparse mature trees Easily accessible off the main high way Potential distraction from the commercial activities from the trading centre Potential for traffic congestion caused by the presence of a military check point 	<p>Kanaba (at the clear-felled hill overlooking the forest)</p> <ul style="list-style-type: none"> Stands alone on an exposed hill Mixed use may interfere with visitor blend with nature Upcoming with trading centre and community activities evident (and may over-shadow the VIC) There are no existing forest trails starting from site An old plantation seemingly with community involvement Old eucalyptus stands Already clear felled Easily accessed (although too exposed) Possible to look over the forest but may not be a classic first visitor impression

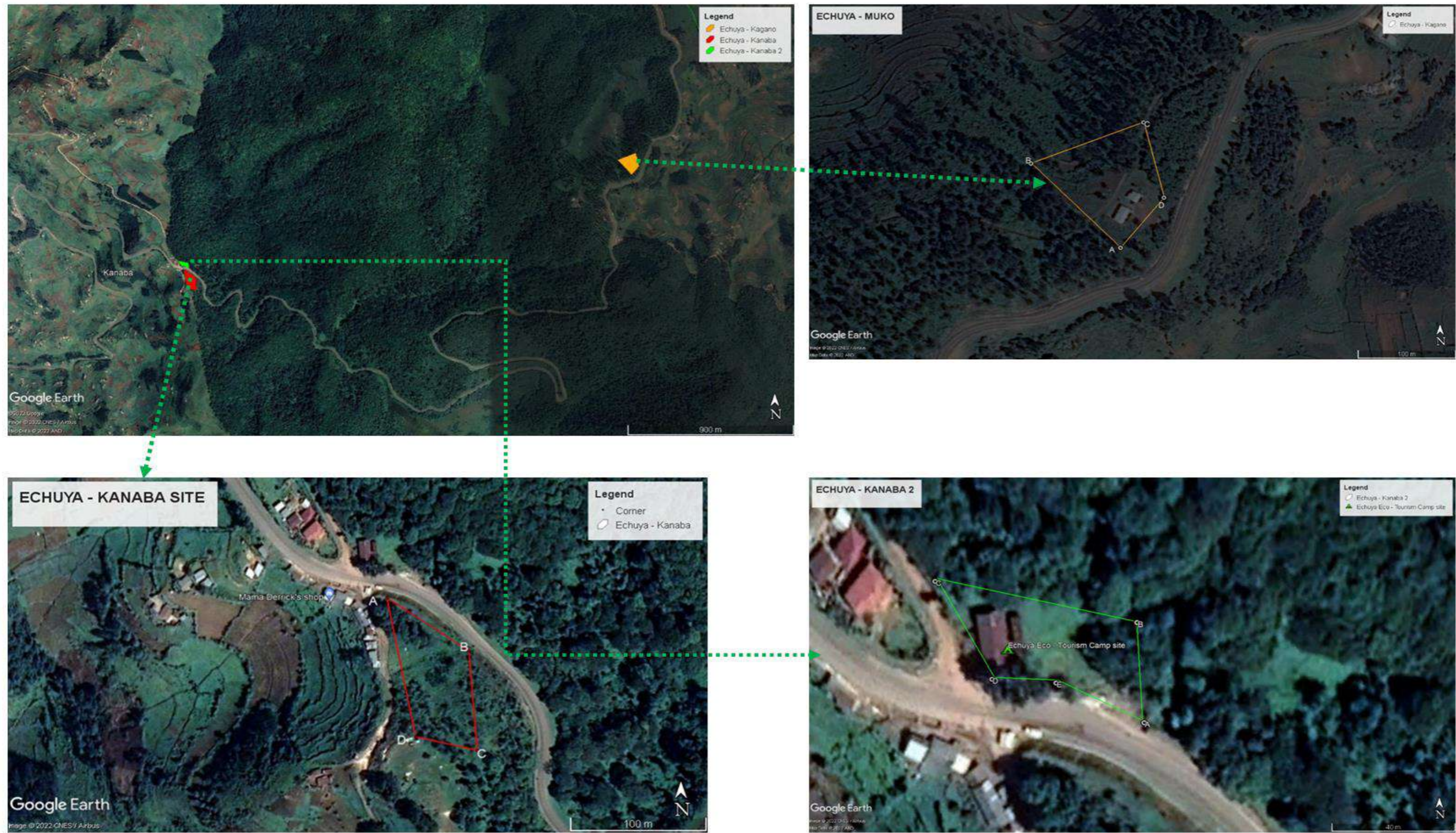


Figure 6.1: Overview of the sites considered for the proposed Echuya VIC

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 ESIA 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.



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:

5. Provision of opportunities to foresee and/or resolve potential obstacles, constraints and conflicts;
6. Means to identify and address potential negative social and environmental impacts as envisaged by stakeholders;
7. Opportunities to generate social learning and innovations based on local field experiences;
8. 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.
- Echuya 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/ National	<ul style="list-style-type: none"> - National Environment Management Authority - Ministry of Tourism, Wildlife and Antiquities - National Forestry Authority - Ministry of Water and Environment - Uganda Tourism Board 	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 Local Authorities	<ul style="list-style-type: none"> - Rubanda District Local Government 	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 partners	<ul style="list-style-type: none"> - Concessionaires 	Private organizations play a critical role in tourism by filling gaps in the service industry; through providing services in hospitality,

Category	Stakeholder	Connection to the project
	<ul style="list-style-type: none"> - Uganda Tour Operators Association - Uganda Safari Guides Association - Uganda Tourism Association - Eco-tourism and conservation groups - NGOs 	<p>transportation, scheduling and entertainment. Private organizations are a fundamental component of tourism through their aggressive marketing of tourism sites. The 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"> - Cultural institutions - Local leaders - Collaborative Forest Management (CFM) groups - Community members 	<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
<p>Collaborative Forest Management Groups, Local Leaders, Community members, NFA Echuya team</p> <p>23rd June 2022 at Echuya Eco-tourism camp site</p> <p>NFA Echuya CFR team, Greencare Innovations Limited, MECDA CFM, MEFCAPA CFM, KADECA CFM, Local leaders and community members from Kamugoyi Village, Muhindura and Kanaba Trading Centre</p>	<p>1. NFA should consider programs of training the locals in craft making, hospitality, and other tourism-related services; this may be done with the existing structures of the CFMs. This will improve the quality of the services and goods sold to tourists and enhance the benefits the communities will make from the boost in tourism</p>
<p>Rubanda District local Government</p> <p>Mr. Teophil Sabiti – District Community Development Officer – +256-782-800-184</p>	<p>1. There is little to no funding from the district. With an annual budget of Uganda shillings one million only, there is little to no capacity building or training of the local community, especially the youth. These cultural and heritage sites are not considered to be important aspects by the district political leaders. Therefore, most government funds are injected into other capital projects such as schools and health centres.</p> <p>2. Staff training is carried out however, this is done at a very minimal level. This is attributed to the lack of funding from the DLG</p>
<p>Uganda Wildlife Authority – Directorate of Tourism and Business Services</p> <p>20th May, 2022 at UWA Headquarters – Kamwokya</p> <p>Ms Dorcus Twesigomwe – Manager – Business Development Mr Paul Asiimwe</p>	<p>1. The quality of products to be supplied (offered) being of inferior quality</p> <p>2. Over staying in the park (long durations) which interferes with the natural habitat cover within the affected Parks.</p>
<p>Uganda Wildlife Authority - Research, Monitoring, Environment Impact Assessment</p> <p>17th June, 2022 at UWA Headquarters – Kamwokya</p>	<p>1. Electric fences, trenches, fire lines, 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.</p> <p>2. Recruitment of rangers is mostly from the host communities so these people get a chance to participate in conservation work to protect the PAs.</p>

Agency	Key issues raised
<p>Mr Aggrey Rwetsiba – Senior Research and Monitoring Coordinator Mr Justine Naamara – Manager EIA and Oil Monitoring/ Board Member IAIA Ms Florence Kyalimpa – Warden Environment Impact Assessment</p>	<ol style="list-style-type: none"> 1. 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. 2. Monitoring and research helps other users to present information-based decisions / uses. 3. 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. 4. 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.
<p>National Environment Management Authority</p> <p>17th June, 2022 at NEMA Headquarters – Kampala</p> <p>Dr. Akankwasah Barirega – Executive Director Mr Waiswa Ayazika – Director - Environmental Monitoring and Compliance</p>	<ol style="list-style-type: none"> 1. 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. 2. Tourism (VICs) provides a crucial and unique way of fostering visitors' connection with protected area values, making it a potentially positive force for conservation. 3. 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. 4. 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. 5. 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. 6. 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 7. Need to use environmental education and interpretation programmes to emotionally engage visitors, and connect them with the values the area is protecting.
<p>Ministry of Tourism, Wildlife and Antiquities (Department of Museums and Monuments)</p> <p>4th November, 2022 at the Uganda National Museum, Kira Road</p>	<ol style="list-style-type: none"> 1. 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.

Agency	Key issues raised
<p>Ms Nyiracyiza Jackline Besigye – Ag. Commissioner Mr Asiiimwe Raymond – Senior Conservation Officer</p>	<ol style="list-style-type: none"> 2. The ESIA should recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance. 3. For the construction phase, project development should commit to: 4. avoid disturbing sites of heritage importance; and 5. avoid disturbing burial sites.
<p>Ministry of Tourism, Wildlife and Antiquities - Department of Wildlife Conservation</p> <p>11th September, 2022 at MTWA, Rwenzori Towers</p> <p>Mr Baluku Joward – Senior Wildlife Officer – 0776165072 – joward.baluku@tourism.go.ug Mr Kijjambu Charles – Wildlife Officer – 0787307430 – charles.kijjambu@tourism.go.ug Mr Stephen Fred Okiror – Ag. Principal Wildlife Officer – 0772931963 – sfokiror@gmail.com Mr Micheal Mutebi – Wildlife Officer – 0758468731 – michealmutebi256@gmail.com</p>	<ol style="list-style-type: none"> 1. Review of the Tourism Act to streamline mandates of various Government MDAs in tourism development and wildlife conservation 2. The development of a management plan for wildlife outside protected areas 3. Establishing the National Wildlife Crime Coordination Taskforce (NWCCT) comprised of UWA, UPF, FIA, Interpol, UPDF, Customs, and NFA 4. Diversifying tourism products by adopting religious tourism, dark tourism and cultural tourism 5. Building capacity among sector players through training and support, for example, through the Uganda Crafts and Souvenir Development Project 6. Putting in place avenues to establish sport hunting on private land 7. Supporting the establishment of ranches and mini zoos by the private sector 8. 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 9. Engaging in Transboundary conservation programs such as the Great Virunga Transboundary Collaboration (GVTC) and Mount Elgon Regional Ecosystem Conservation Programme (MERECP) 10. MTWA has enhanced the operations and revised the curriculum at the Uganda Hotel and Tourism Training Institute (UHTTI) and Uganda Wildlife Training Institute (UWTI) 11. Building the capacity of UWEC to exercise its mandate of implementing conservation education programs across the country 12. The VICs should be operated as a business model which generates revenue. This will allow them to become self-sustaining and increase their longevity. 13. Rapid inquiry on the location and condition of existing VICs in and around the protected areas
<p>Ministry of Gender, Labour and Social Development - Department of Culture and Family Affairs</p> <p>14th November 2022, Gender, Labour and Development House</p>	<ol style="list-style-type: none"> 1. 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.

Agency	Key issues raised
<p>Ms Ruth Muguta Tusaasirwe, Commissioner Cultural Affairs</p>	<ol style="list-style-type: none"> 2. 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. 3. Addressing poor coordination within various Ministries that are in the cultural heritage sector: This makes work difficult because each ministry has a different framework.
<p>International Union for Conservation of Nature (IUCN) 17th November 2022 at IUCN – Uganda Offices Mr James Omoding – Senior Programmes Officer</p>	<ol style="list-style-type: none"> 1. Enhancing PA governance through increased research into the challenges facing PAs, avenues for collaboration and biodiversity conservation 2. 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 3. Utilising the funds from revenue sharing (20%) to establish quality tourism facilities by host communities that can generate revenue
<p>Association of Uganda Tour Operators 11th September 2022 at AUTO Headquarters Mr Albert Kasozi – Chief Executive Officer Ms Nancy Okwong – Public Relations Officer – 0772183898 Mr Jackson Sebugwawo – Executive Assistant</p>	<ol style="list-style-type: none"> 1. The design of the VIC should, as much as possible, align with the unique character of the protected area where it is established 2. 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. 3. 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)
<p>Association of Uganda Tour Operators 11th September, 2022 at USAGA – UTA offices in Nakawa Mr Herbert Byaruhanga – President (UTA) & General Secretary (USAGA)</p>	<ol style="list-style-type: none"> 1. The proposed VICs must act as information banks, to allow for the archiving and retrieval of tourism-related information. 2. 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. 3. 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 4. 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.
<p>Private Tour Operators Google form: https://forms.gle/YdmEwTLSUY8DTQuY7</p>	<ol style="list-style-type: none"> 1. Provide skilled, trained and informed staff and involve private stakeholders 2. Provide maps to visitors 3. Limited information at the VICs about communities especially in written format

Agency	Key issues raised
<p>Tour Operators</p>	<ol style="list-style-type: none"> 4. The VICs cover only specific regions leaving out other tourism destinations in the country such as the Karamoja sub-region 5. Renovation and redesigning the VICs to attract even more visitors 6. Misinformation provided by the VICs implies the need for more VICs spread across 7. Poor sanitation and housekeeping at some of the VICs 8. Acquire and share more accurate information 9. Encourage private companies to engage and partner with VICs 10. Redesign the structures with modern facilities to attract even more visitors 11. Conducting training workshops 12. Sub-contracting with the operation offices 13. Provide information and share ideas to attract more tourists
<p>Ministry of Water and Environment - Department of Environment Support Services</p> <p>14th March 2023 at the Ministry of Water and Environment - Department of Environment Support Services</p> <p>Ministry of Water and Environment representatives Uganda Wildlife Authority representative</p>	<ol style="list-style-type: none"> 1. 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. 2. 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. 3. The ESIA must critically examine the impacts and propose feasible mitigation measures to address them
<p>Ministry of Water and Environment - Department of Environment Support Services</p> <p>21st March 2023 at the Ministry of Water and Environment – Level I – Nile Boardroom</p> <p>Directorate of Water Resources Management (DWRM) staff Uganda Wildlife Authority representative</p>	<ol style="list-style-type: none"> 1. 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 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. 2. The designs of the proposed Visitor Information Centres should be bench marked against international standards for such facilities and other contemporary visitor information facilities in the neighbouring countries like Kenya and Rwanda. 3. The project only targets PAs within the Albertine landscape and is only for establishment of VICs and not accommodation facilities.

Agency	Key issues raised
	<ol style="list-style-type: none"> 4. 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. 5. 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. 6. 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. 7. 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. 8. Water abstraction both from surface and underground sources requires permission from the Directorate of Water Resources especially where there is use of motorized pumps. 9. 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. 10. 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. 11. 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.

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 Echuya 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 labour influx, the extent to which a community has capacity to absorb labour 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	<ol style="list-style-type: none"> 1. Point of contact for beneficiaries and community to file or follow up on grievances. 2. Sensitize community on rights and responsibilities and channels for registering complaints. 3. Follow up on complaints registered in the complaints boxes directing as appropriate Log complaints received appropriately. 4. Compile all complaints registered and forward to Muko Sub - County for review and solving for those that might have not been resolved at community level.
Sub county level GRC	<ol style="list-style-type: none"> 1. Sensitize Kagano GRCs and community members on rights and responsibilities and channels for registering complaints.

GRC	Roles and responsibilities.
	<ol style="list-style-type: none"> 2. Follow up on complaints directed to the Sub County and see that they are resolved. 3. Ensure complaints registered are properly logged and received appropriately. 4. Ensure documentation specifically the log book, registers, forms etc. are properly filed and stored. 5. Forward unresolved complaints which may require district level solving.
District Level GRC	<ol style="list-style-type: none"> 1. Sensitize Muko Sub - County GRC on rights and responsibilities and channels for registering a complaint. 2. Follow up on complaints that have been directed to the district level and see that they are resolved. 3. Conduct quarterly review meetings on Muko Sub - County GRC reports. 4. Forward unresolved complaints which may require higher level solving to national level GRC
National Level GRC	<ol style="list-style-type: none"> 1. Ensure grievance redress processes are developed and functional. 2. Sensitize GRCs at all levels on their roles and responsibilities 3. Ensure complaints registers are up to date 4. Follow up on complaints that have been directed to the national level. 5. Monitor implementation of resolutions made by GRCs at all levels. 6. Share best practices and general guidance to the IFPA-CD project. 7. Conduct sensitization and awareness outreach to relevant stakeholders. 8. Maintain all records of grievances and redress. 9. Analyse common grievances, lessons learning to inform effective program implementation and mitigation measures in future
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>World Bank Grievance Redress Contacts email: grievances@worldbank.org; By fax: +12026147313 By mail: The World Bank, Grievance Redress Service, MSN MC 10-1018, 1818 H St NW, Washington, DC 20433, USA and/or 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:

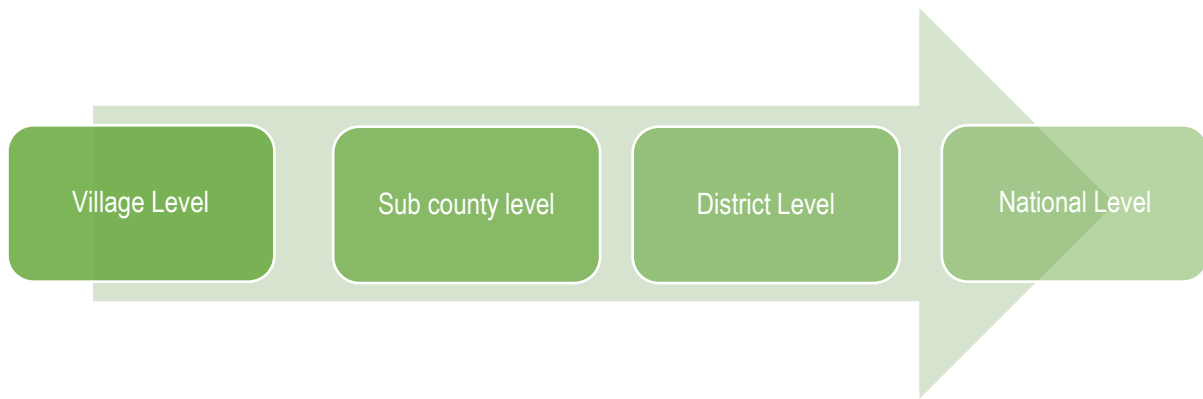


Figure 7:1 Grievance resolution hierarchy

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.

7.5.5.4 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:

1. Date grievance was reported;
2. Date Grievance Log updated;
3. Date proposed corrective action sent to complainant;
4. Date grievance was followed up and closed out;
5. 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.

1. 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;
2. 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

3. 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 complaint 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;
4. 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.

Rubanda 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 Echuya 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:

1. Stakeholder consultation
2. Review of the risks arising from the project and the range of environmental consequences that could arise under upset conditions.
3. Review of the possible impact-causing aspects of the project.
4. Review of impact assessments done for similar projects, particularly those in this area.
5. Technical inputs (professional judgement) from environmental specialists on the EIA team.
6. Regulatory criteria governing aspects of the environment likely to be impacted.
7. 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.	Risk of 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	✓	✓	✓
KEY		✓	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
Extent	Local (2)	Local (2)
Duration	Immediate (1)	Immediate (1)
Magnitude	Moderate (6)	High (8)
Probability	High (4)	High (4)
Significance*	Moderate (36)	Moderate (44)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be enhanced?	Yes	
Enhancement:		
<ol style="list-style-type: none"> 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. 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 		
Cumulative impacts: None		
Residual impacts: 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 Kagano, Kibungo, Rwaburundi and Karengyere Trading Centre		

*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
Extent	National (5)	National (5)
Duration	Medium-term (3)	Medium-term (3)
Magnitude	Low (4)	Moderate (6)
Probability	High (4)	High (4)
Significance*	Moderate (48)	Moderate (56)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be enhanced?	Yes	
Enhancement:		
<ol style="list-style-type: none"> 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 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. 		
Cumulative impacts: None		
Residual impacts:		
<ol style="list-style-type: none"> 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 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 		

*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
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	Very high (10)	Low (4)
Probability	Medium (3)	Low (2)

Significance*	Moderate (39)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 1. The proponent shall use clean, coarse fill material for grading to reduce the potential for introducing or spreading non-native, or invasive plant species 2. Manual control of invasive species shall be implemented at the site. 3. Establish a monitoring and information system for invasive species to support planning and management. 4. Landscaping and establishment of the arboretum shall use indigenous species 5. The proponent shall enhance ongoing programs to combat invasive species within the CFR 		
Cumulative impacts: None		
Residual impacts: 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
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	High (8)	Low (4)
Probability	Definite (5)	Medium (3)
Significance*	Moderate (55)	Low (18)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	No
Can impacts be mitigated?	Yes	

Mitigation:

1. Scheduling construction activities for periods when wind speeds are low
2. Employing dust suppression techniques like water sprinkling at the site
3. Fencing the site to reduce wind-induced re-entrainment of dust particles
4. Covering trucks hauling debris and excavation spoil to curtail dust emissions during transportation
5. Selecting an appropriate disposal site such as to limit the distance travelled and disruption to the receptor communities

Cumulative impacts: None

Residual impacts: 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 physical health with consequences including the cardiovascular system.

There are compositional factors that place construction workers at great risk of suffering mental health issues such as age, gender and socioeconomic position, construction workers. The low socioeconomic position is also a risk factor for mental health issues, particularly for young men (WHO, 2014). Construction workers in Uganda are commonly 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

Nature: Occupational Health and Safety risks		
	Without mitigation	With mitigation
Extent	Site (1)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	Very high (10)	Moderate (6)
Probability	Definite (5)	Definite (5)
Significance*	High (60)	Moderate (40)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 1. All excavation work and lifting shall be supervised by a competent person and operatives doing the work shall be given clear instructions; 2. Sides of excavations shall be thoroughly inspected: <ul style="list-style-type: none"> - daily, before each shift and after an interruption in work of more than one day; - after an unexpected fall to the ground; - after substantial damage to supports; - after heavy rain; - when boulder formations are encountered. 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; 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"> - the proper storage of materials and equipment; - the removal of scrap, waste and debris at appropriate intervals 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. 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 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"> - adequate safety nets or safety sheets shall be erected and maintained, or - adequate safety harnesses shall be provided and used. 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. 9. All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> - avoid the risk of fire; - quickly and efficiently control any outbreak of fire; - bring about a quick and safe evacuation of persons 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 H) as they conduct their tasks at the site 		
Cumulative impacts: None		

Residual impacts: None

*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
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	High (8)	Low (4)
Probability	High (4)	Low (2)
Significance*	Moderate (44)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	Yes	No
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements Recycle construction materials from the existing structures where possible Establish adequate gender-segregated sanitary facilities for all workers and visitors to the site Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site Hire a licensed hazardous waste handler to remove and dispose of hazardous waste materials Train construction workers on proper waste management practices Cover trucks ferrying debris from the site to mitigate spillages during transportation Site stockpiles of debris away from stormwater paths 		
Cumulative impacts: None		
Residual impacts:		

*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 (SO₂), Nitrogen Dioxide (NO₂) 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_x and NO_x 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	
Mitigation:		
<ol style="list-style-type: none"> 1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 2. Open incineration of waste at the site shall be strictly prohibited 3. All plastic waste generated at the site shall be collected in such a manner as to allow it to be recycled 4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site 		
Cumulative impacts: None		
Residual impacts: 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 2. Start landscaping and replanting ornamental trees as soon as it is reasonable to restore the visual appeal of the site 3. Schedule excavation works for January to March when the visitor numbers are low		
Cumulative impacts: None		
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:		

<ol style="list-style-type: none"> 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
Cumulative impacts: None
Residual impacts: 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
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	Very high (10)	Low (4)
Probability	Medium (3)	Low (2)
Significance*	Moderate (39)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		

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" must be displayed in areas where smoking is prohibited

Cumulative impacts: Fires generate smoke and large volumes of particulate matter, deteriorating ambient air quality over a large area

Residual impacts: 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 Kabale - Kisoro 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
Extent	Local (2)	Local (2)
Duration	Immediate (1)	Immediate (1)
Magnitude	High (8)	Low (4)
Probability	Definite (5)	Definite (5)
Significance*	Moderate (55)	Moderate (35)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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 Kabale - Kisoro road. 3. Appropriate traffic warning signs shall be placed along Kabale - Kisoro road to inform road users of trucks turning ahead and instruct them to reduce speed. 		

<ol style="list-style-type: none"> 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. 7. Heavy equipment shall be transported early morning (12 am – 5 am) with proper pilotage. 8. The use of flagmen shall be employed to regulate traffic flow. 9. Training and sensitization of personnel (drivers) in road safety and traffic regulations shall also be done by road contractors.
<p>Cumulative impacts:</p> <ul style="list-style-type: none"> • Noise from increased traffic will worsen the noise problem from demolition activities at the site • An increase in fugitive dust emissions and diesel exhaust fumes will further degrade air quality around the project area
<p>Residual impacts:</p>

*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

8.2.12 Impact on ambient noise

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 EHSG on noise recommends that the one-hour L_{Aeq} should 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: Impact on ambient noise		
	Without mitigation	With mitigation
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	Very high (10)	Moderate (6)
Probability	Definite (5)	Definite (5)
Significance*	High (65)	Moderate (35)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 1. All construction and excavation shall be restricted to the day-time only 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 3. Equipment with the lowest noise rating shall be used where feasible 4. NRMM such as generators shall be fitted with mufflers, enclosures and any other damping material to reduce their noise emission 5. All machinery used on site shall be promptly serviced and maintained. Maintenance of old equipment can reduce noise levels by 50% 6. Sound-absorbing barriers like plywood shall be erected around the site and noise equipment 7. Noisy NRMM shall be sited away from the occupied structures adjacent to the site 8. All NRMM and vehicles shall be shut down when not in use 9. All workers shall be provided with the appropriate PPE such as earmuffs or plugs to protect them from noise levels above 85 dBA 		

Cumulative impacts: This impact may be exacerbated by the ongoing construction of the Kabale - Kisoro road
Residual impacts: 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
Extent	Local (2)	Local (2)
Duration	Immediate (1)	Immediate (1)
Magnitude	Moderate (6)	Minor (2)
Probability	Definite (5)	Medium (3)
Significance*	Moderate (45)	Low (15)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 1. 2. Workers shall undergo training on social ethics and safe sex practices to curtail the spread of HIV/AIDS and other STDs 3. A grievance redress mechanism shall be established to amicably resolve any grievances between the community and workers on site 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 		
Cumulative impacts: Failure to implement preventive measures at the site may lead to the rampant spread of highly-infectious diseases in the community		
Residual impacts: 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 Echuya 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 Echuya 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
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	Moderate (6)	Low (4)
Probability	Definite (5)	Definite (5)
Significance*	Moderate (45)	Low (30)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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. 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 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; 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; 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. 		

Cumulative impacts: 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 Echuya 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
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:		
<ol style="list-style-type: none"> 1. Implement strict control over firearms and other weapons to prevent them from falling into the hands of poachers. 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. 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. 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. 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 		

<p>construction workers, emphasizing the zero-tolerance policy for engaging in illegal activities, including poaching</p> <p>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.</p> <p>7. Collaborate with local law enforcement agencies to ensure regular patrols and responses to any reported incidents. Work closely with Echuya Central Forest Reserve sector management to share information and coordinate anti-poaching efforts during the construction phase.</p>
Cumulative impacts: None
Residual impacts: 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 Echuya 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
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:		
<ol style="list-style-type: none"> 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) 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 3. A game ranger shall be retained at the site at all times to handle problem animals 4. All incidences of attacks on animals or workers shall be reported to the proponent 5. Fully stocked first aid kits equipped with anti-venom and anti-rabies vaccines shall be kept at the site 		
Cumulative impacts: None		
Residual impacts: 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 Echuya 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	

<p>Mitigation:</p> <ol style="list-style-type: none"> 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
<p>Cumulative impacts: None</p>
<p>Residual impacts: None</p>

*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
Extent	Site (1)	Local (2)
Duration	Long-term (4)	Long-term (4)
Magnitude	Moderate (6)	High (8)
Probability	Medium (3)	High (4)

Significance*	Low (33)	Moderate (56)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	None	None
Can impacts be enhanced?	Yes	
Enhancement:		
<ol style="list-style-type: none"> 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 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 		
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 enhanced visitor experience is expected to be very high

Probability: The proposed VIC will definitely enhance the visitor experience within the Echuya CFR

Potential Significance: This impact will be moderate but can be enhanced to high

Nature: Enhanced visitor experience		
	Without enhancement	With enhancement
Extent	Site (1)	Site (1)
Duration	Long-term (4)	Long-term (4)
Magnitude	Moderate (6)	Very high (10)
Probability	Definite (5)	Definite (5)
Significance*	Moderate (55)	High (75)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	None	None
Can impacts be enhanced?	Yes	
Enhancement:		
<ol style="list-style-type: none"> The staff at the VIC shall be extensively trained in hospitality, information dissemination, interpretation and quality assurance The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant 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 		
Cumulative impacts: The visitor experience at the VIC will consolidate ongoing efforts by the proponent to enhance the visitor experience in the CFR		
Residual impacts: None		

*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
Extent	Local (2)	District (3)
Duration	Long-term (4)	Long-term (4)
Magnitude	Moderate (6)	High (8)
Probability	Medium (3)	High (4)
Significance*	Moderate (36)	High (60)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	None	None
Can impacts be enhanced?	Yes	
Enhancement: <ol style="list-style-type: none"> 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 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 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 		
Cumulative impacts: The operation of the VIC will enhance the benefits enjoyed by communities through community livelihood support (CFMs) and corporate social responsibility		
Residual impacts: 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	
Mitigation: <ol style="list-style-type: none"> 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 2. Signage instructing all personnel to safeguard their personal belongings at all times shall be displayed within all sections of the VIC 3. The VIC will be kept under CCTV surveillance, 24/7; the CCTV system shall have remote access capabilities 4. The proponent shall provide ample security at the VIC to tackle any threats to life and property 5. The security personnel at the VIC shall be instructed to use desist from unlawful acts such as torture, excessive force, extortion, etc. 6. The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals 7. The proponent shall adhere to any guidance issued by security organs i.e. Uganda Police Force, Interpol, UPDF etc. 		
Cumulative impacts: None		
Residual impacts: 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	
Mitigation:		
<ol style="list-style-type: none"> 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; 2. Medical pre-selection of employees to ensure that they are fit to work in these environments; 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; 4. Workrooms shall have enough free space to allow people to move about with ease; 5. The workplace, and certain equipment, devices and systems shall be maintained in efficient working order (efficient for health, safety and welfare) 6. There shall be sufficient traffic routes, of sufficient width and headroom, allowing people and vehicles to circulate safely and with ease 7. Set appropriate speed limits, and make sure they, and any other traffic rules, are obeyed; 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; 9. Cleaning and the removal of waste shall be carried out as necessary by an effective method. Waste shall be stored in suitable receptacles. 10. Doors and gates shall be suitably constructed and fitted with safety devices if necessary; 11. Suitable and sufficient sanitary conveniences and washing facilities shall be provided at readily accessible places; and 12. An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, shall be provided 13. The employees at the VIC shall be provided with the appropriate PPE considering the hazards they are occupationally exposed to 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 15. A fully stocked first aid box shall be maintained at the site at all times 16. All employees shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site 		
Cumulative impacts: Employees may be cumulatively exposed to multiple occupational Health and Safety hazards for example vibrations can aggravate existing musculoskeletal disorders from other hazards		
Residual impacts: 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
Extent	Local (2)	Site (1)
Duration	Long-term (4)	Long-term (4)
Magnitude	Very high (10)	Low (4)
Probability	Medium (3)	Low (2)
Significance*	Moderate (48)	Low (18)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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. 2. All staff 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 VIC 4. Legible maps indicating evacuation routes and assembly points shall be displayed within all sections of the VIC. 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 6. All combustible materials including waste shall be kept away from fuel, sources of heat and ignition 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 		
Cumulative impacts: Fires generate smoke and large volumes of particulate matter, deteriorating ambient air quality over a large area		
Residual impacts: 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
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	
Mitigation:		
<ol style="list-style-type: none"> 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 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 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 		
Cumulative impacts: None		
Residual impacts: 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	
Mitigation:		
<ol style="list-style-type: none"> All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements Well-labelled bins shall be placed at all sections of the building, these will aid in the segregation of waste Legible signage showing where each type of waste shall be disposed of shall be put up in all sections of the VIC The waste receptacles shall have well-secured lids to prevent animals from accessing the discarded materials 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 		
Cumulative impacts: None		
Residual impacts: 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 Echuya 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 (SO₂), Nitrogen Dioxide (NO₂) 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)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation:	<ol style="list-style-type: none"> 1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 2. Recycling of non-biodegradable waste other than open incineration shall be encouraged to reduce the release of greenhouse gases and particulate matter. 3. All plastic waste generated at the VIC shall be collected in such a manner as to allow it to be recycled 4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site 	
Cumulative impacts:	None	
Residual impacts:	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 Echuya 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.,

Echuya 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
Extent	Local (2)	Local (2)
Duration	Long term (4)	Medium term (3)
Magnitude	Moderate (6)	Low (4)
Probability	Definite (5)	High (4)
Significance*	High (60)	Moderate (36)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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. 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. 3. Adopting sustainable landscaping practices that support native flora and fauna will enhance the resilience of the surrounding environment to climate change. 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. 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. 		
Cumulative impacts: None		
Residual impacts: 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 (SO₂), Nitrogen Dioxide (NO₂), 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"> 1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 2. Open incineration of waste at the VIC shall be strictly prohibited 3. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated 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 		
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)
Duration	Long-term (4)	Long-term (4)
Magnitude	Moderate (6)	Low (4)
Probability	High (4)	Medium (3)
Significance*	Moderate (48)	Low (24)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	None	None
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 1. The proponent shall engage the relevant stakeholders to identify how local cultural heritage may be incorporated into or affected by the VIC 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 3. The proponent shall implement a grievance redress mechanism to amicably resolve any adverse cultural impacts or any forms of misrepresentation 		
Cumulative impacts: None		
Residual impacts: 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 those 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
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	
Mitigation:		
<ol style="list-style-type: none"> 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 		

2. The proponent shall maintain spill kits at the VIC in the event of significant oil spills
3. Contaminated soil from a significant oil spill shall be stored in a secure drum and disposed of by a licensed waste handler
Cumulative impacts: None
Residual impacts: 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"> 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 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) The proponent shall develop a traffic management plan to address the increase in traffic during the peak season The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals 		
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 construction of a Visitor Information Center (VIC) in Echuya 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
Extent	Local (2)	Local (2)
Duration	Longterm (4)	Medium Term (3)
Magnitude	low (4)	Minor (2)
Probability	Medium (3)	Improbable (1)
Significance*	Low (30)	Low (7)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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. 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. 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. 		
Cumulative impacts: None		
Residual impacts: 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

The Batwa 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. In a study conducted by the Batwa Development Program, it was found that the Batwa people's traditional marriage practices were already changing due to the influence of the outside world, including government policies and development projects. The study also found that Batwa

women were more likely to participate in the cash economy and that the practice of polygamy was declining.

The establishment of visitor information centers could bring more outsiders into the Batwa and 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 and Batwa men and women to work in the visitor information centers. This could, in turn, affect their traditional marriage practices, as young Batwa 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 and Batwa people, leading to increased financial independence and greater flexibility in their marriage practices. For example, if the local or Batwa 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 Batwa as well the other locals and people 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 including the Batwa 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
Extent	Local (2)	Local (2)
Duration	Permanent (5)	Medium term (3)
Magnitude	High (8)	Minor (2)
Probability	Medium (3)	Improbable (1)
Significance*	Moderate (45)	Low (7)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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		
Cumulative impacts: None		
Residual impacts: 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

Pfarr & Hosie (2010) in “The Social Impacts of Tourism on the Batwa Pygmies in South-western Uganda.” discusses how tourism may expose local communities, including the Batwa people, to outside influences and lead to changes in their social structures and family values.

The establishment of VICs in the Central Forest Reserve could potentially affect the Batwa'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 Batwa's traditional systems of child-rearing and education. The Batwa 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
Extent	Local (2)	Local (2)
Duration	Permanent (5)	Medium term (3)
Magnitude	Moderate (6)	Low (4)
Probability	High (4)	Low (2)
Significance*	Moderate (52)	Low (18)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Efforts could be made to ensure that economic opportunities generated by tourism are distributed in a way that is compatible with the local's traditional values and practices.		
Cumulative impacts: None		
Residual impacts: 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 Echuya Central Forest Reserve may result in power imbalances in the local community, particularly for vulnerable groups such as the Batwa people. This is because tourism development may reinforce existing power imbalances between local communities and external actors, such as tour operators, governments, and NGOs. The Batwa people have historically been marginalized and have limited power and voice in decision-making processes related to tourism development ((Bauni & Munishi (2012):

The Impact of Tourism on Indigenous Communities: A Case Study of the Batwa in Bwindi Impenetrable Forest, Uganda).

Another potential impact of the establishment of VICs is that it could change the balance of power within the Batwa 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 Batwa 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 Batwa and other communities or stakeholders involved in the management of the Forest Reserve . The Batwa have historically faced marginalization and discrimination from other communities and stakeholders, and the establishment of VICs could potentially exacerbate these tensions, particularly if the Batwa 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
Extent	Local (2)	Local (2)
Duration	Permanent (5)	Short term (2)
Magnitude	Very high (10)	Low (4)
Probability	High (4)	Low (2)
Significance*	High (68)	Low (16)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Efforts could be made to promote the importance of traditional leadership and governance systems. This could involve working with the locals to integrate traditional systems of governance into formal decision-making processes, or supporting the development of programs that promote the importance of traditional knowledge 		
Cumulative impacts: 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

One potential impact of the establishment of VICs is that it could disrupt traditional systems of healing and medicine for the Batwa. Increased tourism and associated development could potentially lead to habitat destruction and loss of traditional medicinal plants, affecting the Batwa'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.

Additionally, the Batwa may face barriers to accessing healthcare services due to their marginalized status and lack of resources. The establishment of VICs may bring in healthcare services, but if these are not designed to meet the specific needs of the Batwa, they may not be effective in addressing their health issues.

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	
Mitigation:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Involve the locals in establishing herbal demonstration sites outside the Forest Reserve 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. 		
Cumulative impacts: None		
Residual impacts: 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 Batwa who benefit from tourism-related opportunities and those who do not. Increased tourism may bring economic opportunities for some members of the Batwa 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 Batwa 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 Batwa 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
Extent	Local (2)	Site (1)
Duration	Longterm (4)	Longterm (4)
Magnitude	Very high (10)	Low (4)
Probability	High (4)	Low (2)
Significance*	High (64)	Low (18)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. The locals shall be fairly compensated for their participation in tourism initiatives, including benefit-sharing schemes and fair wages for employees.. 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. 4. Efforts could be made to promote cultural awareness and understanding between different social groups within the local community 		
Cumulative impacts: None		
Residual impacts: None		

*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

8.3.20 Commercialization of Culture

The Batwa people are an indigenous community in Central and East Africa, who have faced significant marginalization and discrimination over the years. In recent times, their culture has become a popular tourist attraction, leading to the establishment of visitor information centers in some areas according to "Tourism and Indigenous People: The Case of Batwa in Bwindi Impenetrable National Park" by Janet N. Bukenya. This has created opportunities for outsiders including the Batwa and the local communities within to exploit the Batwa Culture hence watering it down for monetary gain

The commercialization of Batwa culture could potentially damage its original fabric and undermine its authenticity. The Batwa have a unique cultural heritage that has been shaped by their traditional way of life, which includes hunting and gathering in the forest, as well as 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 Batwa 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 Batwa 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
Extent	Local (2)	Site (1)
Duration	Permanent (5)	Medium term (3)
Magnitude	Very high (10)	Low (4)
Probability	High (4)	Low (2)
Significance*	High (68)	Low (16)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Design and implement activities that take into account the need for integrating conservation friendly cultural values of the local people into PA management 3. The proponent shall respect the intellectual property rights of the creators and custodians of cultural products. 4. Efforts could also be made to ensure that the commercialization of the local culture is done in a responsible and sustainable manner like cultural sensitivity training 5. 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 6. Efforts could be made to empower the local community to control the representation and sharing of their cultural heritage.. 		
Cumulative impacts: None		
Residual impacts: 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 Batwa community around Echuya 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 Batwa community's unique way of life, history, and traditions. This can include exhibits on traditional crafts, music, dance, and storytelling, as well as demonstrations of hunting and gathering skills. By educating tourists about the Batwa 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 Batwa 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 Batwa 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
Extent	Local (2)	Local (2)
Duration	Medium-term (3)	Long-term (4)
Magnitude	High (8)	Very High (10)
Probability	High (4)	Definite (5)
Significance*	Moderate (52)	High (80)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be enhanced?	Yes	
Enhancement:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. 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. 3. 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. 		
Cumulative impacts: None		
Residual impacts:		
<ol style="list-style-type: none"> 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. 2. Preserving cultural heritage can provide valuable educational and research opportunities. For example, archaeological sites can provide insights into past societies and cultures. 3. Cultural heritage sites often have significant environmental value as well, and preserving them can help protect ecosystems and biodiversity. 		

*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 Batwa 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 Batwa 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 Batwa 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.

Onyango & Okech (2014) in “Community Participation in Ecotourism and Its Impacts on Household Livelihoods in Bwindi Impenetrable Forest, Uganda.” argues that community participation in tourism development can increase economic and employment opportunities for households, but should be accompanied by measures to mitigate negative impacts on the environment and local communities.

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	
Enhancement:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Create and provide gender balanced employment opportunities such as tour guides, porters, boundary management 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; 4. For ecotourism activities, prioritize local community member’s employment as tour guides considering their unique local and cultural knowledge 		
Cumulative impacts: None		
Residual impacts:		

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.

*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 Batwa community around Echuya 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 Batwa 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 Batwa 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
Extent	Local (2)	Local (2)
Duration	Medium-term (3)	Long-term (4)
Magnitude	Moderate (6)	Very High (10)
Probability	High (4)	High (4)
Significance*	Moderate (44)	High (64)
Status (positive or negative)	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	No	No
Can impacts be enhanced?	Yes	
Enhancement:		
<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 		

<ol style="list-style-type: none"> 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. 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 4. VICs shall provide accurate and up-to-date information, as well as high-quality educational materials such as brochures, maps, and multimedia displays.
Cumulative impacts: None
Residual impacts: <ol style="list-style-type: none"> 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. 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.

*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
Ergonomic hazards 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)
Noise 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) Emotional and cognitive annoyance Hypertension Depression Anxiety Stress cardiomyopathy (Takotsubo syndrome) Inefficiency Impaired concentration
Slips, trips and falls 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 Fractures Dislocations Bruises
Fire A fire incident will pose several health and safety risks to all workers at the decommissioning site at the time of occurrence.	Burns Suffocation Death
Electricity Electric shocks either during uninstalation of electrical equipment, operation of power tools and exposure to bare wires could occur during decommissioning.	Burns Electrical shocks Fire Death
Equipment and machinery Operation of NRMM and power tools will also pose risks to the workers especially when said equipment is unguarded, faulty or	Cuts Burns Electric shocks

Hazard	Risks
poorly maintained. User inattention is also a major cause of injuries during the operation of machinery.	Sore eyes
Chemical agents 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 caustic soda, asphyxiants such as CO ₂ and flammables are some of the potentially hazardous substances workers may be exposed to	Dermatitis Skin irritation Eyes, Nose and Mouth irritation Asphyxiation Cancer
Stress 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 Depression Inefficiency Suicide
Working at a height 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 Fractures 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
Extent	Site (1)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	Very high (10)	Moderate (6)
Probability	Definite (5)	Definite (5)
Significance*	High (60)	Moderate (40)
Status (positive or negative)	Negative	Negative
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	
Mitigation: <ol style="list-style-type: none"> All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site The decommissioning crews shall be inducted and trained on the safety measures and guidelines and observed while at the site All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> avoid the risk of fire; control quickly and efficiently any outbreak of fire; bring about a quick and safe evacuation of persons Smoking shall be prohibited and "No Smoking" notices be prominently displayed in all appropriate locations within the subject site 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"> - adequate safety nets or safety sheets shall be erected and maintained; or - adequate safety harnesses shall be provided and used
Cumulative impacts: None
Residual impacts: 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
Extent	Local (2)	Site (1)
Duration	Immediate (1)	Immediate (1)
Magnitude	High (8)	Low (4)
Probability	High (4)	Low (2)
Significance*	Moderate (40)	Low (12)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	Yes	No
Can impacts be mitigated?	Yes	
Mitigation:		
<ol style="list-style-type: none"> 1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements at the time of decommissioning 2. Establish adequate gender-segregated sanitary facilities for all workers at the decommissioning site 3. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site 4. Hire a licensed hazardous waste handler to remove and dispose of any hazardous substances 5. Train the decommissioning workers on proper waste management practices 6. Cover trucks ferrying debris from the site to curtail fugitive emissions during transportation 7. Site stockpiles of debris away from stormwater paths 		
Cumulative impacts: None		

Residual impacts: 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 2. Start restoration activities as soon as it is reasonable to restore the visual appeal of the site 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		
Cumulative impacts: None		
Residual impacts: None		

*Significance calculated as (magnitude+duration+extent) x probability. Significance: <30 =low, 30-60 = moderate, >60 = high

8.5 Cumulative effects

This chapter assesses cumulative effects of inter-project impacts of the assessed scheme with other nearby schemes which be or are likely to exist in the future. 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 affected 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.

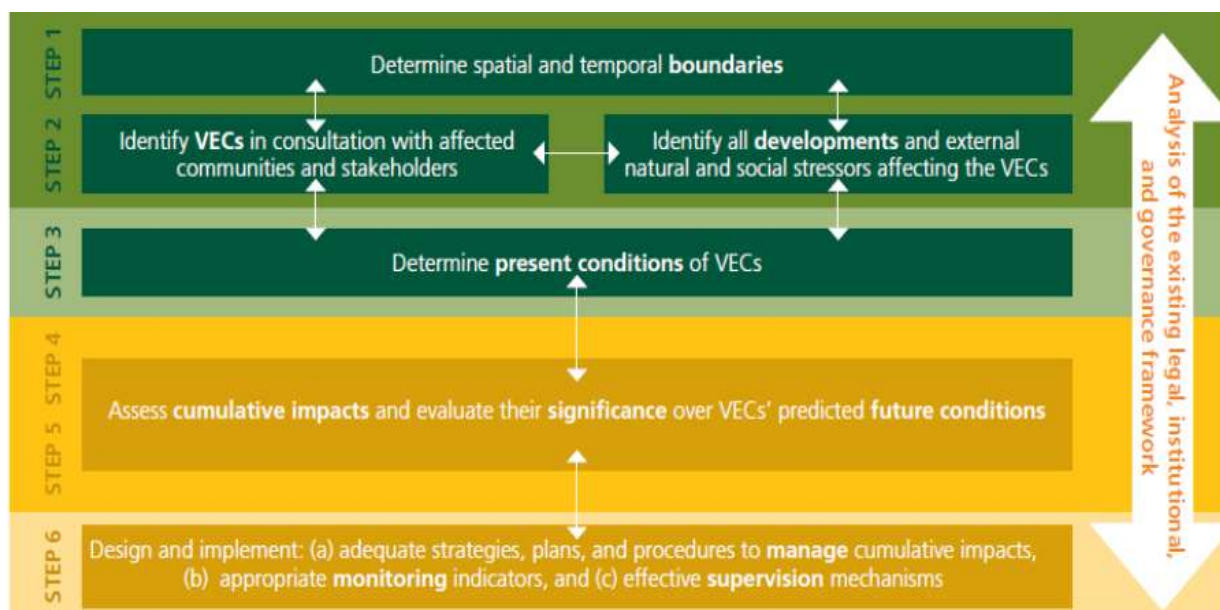


Figure 8.1: RCIA six step approach
Source: IFC, 2013

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 8.3 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 8.3: 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. 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. 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. 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. 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. 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 NDPIII 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 (CO₂), methane (CH₄), and nitrous oxide (N₂O), 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 8.4 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 Disturbance from human activities (e.g. noise, artificial light, vibration, vehicular movement) 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 Forest Reserve. 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 Improved Road access.	Operations by private operators and other tourism programs and activities including NFA Camp site 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 especially along Kabale – Kisoro road for works in the vicinity. 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 shall 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 transportaion, 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"> - Initiates and funds the project. - Ensures compliance with environmental and social standards. - Obtains necessary approvals and permits. 	<ul style="list-style-type: none"> - Site Preparation and Construction - Operation - Decommissioning
Supervising Consultant/Project Manager	<ul style="list-style-type: none"> - Provides oversight and technical expertise. - Ensures project activities align with environmental and social guidelines. - Conducts inspections and offers advice. 	<ul style="list-style-type: none"> - Site Preparation and Construction
Local Council Leaders	<ul style="list-style-type: none"> - Facilitate community engagement and communication. - Represent and address the interests and concerns of the local population. - Act as intermediaries between the community and project stakeholders. 	<ul style="list-style-type: none"> - Site Preparation and Construction - Operation - Decommissioning
District Local Governments	<ul style="list-style-type: none"> - Review and approve projects within their jurisdiction. - Ensure projects comply with local regulations. - May monitor and address environmental and social impacts within their districts. 	<ul style="list-style-type: none"> - Site Preparation and Construction - Operation - Decommissioning
Regulatory Authorities (NEMA, MGLSD etc.)	<ul style="list-style-type: none"> - Review and approve environmental impact assessments. 	<ul style="list-style-type: none"> - Site Preparation and Construction - Operation - Decommissioning

Party involved	Roles and Responsibility	Project Phase
	<ul style="list-style-type: none"> - Monitor project compliance with national environmental and social standards. - Provide guidance and enforce regulations to protect the environment and social welfare. 	

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

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
SOCIAL SAFE GAURDS						
8.2.1	Economic spill over	Enhancement: <ol style="list-style-type: none"> 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. 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 	Number of construction workers from the local area hired at the site Records of training for construction workers	Quarterly	N/A	Project manager (NFA) Rubanda District Local Government Local council leaders (Kagano)
8.2.2	Technological transfer	Enhancement: <ol style="list-style-type: none"> 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 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. 	Records of training of construction workers (including local labour and interns) Documentation of the construction of the VIC	Quarterly	N/A	Project manager (NFA) Rubanda District Local Government Local council leaders (Kagano)
8.2.11	Impacts of an increase in traffic	Mitigation: <ol style="list-style-type: none"> Inform and sensitize the community in advance of the anticipated impacts on traffic and roadways during the construction phase. Transport of construction materials shall be scheduled for off-peak traffic hours. This will reduce the risk of traffic flow disruptions on Kabale - Kisoro road. Appropriate traffic warning signs shall be placed along Kabale - Kisoro road to inform road users of trucks turning ahead and instruct them to reduce speed. Loading of transportation trucks shall be within the permissible limits (guidelines) for Uganda National Roads Authority (UNRA) axle loads for the targeted roads. Debris and excavation shall be properly covered during transportation from the site to prevent spillage during transportation The trucks shall be parked on the proposed site until they are offloaded. Heavy equipment shall be transported early morning (12 am – 5 am) with proper pilotage. The use of flagmen shall be employed to regulate traffic flow. Training and sensitization of personnel (drivers) in road safety and traffic regulations shall also be done by road contractors. 	Quality of the signage along the route leading to the construction site and near the site Number of traffic incidents / complaints per week	Weekly	Part of the operation costs / contractual fees	Project Manager - Project Implementing Agencies (PIA) under the IFPA – CD Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) Traffic warden (Contractor) Uganda Police Force (Directorate of Traffic and Road Safety) Rubanda District Local Government Local council leaders (Kagano)
8.2.13	Impacts related to population influx	Mitigation: <ol style="list-style-type: none"> Workers shall undergo training on social ethics and safe sex practices to curtail the spread of HIV/AIDS and other STDs A grievance redress mechanism shall be established to amicably resolve any grievances between the community and workers on site 	Complaints from the workers and community members	Quarterly	3,000	Project Manager – NFA under the IFPA – CD Rubanda District Local Government

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		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				Local council leaders (Kagano)
ENVIRONMENTAL SAFETY GUARDS						
8.2.3	Introduction of invasive species	Mitigation: <ol style="list-style-type: none"> The proponent shall use clean, coarse fill material for grading to reduce the potential for introducing or spreading non-native, or invasive plant species Manual control of invasive species shall be implemented at the site. Establish a monitoring and information system for invasive species to support planning and management. Landscaping and establishment of the arboretum shall use indigenous species The proponent shall enhance ongoing programs to combat invasive species within the CFR 	Records of invasive species sited and removed from the site Records of plant species used in landscaping	Monthly	Part of the CFR Management plan – implementation fees	Project Manager - Project Implementing Agencies (PIA) under the IFPA – CD Rubanda District Local Government Local council leaders (Kagano)
8.2.4	Impact of particulate, fugitive and vehicular exhaust emissions	Mitigation: <ol style="list-style-type: none"> Scheduling construction activities for periods when wind speeds are low Employing dust suppression techniques like water sprinkling at the site Fencing the site to reduce wind-induced re-entrainment of dust particles Covering trucks hauling debris and excavation spoil to curtail dust emissions during transportation Selecting an appropriate disposal site such as to limit the distance travelled and disruption to the receptor communities 	Ambient air quality Complaints log	Daily	2,000	Project Manager - NFA under the IFPA - CD Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) NEMA Rubanda District Local Government Local council leaders (Kagano)
8.2.5	Occupational Health and Safety risks	Mitigation: <ol style="list-style-type: none"> All excavation work and lifting shall be supervised by a competent person and operatives doing the work shall be given clear instructions; Sides of excavations shall be thoroughly inspected: <ul style="list-style-type: none"> daily, before each shift and after an interruption in work of more than one day; after an unexpected fall to the ground; after substantial damage to supports; after heavy rain; when boulder formations are encountered. 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; 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"> the proper storage of materials and equipment; the removal of scrap, waste and debris at appropriate intervals 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. 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 	Records of incidents (accidents and near misses) at the construction site The use of PPE at the construction site Records of daily toolbox talks and workers' orientation Presence of appropriate signage on-site Presence of supervisors on-site	Monthly	3,000	Project manager (NFA) EHSO (Contractor) NEMA MGLSD Rubanda District Local Government Local council leaders (Kagano)

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		<ol style="list-style-type: none"> 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"> - adequate safety nets or safety sheets shall be erected and maintained, or - adequate safety harnesses shall be provided and used. 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. 9. All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> - avoid the risk of fire; - quickly and efficiently control any outbreak of fire; - bring about a quick and safe evacuation of persons 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 H) as they conduct their tasks at the site 				
8.2.6	Solid waste generation	Mitigation: <ol style="list-style-type: none"> 1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements 2. Recycle construction materials from the existing structures where possible 3. Establish adequate gender-segregated sanitary facilities for all workers and visitors to the site 4. Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site 5. Hire a licensed hazardous waste handler to remove and dispose of hazardous waste materials 6. Train construction workers on proper waste management practices 7. Cover trucks ferrying debris from the site to mitigate spillages during transportation 8. Site stockpiles of debris away from stormwater paths 	Records of solid waste disposed of	Daily	3,000	Project manager (NFA) Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) NEMA Rubanda District Local Government Local council leaders (Kagano)
8.2.7	Climate change impacts	Mitigation: <ol style="list-style-type: none"> 1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 2. Open incineration of waste at the site shall be strictly prohibited 3. All plastic waste generated at the site shall be collected in such a manner as to allow it to be recycled 4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site 	Records of refrigerants used and service logs for air conditioning units Records of solid waste disposed of/sent for recycling Health of the natural vegetation surrounding the site Ambient air quality	Quarterly	3,000	Project manager (NFA) Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) NEMA Rubanda District Local Government

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
						Local council leaders (Kagano)
8.2.8	Visual impacts	Mitigation: <ol style="list-style-type: none"> 1. Completely fence off the site during the site preparation phase 2. Start landscaping and replanting ornamental trees as soon as it is reasonable to restore the visual appeal of the site 3. Schedule excavation works for January to March when the visitor numbers are low 	Complaints log Presence of fencing/hoarding around the site	Quarterly	N/A	Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) Rubanda District Local Government Local council leaders (Kagano)
8.2.9	Impacts on water resources	Mitigation: <ol style="list-style-type: none"> 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 	Records of water usage at the construction site Complaint's log	Bi-weekly	4,000	Project manager (NFA) Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) MWE NEMA Rubanda District Local Government Local council leaders (Kagano)
8.2.10	Fire hazards	Mitigation: <ol style="list-style-type: none"> 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 	Records of fire outbreaks at the project site Presence of firefighting equipment at the site Records of fire firefighting drills	Monthly	4,000	Project manager (NFA) Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) EHSO (Contractor) Uganda Police Force (Directorate of Fire and Rescue Services)

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
						Rubanda District Local Government Local council leaders (Kagano)
8.2.12	Impact on ambient noise	Mitigation: <ol style="list-style-type: none"> All construction and excavation shall be restricted to the day-time only 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 Equipment with the lowest noise rating shall be used where feasible NRMM such as generators shall be fitted with mufflers, enclosures and any other damping material to reduce their noise emission All machinery used on site shall be promptly serviced and maintained. Maintenance of old equipment can reduce noise levels by 50% Sound-absorbing barriers like plywood shall be erected around the site and noise equipment Noisy NRMM shall be sited away from the occupied structures adjacent to the site All NRMM and vehicles shall be shut down when not in use All workers shall be provided with the appropriate PPE such as earmuffs or plugs to protect them from noise levels above 85 dBA 	Daily noise levels generated due to the activities at the construction site in dB Complaints from the workers and community members	Daily	2,000	Project manager (NFA) Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) EHSO (Contractor) NEMA
8.2.14	Loss of vegetation and terrestrial habitat alteration	Mitigation: <ol style="list-style-type: none"> 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. 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; 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; 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; 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. 	Records of species cleared to create space for the VIC structures Records of tree species replanted Animal species present on site	Quarterly	3,000	Rubanda District Local Government Local council leaders (Kagano)
8.2.15	Poaching	Mitigation: <ol style="list-style-type: none"> Implement strict control over firearms and other weapons to prevent them from falling into the hands of poachers. 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. 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. 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. 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 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. 	Record of poaching incidences reported to the Authority Records of training and awareness programs for construction workers Presence of rangers on site Complaints log	Daily	Part of the CFR Management plan – implementation fees	Project manager (NFA) Health Safety and Environment Manager - IFPA - CD project Technical Service Providers (TSP) National Wildlife Crime Coordination Task Force (NWCCTF) Rubanda District Local Government

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		7. Collaborate with local law enforcement agencies to ensure regular patrols and responses to any reported incidents. Work closely with Echuya Central Forest Reserve sector management to share information and coordinate anti-poaching efforts during the construction phase.				Local council leaders (Kagano)
8.2.16	Animal abuse	Mitigation: <ol style="list-style-type: none"> 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) 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 A game ranger shall be retained at the site at all times to handle problem animals All incidences of attacks on animals or workers shall be reported to the proponent Fully stocked first aid kits equipped with anti-venom and anti-rabies vaccines shall be kept at the site 	Record of animal abuse incidences reported to the Authority Records of training and awareness programs for construction workers Complaints log	Daily	Part of the CFR Management plan – implementation fees	Local council leaders (Kagano)
8.2.17	Illegal logging	Mitigation: <ol style="list-style-type: none"> The timber used in the construction of the VIC shall be sourced from licensed timber dealers indicating the source of the trees 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. 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. 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. The proponent shall establish habitat monitoring systems to support programmes aimed at rehabilitating the CFRs The government may consider the provision of solar products at subsidized rates to minimize the cutting of trees for charcoal and firewood 	Records of illegal logging reported to the Authority Records of training and awareness programs for construction workers Supply agreements indicating source of timber used at the site Complaints log	Daily		

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

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
SOCIAL SAFE GAURDS						
8.3.1	Tourism boost	Enhancement: <ol style="list-style-type: none"> 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 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 	Records of tourist visiting the CFR/VIC	Annually	Part of the CFR Management plan – implementation fees	Project manager (NFA) MTWA UTB Rubanda District Local Government Local council leaders (Kagano)
8.3.2	Enhanced visitor experience	Enhancement: <ol style="list-style-type: none"> The staff at the VIC shall be extensively trained in hospitality, information dissemination, interpretation and quality assurance The proponent shall put in place quality control measures to ensure the information shared at the VIC is accurate, up-to-date and relevant 	Feedback from the various stakeholders (tourists, tour operators, Government MDAs)	Quarterly		Project manager (NFA) MTWA UTB

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		3. 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				Rubanda District Local Government Local council leaders (Kagano)
8.3.3	Socio-economic benefits	Enhancement: 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 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 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	Records of benefit sharing programs indicating number of beneficiaries Records of training conducted among the local communities Record of local businesses providing goods and services to the VIC Complaints log	Quarterly		Project manager (NFA) Rubanda District Local Government Local council leaders (Kagano)
8.3.4	Security risks	Mitigation: 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 2. Signage instructing all personnel to safeguard their personal belongings at all times shall be displayed within all sections of the VIC 3. The VIC will be kept under CCTV surveillance, 24/7; the CCTV system shall have remote access capabilities 4. The proponent shall provide ample security at the VIC to tackle any threats to life and property 5. The security personnel at the VIC shall be instructed to use desist from unlawful acts such as torture, excessive force, extortion, etc. 6. The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals 7. The proponent shall adhere to any guidance issued by security organs i.e. Uganda Police Force, Interpol, UPDF etc.	Record of security incidences at the VIC (i.e. theft, assault etc.) Presence and effectiveness of security protocols at the VIC (checkpoints and CCTV surveillance systems)	Daily	,000	Project manager (NFA) UPF Interpol UPDF Rubanda District Local Government Local council leaders (Kagano)
8.3.13	Traffic disruption	Mitigation: 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 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) 3. The proponent shall develop a traffic management plan to address the increase in traffic during the peak season 4. The proponent shall conduct regular patrols to ensure road users are safe and the road is clear of obstacles and criminals	Quality of the signage along the route leading to the construction site and near the site Number of traffic incidents / complaints per month	Monthly	Part of the CFR Management plan – implementation fees	Project manager (NFA) Uganda Police Force (Directorate of Traffic and Road Safety) Rubanda District Local Government Local council leaders (Kagano)
8.3.11	Loss of cultural identity	Mitigation: 1. The proponent shall engage the relevant stakeholders to identify how local cultural heritage may be incorporated into or affected by the VIC 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	Complaints log Minutes from consultative meetings on the impact of the VIC on cultural heritage	Annually	Part of the CFR Management plan – implementation fees	Project manager (NFA) Cultural institutions MGLSD (Department of Family and Cultural Affairs)

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		3. The proponent shall implement a grievance redress mechanism to amicably resolve any adverse cultural impacts or any forms of misrepresentation				Rubanda District Local Government Local council leaders (Kagano)
8.3.14	Dependence on tourism-related activities	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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. 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. 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. 	Number and scale of local businesses involved in tourism Complaints from community leaders	Annually	Part of the CFR Management plan – implementation fees	Project Manager - NFA Rubanda District Local Government Local council leaders (Kalengyere LC1)
8.3.15	Decay of marriage and sexual norms	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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 	Complaints log Records / minutes from stakeholder engagement meetings	Annually		Project Manager - NFA Cultural institutions MGLSD (Department of Family and Cultural Affairs) Rubanda District Local Government Local council leaders (Kalengyere LC1)
8.3.16	Impact on child rearing norms and family structures	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Efforts could be made to ensure that economic opportunities generated by tourism are distributed in a way that is compatible with the local's traditional values and practices. 	Complaints log Records / minutes from stakeholder engagement meetings	Annually		Project Manager - NFA Cultural institutions MGLSD (Department of Family and Cultural Affairs) Rubanda District Local Government Local council leaders (Kalengyere LC1)
8.3.17	Shift in balance of power	Mitigation:	Complaints log	Annually		Project Manager - NFA

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		<ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Efforts could be made to promote the importance of traditional leadership and governance systems. This could involve working with the locals to integrate traditional systems of governance into formal decision-making processes, or supporting the development of programs that promote the importance of traditional knowledge 	Records / minutes from stakeholder engagement meetings			Cultural institutions MGLSD (Department of Family and Cultural Affairs) Rubanda District Local Government Local council leaders (Kalengyere LC1)
8.3.18	Impact on traditional systems of healing	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Involve the locals in establishing herbal demonstration sites outside the Forest Reserve 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. 	Complaints log Records / minutes from stakeholder engagement meetings	Annually		Project Manager - NFA Rubanda District Local Government Local council leaders (Kalengyere LC1)
8.3.19	Class divide and social conflict	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. The locals shall be fairly compensated for their participation in tourism initiatives, including benefit-sharing schemes and fair wages for employees.. 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. 4. Efforts could be made to promote cultural awareness and understanding between different social groups within the local community 	Complaints log Records / minutes from stakeholder engagement meetings	Annually		Project Manager - NFA Rubanda District Local Government Local council leaders (Kalengyere LC1)
8.3.20	Impact of commercialization of culture	Mitigation: <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Design and implement activities that take into account the need for integrating conservation friendly cultural values of the Batwa people into PA management planning and the management of the protected areas where possible 3. The proponent shall respect the intellectual property rights of the creators and custodians of cultural products. 4. Efforts could also be made to ensure that the commercialization of the local culture is done in a responsible and sustainable manner like cultural sensitivity training 	Number and scale of local businesses involved in tourism Records / minutes from stakeholder engagement meetings Complaints from community leaders	Annually		Project Manager - NFA Cultural institutions MGLSD (Department of Family and Cultural Affairs) Rubanda District Local Government Local council leaders (Kalengyere LC1)

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		<p>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</p> <p>7. Efforts could be made to empower the local community to control the representation and sharing of their cultural heritage..</p>				
8.3.21	Cultural preservation	<p>Enhancement:</p> <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. 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. 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. 	<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>Rubanda District Local Government</p> <p>Local council leaders (Kalengyere LC1)</p>
8.3.22	Community development	<p>Enhancement:</p> <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 2. Create and provide gender balanced employment opportunities such as tour guides, porters, boundary management 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; 4. For ecotourism activities, prioritize local community member's employment as tour guides considering their unique local and cultural knowledge 	<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>Rubanda District Local Government</p> <p>Local council leaders (Kalengyere LC1)</p>
8.3.23	Enhancing education and awareness	<p>Enhancement:</p> <ol style="list-style-type: none"> 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 or stakeholders to engage with the project on issues of concern or unaddressed impacts 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. 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 4. VICs shall provide accurate and up-to-date information, as well as high-quality educational materials such as brochures, maps, and multimedia displays. 	<p>Records / minutes from stakeholder engagement meetings</p> <p>Number and reach of sensitization programs</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>Rubanda District Local Government</p> <p>Local council leaders (Kalengyere LC1)</p>

ENVIRONMENT SAFE GAURDS

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
8.3.5	Occupational Safety and Health risks	<p>Mitigation:</p> <ol style="list-style-type: none"> 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; 2. Medical pre-selection of employees to ensure that they are fit to work in these environments; 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; 4. Workrooms shall have enough free space to allow people to move about with ease; 5. The workplace, and certain equipment, devices and systems shall be maintained in efficient working order (efficient for health, safety and welfare) 6. There shall be sufficient traffic routes, of sufficient width and headroom, allowing people and vehicles to circulate safely and with ease 7. Set appropriate speed limits, and make sure they, and any other traffic rules, are obeyed; 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; 9. Cleaning and the removal of waste shall be carried out as necessary by an effective method. Waste shall be stored in suitable receptacles. 10. Doors and gates shall be suitably constructed and fitted with safety devices if necessary; 11. Suitable and sufficient sanitary conveniences and washing facilities shall be provided at readily accessible places; and 12. An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, shall be provided 13. The employees at the VIC shall be provided with the appropriate PPE considering the hazards they are occupationally exposed to 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 15. A fully stocked first aid box shall be maintained at the site at all times 16. All employees shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site 	<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>Rubanda District Local Government</p> <p>Local council leaders (Kagano)</p>
8.3.6	Fire risks	<p>Mitigation:</p> <ol style="list-style-type: none"> 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. 2. All staff 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 VIC 	<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>Rubanda District Local Government</p> <p>Local council leaders (Kagano)</p>

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		<ol style="list-style-type: none"> 4. Legible maps indicating evacuation routes and assembly points shall be displayed within all sections of the VIC. 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 6. All combustible materials including waste shall be kept away from fuel, sources of heat and ignition 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 				
8.3.8	Solid waste generation	Mitigation: <ol style="list-style-type: none"> 1. All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements 2. Well-labelled bins shall be placed at all sections of the building, these will aid in the segregation of waste 3. Legible signage showing where each type of waste shall be disposed of shall be put up in all sections of the VIC 4. The waste receptacles shall have well-secured lids to prevent animals from accessing the discarded materials 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 	Presence and effectiveness of solid waste receptacles Records of waste disposed of/sent for recycling MOUs with licensed waste handlers	Monthly	3,000	Project manager (NFA) NEMA Rubanda District Local Government Local council leaders (Kagano)
8.3.9	Climate change impacts	Mitigation: <ol style="list-style-type: none"> 1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 2. Open incineration of waste at the VIC shall be strictly prohibited 3. All plastic waste generated at the VIC shall be collected in such a manner as to allow it to be recycled 4. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated at the site 5. The proponent shall maintain an inventory of their estimated GHG emissions 	Records of refrigerants used and service logs for air conditioning units Records of solid waste disposed of/sent for recycling GHG emissions inventory Health of the natural vegetation surrounding the site Ambient air quality	Annually	Part of the CFR Management plan – implementation fees	Project manager (NFA) NEMA Rubanda District Local Government Local council leaders (Kagano)
8.3.10	Impacts on air quality	Mitigation: <ol style="list-style-type: none"> 1. The proponent shall not use banned refrigerants in any cooling or air conditioning units. Preferable options shall be refrigerants as recommended under the National Environment (Management of Ozone Depleting Substances & Products) Regulations S.I. No. 48 of 2020 2. Open incineration of waste at the VIC shall be strictly prohibited 3. The natural vegetation around the site shall be protected to act as a buffer/sink for air pollutants generated 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 	Ambient air quality Records of refrigerants used and service logs for air conditioning units Complaints log	Monthly	1,000	Project manager (NFA) NEMA Rubanda District Local Government Local council leaders (Kagano)
8.3.12	Risk of oil and fuel spills	Mitigation:	Soil quality Complaints log	Annually	1,000	Project manager (NFA) NEMA

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		<ol style="list-style-type: none"> All wastewater and surface runoff shall be channeled through an oil interceptor before it is discharged into the receiving environment; this will be emptied by a licensed waste handler The proponent shall maintain spill kits at the VIC in the event of significant oil spills Contaminated soil from a significant oil spill shall be stored in a secure drum and disposed of by a licensed waste handler 	Presence and effectiveness of oil pollution controls (interceptor, spill kits etc.)			Rubanda District Local Government Local council leaders (Kagano)

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
ENVIRONMENT SAFE GAURDS						
8.4.1	Occupational Health and Safety risks	Mitigation: <ol style="list-style-type: none"> All contractors shall adhere to the proposed Occupational Safety and Health plan (Appendix H) as they conduct their tasks at the site The decommissioning crews shall be inducted and trained on the safety measures and guidelines and observed while at the site All appropriate measures shall be taken by the contractor and the proponent to: <ul style="list-style-type: none"> avoid the risk of fire; control quickly and efficiently any outbreak of fire; bring about a quick and safe evacuation of persons Smoking shall be prohibited and "No Smoking" notices be prominently displayed in all appropriate locations within the subject site 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. Provision of appropriate PPE to all workers. 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"> adequate safety nets or safety sheets shall be erected and maintained; or adequate safety harnesses shall be provided and used 	Records of incidents (accidents and near misses) at the construction site The use of PPE at the construction site Records of daily toolbox talks and workers' orientation Presence of appropriate signage on-site Presence of supervisors on-site	Monthly	6,000	Project manager (NFA) EHSO (Contractor) NEMA MGLSD Rubanda District Local Government
8.4.2	Waste generation	Mitigation: <ol style="list-style-type: none"> All waste shall be handled per the National Environment (Waste Management) Regulations, 2020, the Public Health Act, Cap 281, waste management plan (Appendix G) and all other relevant legal requirements at the time of decommissioning Establish adequate gender-segregated sanitary facilities for all workers at the decommissioning site Place well-labelled bins at all sections of the site, these will aid in the segregation of waste at the site Hire a licensed hazardous waste handler to remove and dispose of any hazardous substances Train the decommissioning workers on proper waste management practices Cover trucks ferrying debris from the site to curtail fugitive emissions during transportation Site stockpiles of debris away from stormwater paths 	Records of solid waste disposed of	Daily	7,000	Project manager (NFA) EHSO (Contractor) NEMA Rubanda District Local Government
8.4.3	Visual impacts	Mitigation: <ol style="list-style-type: none"> Completely fence off the site during the decommissioning phase 	Complaints log	Quarterly	N/A	Project manager (NFA)

S/no.	Impact	Mitigation/enhancement Measures	Monitoring Indicators	Monitoring Frequency	Resources & costs (USD)	Institutional Responsibility
		<ol style="list-style-type: none"> 2. Start restoration activities as soon as it is reasonable to restore the visual appeal of the site 3. Schedule decommissioning for periods when the visitor numbers are low 	Presence of fencing/hoarding around the site			Rubanda District Local Government
8.4.4	Restoration of the disturbed environment	<p>Enhancement:</p> <ol style="list-style-type: none"> 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 	<p>Records of species replanted at the site</p> <p>Restoration certificate</p>	Monthly	To be discussed with the contractor	<p>Project manager (NFA)</p> <p>NEMA</p> <p>Rubanda District Local Government</p>

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;

Provide effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the construction phase of the project

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
1.	Biodiversity Management and Action Plan (BMAP)	<ul style="list-style-type: none"> i. Overarching biodiversity management control ii. Project biodiversity management system iii. Biodiversity identification, management, monitoring and restoration iv. Provides tree inventory and replanting requirements v. Actions to ensure no net loss and preferably a net gain of biodiversity vi. Design inputs on location of animal crossings (assessment and identification of locations) vii. Alien species management
2.	Environmental Management and Action Plan	<ul style="list-style-type: none"> i. Noise and vibration levels mitigation and monitoring ii. Construction dust mitigation and monitoring iii. Pollution prevention and protection measures iv. Design input on spill prevention/location/containment structures around sensitive equipment, installation of appropriate spill clean- up equipment and development of response procedures v. Assessment and measures to prevent pollutants to enter pathway at source vi. Actions to be followed in case pollutants enter the pathway in order to avoid discharge vii. Waste Management, including: viii. Waste hierarchy (i.e. reduction at source, reuse, recycling, energy recovery, responsible disposal) and green procurement; ix. Identification and classification of waste; x. Waste register; xi. Waste handling (i.e. collection, segregation and containers, storage, treatment, transport and documentation, disposal); and xii. Monitoring and reporting. xiii. Resource Management including: Objectives, targets, processes in place for resource efficiency Water abstraction, conservation, discharge measures xiv. Aggregate management planning xv. Energy and fuel management
3.	Soil Erosion, Reinstatement & Landscape Management Plan	<ul style="list-style-type: none"> i. Defines soil erosion controls and associated standards ii. Temporary and permanent erosion control measures iii. Inspection and maintenance programme iv. Reinstatement and revegetation measures and planning
4.	Auxiliary Sites and Associated Facilities Management Plan	<ul style="list-style-type: none"> i. EHS screening of associated facilities like campsite, parking site.

No.	MANAGEMENT PLAN	ISSUES COVERED
		<ul style="list-style-type: none"> ii. Verification of compliance for third-party facilities iii. Associated facilities EHS assurance iv. Traffic-related aspects management (for construction traffic to/from associated facilities)
5.	Waste Management Plan	<ul style="list-style-type: none"> i. Waste management policy ii. Categorization of waste, waste management hierarchy iii. Service providers to manage deferent wastes (Human waste and mobile toilets, Site clinic waste, throughput the entire cycle for solid and liquid waste)
6.	Hazardous Substance Management Plan	Access, storage and management of hazardous substances used at the worksites like hydrocarbons
7.	Cultural Heritage Management Plan	<ul style="list-style-type: none"> i. Cultural heritage supervision and management during construction ii. Chance find training, management and response iii. Interface and coordination with relevant authorities iv. Monitoring and reporting of intervention activities to recover and record cultural heritage values
8.	Human Resource and Labour Force Management Plan	<ul style="list-style-type: none"> i. Mobilization of the key staff ii. Training and skill development activities; iii. Employee grievance mechanism; and iv. Monitoring and reporting v. Preparation of the Local Recruitment Procedure to address inter alia the following measures: 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. 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. viii. Maximize use of local subcontractors and suppliers. Information about work opportunities will be made available to the local population. ix. Workers' community interaction behavioural code of conduct Subcontractor employment practices conformance, reporting and monitoring x. Key Organization Plan, Recruitment and Career Development Procedure, Working Conditions, Disciplinary Procedure, Training Procedure, staff contracts, benefits
9.	Occupational Health & Safety Management Plan	<ul style="list-style-type: none"> i. Provisions of IFPA-CD Occupational Health and Safety measures ii. Summary of OHS hazards and risks identification and assessment iii. High-risk activities identification and management 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. v. PPE Use Manual vi. Risk Assessment vii. Hazard, Risk and Impact Assessment Procedure viii. Accident Investigation and Reporting, Near Miss Procedure

No.	MANAGEMENT PLAN	ISSUES COVERED
		ix. Emergency Evacuation Procedure
10.	Emergency Response Plan	<ul style="list-style-type: none"> i. Provisions of IFPA-CD Occupational Health and Safety measures ii. Emergency response in event of spills, fire, accidents, earthquake, flood, extreme weather, terrorist threats or attacks etc. iii. Emergency response equipment/materials requirements iv. Spill containment and clean-up plan v. Procedure for staff and subcontractors to report any incidents and the investigation, remediation and preventive actions taken. vi. Regular emergency response training including in the use of spill response equipment vii. Emergency Communication Procedure including with local communities and authorities
11.	Transport Control and Site Access Plan	<ul style="list-style-type: none"> i. Road traffic management including: ii. Establishing rights-of-way, site speed limits, vehicle inspection requirements, operating rules and procedures iii. Local traffic signage. 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. v. Training of drivers and equipment operators. vi. Site Access Procedure vii. Communication protocols and procedures viii. Internal monitoring and reporting
12.	Child Protection Management Plan	<ul style="list-style-type: none"> i. A child protection policy and commitment ii. Code of conducts for workers and special code for drivers, operators and security guards iii. Sensitization of workers and community iv. Identification of any violations v. Clear protocols for management of any child rights abuse attributed to the project vi. Tracking and reporting of child rights abuses
13.	Gender Management Plan (Including GBV)	<ul style="list-style-type: none"> i. Provisions of the IFPA – CD Stakeholder Engagement Framework and Plan (SEFP) ii. A Gender policy Statement iii. Code of conducts for workers and special code for drivers, operators and security guards on GBV iv. Sensitization of workers and community on GBV v. Identification of any violations vi. Clear protocols for management of any GBV cases attributed to the project vii. Tracking and reporting of child rights abuses
14.	HIV/AIDS and STIs Management Plan	<ul style="list-style-type: none"> i. HIV/ AIDS policy and commitment ii. HIV Code of conducts for workers and special code for drivers, operators and security guards iii. Sensitization of workers and community on HIV prevention iv. Identification of any violations v. HIV counselling, testing and referral of positive cases for treatment vi. Tracking and reporting of HIV and AIDS activities for workers and community

No.	MANAGEMENT PLAN	ISSUES COVERED
15.	Stakeholder Engagement Management Plan	<ul style="list-style-type: none"> i. Provisions of the IFPA – CD Stakeholder Engagement Framework and Plan (SEFP) ii. Overarching framework for all stakeholder engagement- related activities iii. Stakeholder identification; iv. Stakeholder engagement program v. Monitoring and reporting
16.	Subcontractors and Supply Chain Management Plan	<ul style="list-style-type: none"> i. Roles & responsibilities of sub-contractors ii. Includes key requirements extracted from above plans & procedures iii. Need to develop subcontractor’s ESHS Management Plan iv. Establish Health, Safety and Environmental performances to monitor v. Monitoring and reporting to the main contractor vi. Principles, methodology and acquisition of construction materials
17.	Security Management Plan	<ul style="list-style-type: none"> i. The security measures, particularly for the Construction Stage of the Project ii. Access control, registration, security briefings, involvement of LC and Uganda Police, fencing of construction section in the vicinity of settlements or communities).
18.	Grievance Management Plan	<ul style="list-style-type: none"> i. Provisions of the IFPA – CD Stakeholder Engagement Framework and Plan (SEFP) ii. Grievance Management Guidelines/ procedures iii. GRC in place for community and workers iv. Grievance registers v. GRC Meetings vi. Grievance trainings and sanitizations vii. Escalation mechanisms of grievances viii. Grievances tracking and reporting
19.	Decommissioning Plan	<ul style="list-style-type: none"> i. Decommissioning of workers ii. Decommissioning of equipment iii. Restoration of all sites iv. Decommissioning reports
20.	Risk Management Plan	<ul style="list-style-type: none"> i. Provisions of IFPA-CD Occupational Health and Safety measures ii. Job and hazard specific risks identified iii. Risk management strategies established and implemented iv. Risk tracking and reporting
21.	Safeguards Reporting and Quality Assurance Plan	<ul style="list-style-type: none"> i. Nature of reports and minutes (daily, weekly, monthly, quarterly) ii. E&S Audit Reports iii. Reviews and validation by Supervising Consultant iv. Approvals and validation by Client v. Monitoring checklists vi. Reporting templates
22.	Wildlife Management Plan	<ul style="list-style-type: none"> i. UWAs plan for wildlife outside parks ii. Problem animals iii. Emergencies iv. Poaching v. Reporting incidents vi. Monitoring

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 should 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;

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.

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.

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.

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.

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;

Eliminate exposure and incidences of occupational injuries and diseases among all categories of the workforce; and

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;

1. 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
2. Keep a copy of the management plan for the whole duration of the project
3. Review the plan regularly throughout the project and make any revisions known to those working on the project
4. Among others, the contractor shall endure the following;

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:

1. What can happen?
2. How likely is it to happen?
3. What are the consequences if it does happen?
4. The contractor shall identify the risks associated with the various construction activities, propose and implement measure to avert these risks and mitigate the impacts.

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;

1. Induction training carried out by section
2. Fire drills conducted (number and sections)
3. Health and safety tool box talks conducted
4. Incident statistics categorized where possible
5. Fatalities on the project by section If any
6. Near misses records
7. Notifiable incidences
8. Disbursement and use of PPEs

9. Compliance levels among employees by section
10. Equipment certification by relevant agencies
11. External inspections and their outcomes (If any).

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.

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:

1. Receive all notifications of incidents/accidents and ensure proper response is being followed including reporting, investigations and review.
2. Once aware of an emergency, the response coordinator shall take the following actions:
3. Contact or communicate with emergency services
4. Coordinate activities of all personnel in the emergency response team and monitor its effectiveness
5. Inform the Contract Manager or Site Manager of the emergency
6. Coordinate the activities of all personnel in the emergency response team and make further directions as required by the situation;
7. Inform the team, Contract Manager and Site Manager of the end of the emergency situation
8. Maintain the Project Emergency Response Plans and associated processes;
9. Display names and contacts of personnel to be reached out in case of emergencies
10. Provide the incident report, and actions being taken to prevent reoccurrence
11. Coordinate training requirements for the emergency response team and all other site personnel.
12. Ensure that adequate emergency response information and instructions are provided in trainings and inductions;
13. 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:

1. Construction, use, occupation and management of campsites and associated facilities.
2. Construction of culverts, and storm water drains
3. Establishment equipment yards,
4. Earthworks and establishment of pavement layers
5. Construction of platforms, vehicle park platform and plant storage areas
6. Establishment of aggregate stockpiling areas and cement silos
7. Establishment and use of fuel storage areas
8. Establishment of spoil stockpile areas
9. Landscaping and grassing
10. 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;

1. Ensure that first aid kits are provided on every active site and supplies are replenished.
2. 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.
3. 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:

1. Person's present must maintain calm
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. The Safety Officer, or his/ her representative shall ensure the Contract Manager is notified immediately.

Evacuation procedure

1. 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.
2. An Evacuation Personnel shall be designated for every site, and is particularly applicable for Campsites, quarry and culvert sections among others.
3. 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
4. Personnel onsite must follow the instructions of the Evacuation Personnel.
5. Personnel must follow the directional pointers to the nearest emergency exit.
6. Evacuation must be undertaken in accordance to the emergency lay out plan.
7. Unscathed and mobile employees must be the first to be evacuated followed by the weak and the injured.

8. Evacuation personnel must work in pairs where possible to assist one another lifting heavy injured employees.
9. Aid mobile employees who are struggling or appear unsure, and assist visitors.
10. All personnel must keep calm and be evacuated by walking quickly and not run.
11. Tasks of emergency services must not be obstructed.
12. All personnel onsite must report directly to the allocated assembly point.
13. Persons in assembly points and those that may have been injured must be counted and missing persons searched
14. Personnel must not leave the assembly point until it has been deemed safe to do so.
15. 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 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;

1. Complaints related to dust, vibrations and noise generated by contractor's equipment
2. Traffic accidents caused by contractor's equipment and vehicles
3. Workers' behaviour in the community especially towards women, children and young girls
4. Illicit behaviors of contractor's workers e.g., use of obscene language, smoking, drug abuse and alcoholism among others
5. Blockage of access due to ongoing construction works
6. Clearance of right of way which may affect crops and trees
7. Temporary displacement of road side activities in urban areas
8. 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 should 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 should be done all throughout the period of the project. The messages should 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 construction is a preserve of men.

To avoid blockage of access to private property like homes, farmlands and grazing fields, the contractor should 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:

1. Mobilisation and recruitment strategies employed.
2. Number of workers employed disaggregated by sex, age.
3. Task allocation by sex.
4. Proportion of women employed in supervisory positions.
5. Proportion of wages accruing to women.
6. Facilities provided to enhance women's participation in road works
7. Capacity building for both female and male workers.
8. Lessons learnt from implementations that can be the basis of documenting good practices.
9. 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:

1. The objectives and requirements of the Project Quality Management Plan are still valid, and are being met.
2. Forthcoming activities are reviewed and any necessary amendments to the Project Quality Management Plan are put in place before the relevant work begins
3. 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 should be equipped with the following response equipment:

1. Spill kits containing absorbent pillows and fabric for vehicles
2. Plastic bags
3. Rubber gloves

The health and safety of personnel is paramount during an oil spill. Protective gear should 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;

1. The contractor and all workers shall ensure that oil spill equipment is in a known and accessible location.
2. 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.
3. 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
4. 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.
5. 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.
6. Drums or containers of recovered oil shall be stored in fuel containment areas close to workshops or other designated areas at the site.
7. 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.
8. 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 should cover;

1. Traffic management measures and safeguards
2. Roles and responsibilities
3. Traffic public awareness campaign/ notification procedure
4. Speed limit zone
5. Road signage position
6. Traffic incident reporting
7. Safe driving awareness/ trainings
8. Traffic risk control
9. 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:

1. Assessing environmental conditions and trends
2. Supporting environmental policy
3. Reporting to regulatory bodies
4. 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
Monthly	VIC manager	Sector manager
Annually	Sector Manager	Proponent – NFA 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:

1. An audit checklist.
2. Monitoring the specific indicators of the success of the ESMP in terms of anticipated results and environmental performance.
3. Systematic and scheduled inspection of the workplace.
4. Monitoring the work environment.
5. Monitoring workers' health and OHS systems.
6. Monitoring compliance with the environmental legislations and other laws governing the construction and operation of the VIC.

Reactive monitoring will include:

1. Safety of workers.
2. Occurrence of incidents and accidents at the workplace.
3. Emergency response.
4. 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

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 Community Construction workers	Project site	<p>East African standards on air quality specifications (EAS751:2010) as highlighted in the table below. (Construction phase).</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parameters</th> <th>Acceptable limits</th> </tr> </thead> <tbody> <tr> <td colspan="3">Emissions</td> </tr> <tr> <td>1.</td> <td>Particulate matter (PM_{2.5})</td> <td>60 µg/cm³</td> </tr> <tr> <td rowspan="3">2.</td> <td rowspan="3">Noxious gases</td> <td rowspan="2">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_x</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>CO_x</td> <td>0</td> <td></td> </tr> <tr> <td colspan="3">Air quality</td> </tr> <tr> <td>3</td> <td>Vibration at 10 - 50Hz frequency</td> <td>12.5mm/s</td> </tr> <tr> <td>4</td> <td>Ozone-depleting substance</td> <td></td> </tr> <tr> <td></td> <td>CFCs</td> <td>Zero (banned)</td> </tr> <tr> <td></td> <td>HCFC and HFCs</td> <td>Regulated</td> </tr> </tbody> </table> <p>Draft National Air Quality Standards, 2006</p> <p>Uganda's regulatory air quality standards for selected pollutants</p> <table border="1"> <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 (NO_x)</td> <td>24 hr 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 _{2.5})	60 µg/cm ³	2.	Noxious gases	Time-weighted Av	Acceptable Limit	One hour	0.8 ppm	Instant Peak	1.4ppm	SO _x	One hour	500g/m ³	Instant Peak (10 minutes)	0.191 ppm	CO _x	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 (CO ₂)	8 hr	9.0 ppm	Carbon monoxide (CO)	8 hr	9.0 ppm	Hydrocarbons	24 hr	5 mg/m ³	Nitrogen oxides (NO _x)	24 hr 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/Nm ³	Sulphur dioxide (SO ₂)	24 hr	0.15 ppm	Sulphur trioxide (SO ₃)	24 hr	200 µg/Nm ³	<p>Particulate matter (PM₂₅ (µg/m³)),</p> <p><i>Methodology:</i> Use of an active sampling method to monitor short-term concentrations of particulates, Casella Micro dust Pro™ digital aerosol monitor.</p> <p>Cases of Toxic and explosive gases (SO₂, NO, NO₂, CO₂, NH₂, H₂S, VOCs, CO, CLO₂, O₂, and Methane) may be monitored using a set of three MX6 iBrid™ portable gas monitors.</p>	Quarterly and/ or as and when required	EHSO - Contractors	5,000
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					<p>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</p> <p><u>Relevance to the Project:</u> Air emissions from construction sites should conform to the above regulatory limits through emissions control and monitoring.</p>																																																	
2.	Noise and vibration monitoring	Active construction site	Fauna and flora species on site Community Construction workers	Project site	<p>National Environment (Noise Standards and Control) Regulations, 2003</p> <table border="1"> <thead> <tr> <th></th> <th>Day</th> <th>Night</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Time frame: Day 6.00 a.m. -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.</p> <table border="1"> <thead> <tr> <th colspan="2">Vibration</th> </tr> </thead> <tbody> <tr> <td>Vibration at 10 - 50Hz frequency</td> <td>12.5mm/s</td> </tr> </tbody> </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 Noise limits dB (A) (Leq) <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 - Contractors	7,000																										
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3.	Exhaust gas temperature monitoring	Active construction site	Construction workers 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 - Contractors	Part of contractual fees																																													
4.	Water supply systems	Site water sources (including community water sources)	Community Construction workers	Wastewater discharge points Water supply points	<p>National Portable water standards – treated water</p> <table border="1"> <thead> <tr> <th>Parameters</th> <th>Units</th> <th>National Standards for Natural Potable water</th> </tr> </thead> <tbody> <tr> <td>Bi-Carbonates: CaCO₃</td> <td>as Mg/l</td> <td>500</td> </tr> <tr> <td>Calcium; Ca²⁺</td> <td>mg/l</td> <td>150</td> </tr> <tr> <td>Chlorides-Cl⁻</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⁻</td> <td>Mg/l</td> <td>1.5</td> </tr> <tr> <td>Hardness: total (as CaCO₃)</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: Mg²⁺</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: SO₄²⁻</td> <td>mg/l</td> <td>400</td> </tr> <tr> <td>Total Coliforms</td> <td>CFU/100ml</td> <td>10</td> </tr> </tbody> </table>	Parameters	Units	National Standards for Natural Potable water	Bi-Carbonates: CaCO ₃	as Mg/l	500	Calcium; Ca ²⁺	mg/l	150	Chlorides-Cl ⁻	mg/l	250	Colour	Ptco	50	Conductivity	µs/cm	2500	E-coli	CFU/100ml	0	Fluoride: F ⁻	Mg/l	1.5	Hardness: total (as CaCO ₃)	mg/l	600	Iron: total	mg/l	0.3	Magnesium: Mg ²⁺	mg/l	100	Nitrate-N	mg/l	45	pH	-	5.5-9.5	Sulphates: SO ₄ ²⁻	mg/l	400	Total Coliforms	CFU/100ml	10	<p><u>Methodology:</u> 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 CaCO₃, Chloride, Fluoride, Iron Total, Sulphate, Nitrate, E-coli</p>	Quarterly and/or as and when required	- EHSO - Contractors	6,000
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S/No.	Aspect	Site	Receptor	Sampling location	Limits/ standards	Parameters of interest and Methodology/ Tool	Frequency	Responsible personnel	Cost (USD)											
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Total suspended solids	mg/l	0.0																		
Turbidity	Ntu	25																		
5.	Oil spills;	<ul style="list-style-type: none"> - Fuel storage area - Mechanical equipment slabs. - Site workshops 	Hydrosphere Fauna and flora	<ul style="list-style-type: none"> - Groundwater - Soil - Drainage systems 	National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.	<ul style="list-style-type: none"> - Sulphur - Aromatic compounds - Hydro Carbons - Paraffins 	Quarterly	<ul style="list-style-type: none"> - EHSO - Contractors 	4,000											
6.	Solid Waste Management <ul style="list-style-type: none"> - Non-hazardous - Hazardous 	<ul style="list-style-type: none"> - Accommodation units at the campsite - Project site - Facility cafeteria - Equipment storage unit - Light and heavy oil jerry cans - Waste collection point 	Construction workers Community	Waste collection areas.	National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.	Non-Hazardous; Biodegradable – food waste Paper waste, etc. <u>Methodology:</u> Well labelled Waste collection bins Hazardous; fuel and coolant <u>Methodology:</u> Waste collection logs and transportation and disposal contracts and notices	Daily	<ul style="list-style-type: none"> - EHSO - Contractors 	5,000											
7.	Occupational Health and Safety	Active construction site	Construction workers Community	Construction site	The Occupational Safety and Health Act, 2006	Number of incidents (accidents and near misses) Results from quality tests of PPE The functionality of OHS safeguards such as alarms, fire detectors etc.	Quarterly	<ul style="list-style-type: none"> - EHSO - Contractors 	10,000											
8.	Biodiversity	VIC and its environs	Fauna and flora	VIC operational areas	National Forestry and Tree Planting Regulations, 2016 National Forestry and Tree Planting Act, 2003 Uganda Wildlife Act, 2019 Convention on the Protection of the World Cultural and Natural Heritage Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) (CITES) Convention on Biological Diversity, 1992 Bonn Convention, 1979 World Bank Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Presence of invasive species Species richness Reports of poaching and illegal logging	Quarterly	<ul style="list-style-type: none"> - EHSO - Contractors 	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 Tourists Fauna on site Community members	Main building Garden Parking lot Green belt	<p>National Environment (Noise Standards and Control) Regulations, 2003 within the operational phase of the project.</p> <table border="1"> <thead> <tr> <th></th> <th>Day</th> <th>Night</th> </tr> </thead> <tbody> <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> </tbody> </table> <p><i>Time frame: Day 6.00 a.m. -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.</i></p> <p><i>World Bank Environmental, Health and Safety Guidelines (EHSGs) 1.7: Noise</i></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 Noise limits dB (A) (Leq)</p> <p><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> <p>Complaint logs</p>	Quarterly and/ or as and when required	Sector manager VIC manager NEMA MGLSD District Local Government	10,000																																		
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2.	Ambient air quality monitoring		Employees Tourists Flora and fauna on site Community members	Main building Garden Parking lot Green belt	<p>East African standards on air quality specifications (EAS751:2010) as highlighted in the table below.</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parameters</th> <th>Acceptable limits</th> </tr> </thead> <tbody> <tr> <td colspan="3">Emissions</td> </tr> <tr> <td>1.</td> <td>Particulate matter (PM_{2.5})</td> <td>60 µg/cm³</td> </tr> <tr> <td>2.</td> <td>Noxious gases</td> <td></td> </tr> <tr> <td></td> <td>NO_x</td> <td> <table border="1"> <thead> <tr> <th>Time-weighted Av</th> <th>Acceptable Limit</th> </tr> </thead> <tbody> <tr> <td>One hour</td> <td>0.8 ppm</td> </tr> <tr> <td>Instant Peak</td> <td>1.4ppm</td> </tr> </tbody> </table> </td> </tr> <tr> <td></td> <td>SO_x</td> <td> <table border="1"> <thead> <tr> <th>One hour</th> <th>500g/m³</th> </tr> </thead> <tbody> <tr> <td>Instant Peak (10 minutes)</td> <td>0.191 ppm</td> </tr> </tbody> </table> </td> </tr> <tr> <td></td> <td>CO_x</td> <td>0</td> </tr> <tr> <td colspan="3">Air quality</td> </tr> <tr> <td>3</td> <td>Vibration at 10 - 50Hz frequency</td> <td>12.5mm/s</td> </tr> <tr> <td>4</td> <td>Ozone-depleting substance</td> <td></td> </tr> <tr> <td></td> <td>CFCs</td> <td>Zero (banned)</td> </tr> <tr> <td></td> <td>HCFC and HFCs</td> <td>Regulated</td> </tr> </tbody> </table> <p>Draft National Air Quality Standards, 2006</p> <p>Uganda's regulatory air quality standards for selected pollutants</p> <table border="1"> <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> </tbody> </table>	No.	Parameters	Acceptable limits	Emissions			1.	Particulate matter (PM _{2.5})	60 µg/cm ³	2.	Noxious gases			NO _x	<table border="1"> <thead> <tr> <th>Time-weighted Av</th> <th>Acceptable Limit</th> </tr> </thead> <tbody> <tr> <td>One hour</td> <td>0.8 ppm</td> </tr> <tr> <td>Instant Peak</td> <td>1.4ppm</td> </tr> </tbody> </table>	Time-weighted Av	Acceptable Limit	One hour	0.8 ppm	Instant Peak	1.4ppm		SO _x	<table border="1"> <thead> <tr> <th>One hour</th> <th>500g/m³</th> </tr> </thead> <tbody> <tr> <td>Instant Peak (10 minutes)</td> <td>0.191 ppm</td> </tr> </tbody> </table>	One hour	500g/m ³	Instant Peak (10 minutes)	0.191 ppm		CO _x	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 (CO ₂)	8 hr	9.0 ppm	<p>Particulate matter</p> <p><i>Methodology:</i> 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 (SO₂, NO, NO₂, CO₂, NH₂, H₂S, VOCs, CO, CLO₂, O₂, 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 VIC manager NEMA District Local Government	
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3.	Oil spills	Parking lot Kitchen	Hydrosphere Flora and Fauna on site Soil	Parking lot Kitchen Drainage discharge points	National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.	<ul style="list-style-type: none"> - Sulphur - Aromatic compounds - Hydro Carbons - Paraffins 	Quarterly	Sector manager VIC manager NEMA District Local Government	4,000																					
4.	Energy efficiency	Main VIC building	Local communities	Main VIC building	N/A	<ul style="list-style-type: none"> - Lighting Power Density - Window-to-Wall Ratio - Openable Window/Façade Ratio - Design Thermal Performance Improvements - Equipment Efficiency Improvements - HVAC System Energy Saving - Lighting Control - Renewable Energy use 	Annually	Sector manager VIC manager MEMD NEMA	Part of operational costs																					
5.	Water usage	VIC and its environs	Hydrosphere Local community	Surface water bodies	N/A	<ul style="list-style-type: none"> - Water Fixtures - Non-Traditional Water Utilization (Landscaping and Lavatory) 	Annually	Sector manager VIC manager MWE																						
6.	Solid waste management - Domestic - Hazardous	VIC and its environs	Employees Flora and fauna species on site Hydrosphere	Operational facility sections	National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.	<p>Non-Hazardous; Biodegradable – food waste Paper waste, etc.</p> <p>Hazardous waste</p> <p><u>Methodology</u>; Review waste records</p>	Daily	Sector manager VIC manager NEMA	15,000																					

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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 Walk through occupational hygiene surveys Periodic medical examinations	Quarterly	Sector manager VIC manager MGLSD District Local Government	15,000																																																															
9.	Quality	VIC	Tourists Local community	Feedback from the relevant stakeholders	US ARS/AES 04:2014, Tourism — Sustainability and eco-labelling — Requirements US 2565/ISO/PAS 5643:2021, Tourism and related services — Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry US ISO 14785:2014 Tourist information offices — Tourist information and reception services — Requirements US ISO 18065:2015, Tourism and related services — Tourist services for public use provided by Natural Protected Areas Authorities — Requirements	Accuracy and validity of the information disseminated at the VIC Customer satisfaction	Annually	Sector manager VIC manager NFA 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)
					US ISO 23405:2022, Tourism and related services — Sustainable tourism — Principles, vocabulary and model				
10.	Biodiversity	VIC and its environs	Fauna and flora	VIC operational areas	National Forestry and Tree Planting Regulations, 2016 National Forestry and Tree Planting Act, 2003 Uganda Wildlife Act, 2019 Convention on the Protection of the World Cultural and Natural Heritage Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) (CITES) Convention on Biological Diversity, 1992 Bonn Convention, 1979 World Bank Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Presence of invasive species Species richness	Quarterly	Sector manager VIC manager NFA UWA 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 Community Decommissioning workers	Project site	<p>East African standards on air quality specifications (EAS751:2010) as highlighted in the table below. (Decommissioning phase).</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parameters</th> <th>Acceptable limits</th> </tr> </thead> <tbody> <tr> <td colspan="3">Emissions</td> </tr> <tr> <td>1.</td> <td>Particulate matter (PM_{2.5})</td> <td>60 µg/cm³</td> </tr> <tr> <td rowspan="3">2.</td> <td rowspan="3">Noxious gases</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 rowspan="2">SO_x</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>CO_x</td> <td>0</td> <td></td> </tr> <tr> <td colspan="3">Air quality</td> </tr> <tr> <td>3</td> <td>Vibration at 10 - 50Hz frequency</td> <td>12.5mm/s</td> </tr> <tr> <td rowspan="3">4</td> <td colspan="2">Ozone-depleting substance</td> </tr> <tr> <td>CFCs</td> <td>Zero (banned)</td> </tr> <tr> <td>HCFC and HFCs</td> <td>Regulated</td> </tr> </tbody> </table> <p>Draft National Air Quality Standards, 2006</p> <p>Uganda's regulatory air quality standards for selected pollutants</p> <table border="1"> <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> </tbody> </table>	No.	Parameters	Acceptable limits	Emissions			1.	Particulate matter (PM _{2.5})	60 µg/cm ³	2.	Noxious gases	Time-weighted Av	Acceptable Limit	One hour	0.8 ppm	Instant Peak	1.4ppm	SO _x	One hour	500g/m ³	Instant Peak (10 minutes)	0.191 ppm	CO _x	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 (CO ₂)	8 hr	9.0 ppm	<p>Particulate matter (PM₂₅ (µg/m³)),</p> <p><i>Methodology:</i> Use of an active sampling method to monitor short-term concentrations of particulates, Casella Micro dust Pro™ digital aerosol monitor.</p> <p>Cases of Toxic and explosive gases (SO₂, NO, NO₂, CO₂, NH₂, H₂S, VOCs, CO, CLO₂, O₂, and Methane) may be monitored using a set of three MX6 iBrid™ portable gas monitors.</p>	Quarterly and/ or as and when required	EHSO - Contractors	4,000
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2.	Noise and vibration monitoring	Active decommissioning site	Fauna and flora species on site Community Decommissioning workers	Project site	<p>National Environment (Noise Standards and Control) Regulations, 2003</p> <table border="1"> <thead> <tr> <th></th> <th>Day</th> <th>Night</th> </tr> </thead> <tbody> <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> </tbody> </table> <p><i>Time frame:</i> Day 6.00 a.m. -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.</p> <table border="1"> <thead> <tr> <th colspan="2">Vibration</th> </tr> </thead> <tbody> <tr> <td>Vibration at 10 - 50Hz frequency</td> <td>12.5mm/s</td> </tr> </tbody> </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	Decibels Noise limits dB (A) (Leq) <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.	Monthly and/or as and when required	- EHSO - Contractors	4,000		
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3.	Oil spills;	- Fuel storage area - Mechanical equipment slabs. - Site workshops	Hydrosphere Fauna and flora	- Groundwater - Soil - Drainage systems	National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.	- Sulphur - Aromatic compounds - Hydro Carbons - Paraffin	Quarterly	- EHSO - Contractors	2,000																					
4.	Solid Waste Management - Non-hazardous - Hazardous	- Accommodation units at the campsite - Project site - Facility cafeteria	Decommissioning workers Community	Waste collection areas.	National Environment (Waste Management) Regulations S.I. No. 49 of 2020, 153-2 3835.	Non-Hazardous; Biodegradable – food waste Paper waste, etc. <i>Methodology:</i> Well labelled Waste collection bins Hazardous; fuel and coolant	Daily	- EHSO - Contractors	Part of contractual fees																					

S/No.	Aspect	Site	Receptor	Sampling location	Limits/ standards	Parameters of interest and Methodology/ Tool	Frequency	Responsible personnel	Cost (USD)
		<ul style="list-style-type: none"> - Equipment storage unit - Light and heavy oil jerry cans - Waste collection point 				<i>Methodology:</i> Waste collection logs and transportation and disposal contracts and notices			
5.	Occupational Health and Safety	Active decommissioning site	Decommissioning workers Community	Decommissioning site	The Occupational Safety and Health Act, 2006	Number of incidents (accidents and near misses) Results from quality tests of PPE The functionality of OHS safeguards such as alarms, fire detectors etc.	Quarterly	<ul style="list-style-type: none"> - EHSO - Company Nurse - 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 Echuya 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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Appendices
Appendix A: Approved Terms of Reference



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

NEMA House
Plot 17,19 & 21, Jinja Road,
P.O.Box 22355, Kampala, UGANDA.
Tel: 256-414- 251064, 251065, 251068
342758,342759, 342717
Fax: 256-414-257521 / 232690
E-mail: info@nemaug.org
Website: www.nemaug.org

NEMA/4.5

24th 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

1

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)

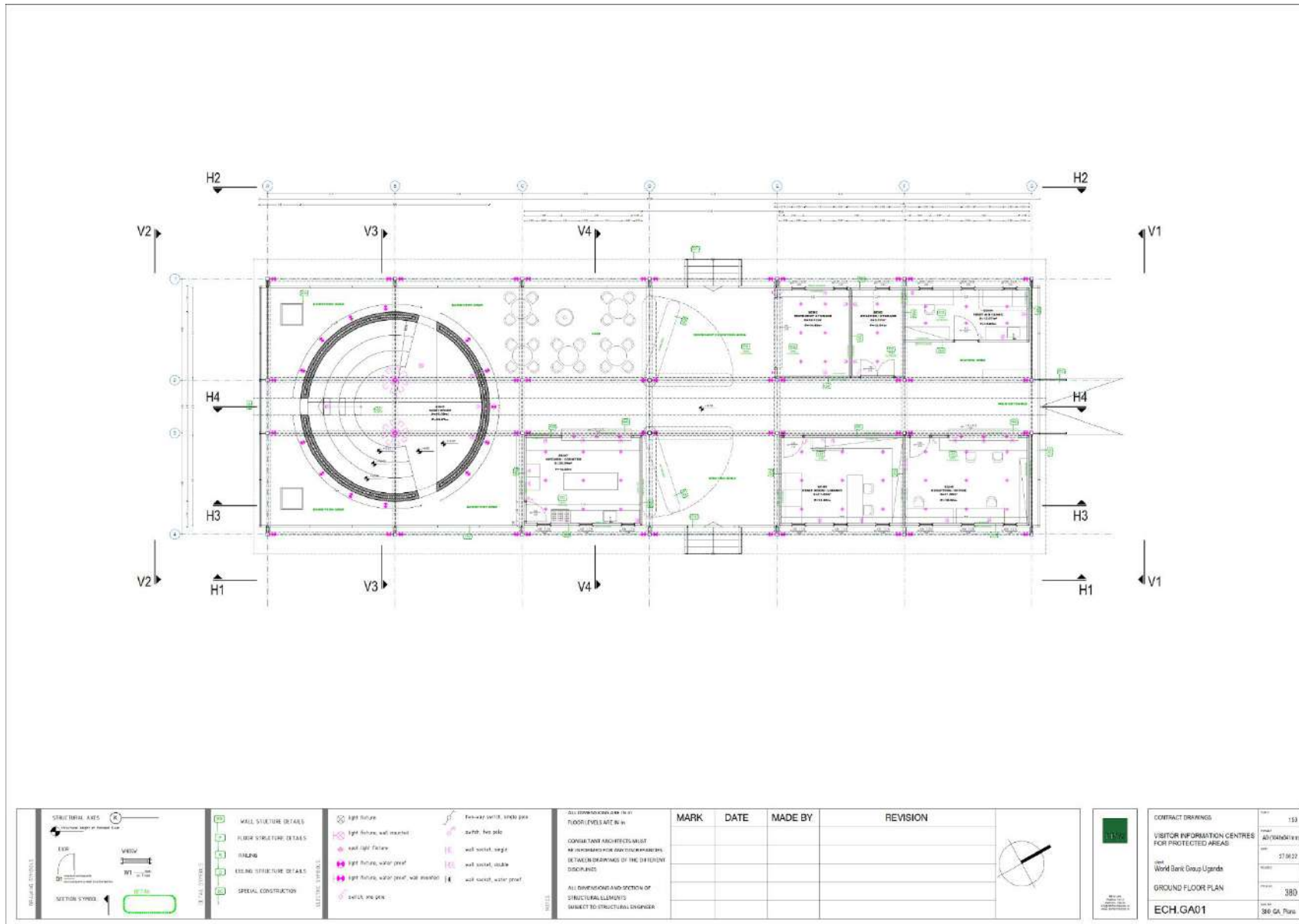
IN EXERCISE of the powers conferred on the Minister responsible for water, lands and the environment by sections 4 and 5 of the Forests Act this Order is made this 2 nd day of September, 1998	Cap. 246
1. This Order may be cited as the Forest Reserves (Declaration) Order, 1998	Citation
2. (1) The areas of land specified in the First Schedule to this Order are declared to be central forest reserves (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 (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. (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

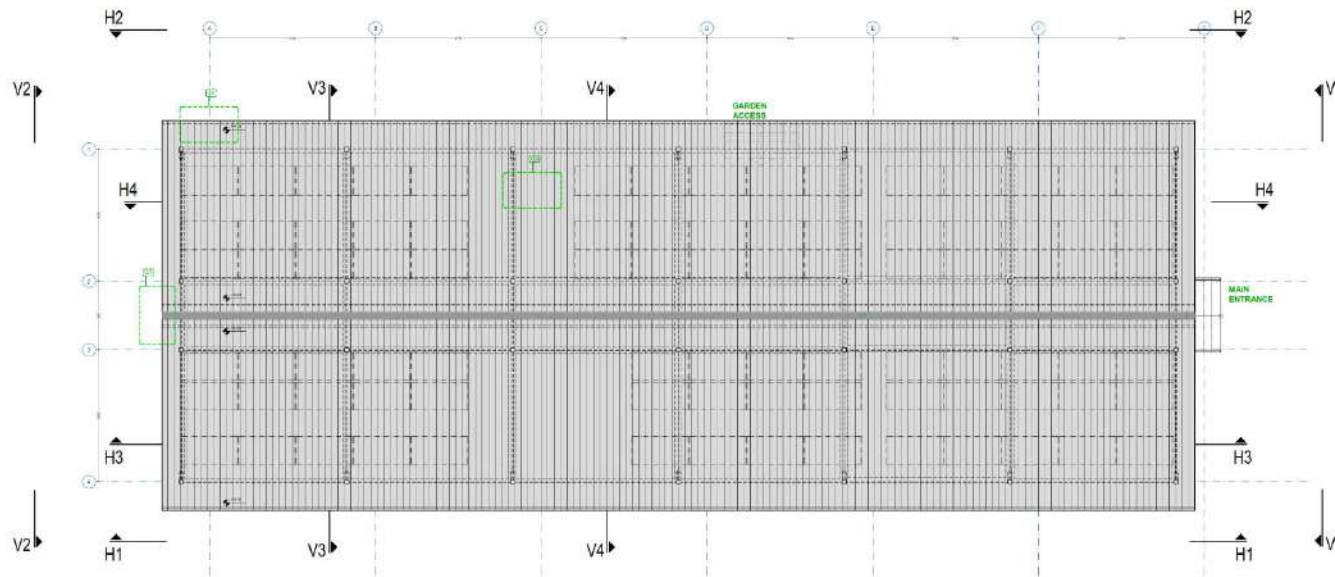
FIRST SCHEDULE, Part I (Central Forest Reserves)

Social Number	Name of Forest	County	Map Sheet Reference	Boundary Plan No. or Land Registration No.	Approximate area (hectares)
1.	APAC DISTRICT	Series Y 732 D.O.S. SHEET			
AP/2	Aboke	Oyam	32/1	BP 1329	13
AP/3	Acet	Oyam	32/1	BP 1352	256
AP/5	Aduku (North)	Kwania	41/1	BP 1285	13
AP/6	Aduku (South)	Kwania	41/1	BP 1278	16
AP/8	Alito	Kole	32/2	BP 1342	16
AP/9	Aloro	Oyam	32/1	BP 1143	262
AP/11	Aminakulu	Kwania	41/2	BP 1303	264
AP/12	Aminkee	Maruzi	32/3	BP 1252	256
AP/13	Aminteg	Maruzi	41/1	BP 1255	220
AP/14	Aneneng	Oyam	31/2	BP 1265	264
AP/16	Apac	Maruzi	41/1	BP 1322	5
AP/17	Apworocero	Oyam	31/4	BP 1360	246
AP/18	Arweny	Kwania	41/13	BP 1348	324
AP/21	Ayer (1959 eucalyptus)	Kole	32/1	BP 1269	3
AP/22	Ayer (Bala Road)	Kole	32/1	BP 1280	8
AP/23	Ayer (Lira Road)	Kole	32/1	BP 1269	10
AP/24	Bala (North)	Kole	33/3	BP 1415	8
AP/25	Bala (South)	Kole	32/3	BP 1368	10
AP/27	Gung-Gung	Oyam	31/2	BP 1225	303
AP/28	Gweri	Kwania	32/3	BP 1304	155
AP/30	Ilera	Kole	32/2	BP 1354	158
AP/31	Kulo-Obia	Maruzi	32/3	BP 1306	210
AP/32	Lela-Obok	Oyam	32/1	BP 1352	215
AP/33	Maruzi	Maruzi	40/2,4	BP 1562	6,118
AP/36	Obel	Oyam	32/1	BP 1357	145
AP/37	Ojwiting	Oyam, Omoro	23/4	BP 1383	260
AP/38	Opit (part)	Oyam	22/4, 23/3	BP 1064	1,593
				TOTAL AREA	11,360
2.	ARUA DISTRICT	Series Y 732. D.O.S. SHEET			
AR/1	Ajupane	Vurra	19/2	BP 1319	472
AR/2	Arua	Ayivu	11/4	BP 1071	236
AR/3	Ave	Vurra	19/2	BP 1313	777
AR/4	Barituku	Terego	12/3	BP 1394	155
AR/5	Enjeva	Vurra	19/2	BP 1309	738
AR/6	Enyau	Terego, Maracha	11/4	BP 1384	401
AR/10	Iyi	Vurra, Madi-Okollo	19/2,4	BP 1295	2,437
AR/11	Kadre	Maracha Koboko	11/4, 12/1	BP 1287	785
AR/12	Kafu	Vurra	19/2,4	BP 1314	2,600
AR/14	Kulua	Aringa, Terego	12/1	BP 1315	614
AR/16	Laura	Vurra Madi-Okollo	19/2, 20/1,3	BP 1299	2,764
AR/17	Liru	Koboko	12/1	BP 1288	497
AR/18	Lodonga	Aringa	12/1	BP 1325	106
AR/20	Lokiragodo	Ayivu	11/4	BP 1321	117
AR/22	Luku	Vurra Madi-Okollo	20/1	BP 1311	4,043
AR/26	Mt. Kei	Koboko, Aringa	4/1,2,3,4	BP 1131, 12,34	40,689
AR/29	Okavu-Reru	Vurra	19/4	BP 1602	420
AR/31	Otrevu	Terego	12/3	BP 1297	549
AR/35	Ozubu	Koboko	11/2,12/1	BP 1318	681
AR/36	Suru	Madi-Okollo	12/3	BP 1286	368
AR/38	Wati	Terego, Maracha	12/3	BP 1394	764
				TOTAL AREA	59,741
3.	BUNDIBUGYO DISTRICT	Series Y 732.D.O.S. SHEET			
BN/1	Bundikeki	Bwamba	56/1,3	BP 1098, 1105	396
BN/2	Kabango-Muntandi	Bwamba	56/1	BP 1105	361

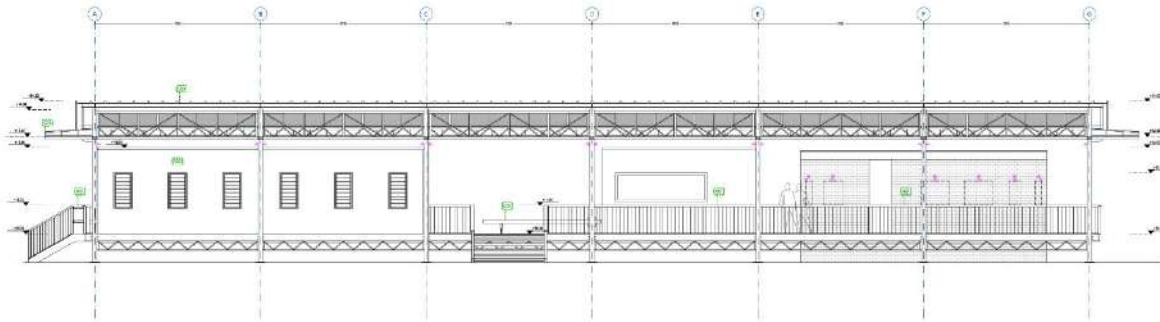
Serial Number	Name of Forest	County	Map Sheet Reference	Boundary Plan No. or Land Registration No.	Approximate area (hectares)
BN/3	Mataa	Bwamba	56/3	BP 1098	109
BN/4	North Rwenzori (part)	Bwamba	56/1	BP 1555	900
BN/5	Nyaburongo	Bwamba	56/3	BP 1098	174
BN/7	Semuliki	Bwamba	56/1	BP 1036	21,827
				TOTAL AREA	23,767
4.	BUSHENYI DISTRICT	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, Mitooma	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
5.	GULU DISTRICT	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	Amoka	Achwa	22/2	BP 1106	1,101
GU/5	Bobu	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	Gwengaliya	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
6.	HOIMA DISTRICT	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	Mpanga	Buhaguzi	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
7.	IGANGA DISTRICT	Series Y 732, D.O.S. SHEET			
IG/1	Budanda	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

Serial Number	Name of Forest	County	Map Sheet Reference	Boundary Plan No. or Land Registration No.	Approximate area (hectares)
IG/7	Busembatya	Bugweri	63/1	BP 1177	16
IG/9	Buyenvu	Busiki	63/1	BP 1263	622
IG/10	Igwe	Bukoli	63/4, 73/2	BP 1645	1,090
IG/11	Irimbi	Bukoli	73/2	BP 1018	294
IG/12	Iziru (part)	Luruka	62/4	BP 1010, 1011	304
IG/13	Kyabona	Bukoli	73/4	BP 1172	124
IG/14	Luvunya	Bukoli	73/2	BP 1159	844
IG/18	South Busoga	Bunya	72/2,4, 73/1,3	BP 1117	16,382
IG/20	Walugogo	Kigulu	62/4	BP 1493	34
IG/21	Walulumbu	Bunya	73/2	BP 1620	119
				TOTAL AREA	29,735
8	JINJA DISTRICT	Series y 732 D.O.S. SHEET			
JJ/3	Botamira	Butembe	62/3,4	BP 1046	1,257
JJ/4	Iziru (part)	Butembe	62/4	BP 1010, 1011	312
JJ/5	Kagoma	Butembe	62/3	BP 1025	277
JJ/7	Kimaka	Butembe	72/1	BP 1126	47
JJ/8	Lubani	Butembe	62/3	BP 1156	453
JJ/10	Mutai	Butembe	62/3	BP 1034	287
JJ/11	Mwiri	Butembe	72/1	BP 1050	142
JJ/12	Namafuma	Butembe	62/4	BP 1595	108
JJ/13	Namasiga-Kidimbuli	Butembe	62/4	BP 1173	484
JJ/14	Namavundu	Butembe	62/3	BP 1157	704
JJ/15	Namazingiri	Butembe	62/4	BP 1410	215
JJ/16	Ngeroka (part)	Butembe	62/3	BP 1642	431
JJ/17	Nile Bank	Butembe	62/3	BP 1155	606
JJ/18	Nsube	Butembe	62/3	BP 1525	878
				TOTAL AREA	6,201
9	KABALE DISTRICT	Series Y 732.D.O.S. SHEET			
KB/1	Echuya (part)	Rubanda	93/2	BP 1016, 1510	2,701
KB/2	Kabale	Ndorwa	93/2, 4, 94/3	BP 1254, 1557	129
KB/3	Mafuga (part)	Rubanda	93/2	BP 1510	1,893
KB/4	Muko	Rubanda	93/2	BP 1061	168
				TOTAL AREA	4,891
10	KABAROLE	Series & 732. D.O.S. SHEET			
KA/1	Buhungiro	Kyaka	67/2	BP 1345	1,020
KA/4	Fort Portal	Burahya	56/4	BP 1585	65
KA/5	Ibambaro	Mwenge, Kyaka	57/4	BP 1449	3,724
KA/6	Iwara	Mwenge, Burahya	56/2, 57/3	BP 1041	8,638
KA/7	Kagorra	Mwenge	57/1	BP 1615	4,314
KA/9	Kakasi	Kitagwenda	76/2	BP 1516	800
KA/11	Kibale*	Bunyangabu, Burahya, Kibale, Mwenge	56/4, 66/4, 67/1	BP 1089, 1639	55,843
KA/12	Kibego	Mwenge	57/1	BP 1176	1,269
KA/13	Kikumiro	Mwenge	57/3	BP 1627	730
KA/14	Kisangi (part)	Bunyangabu	66/2	BP 1552	1,288
KA/15	Kitechura	Mwenge	57/2, 4	BP 1236	5,317
KA/16	Kyehara	Mwenge	57/3	BP 1589	482
KA/17	Matiri	Mwenge	57/4	BP 1449	5,431
KA/19	Muhangi	Mwenge	57/1	BP 1009	2,044
KA/20	Nkera	Mwenge	57/3	BP 1413	790
KA/21	North Rwenzori (part)	Burahya	56/1	BP 1555	2,765
KA/25	Oruha	Mwenge	56/4, 57/3	BP 1502	347

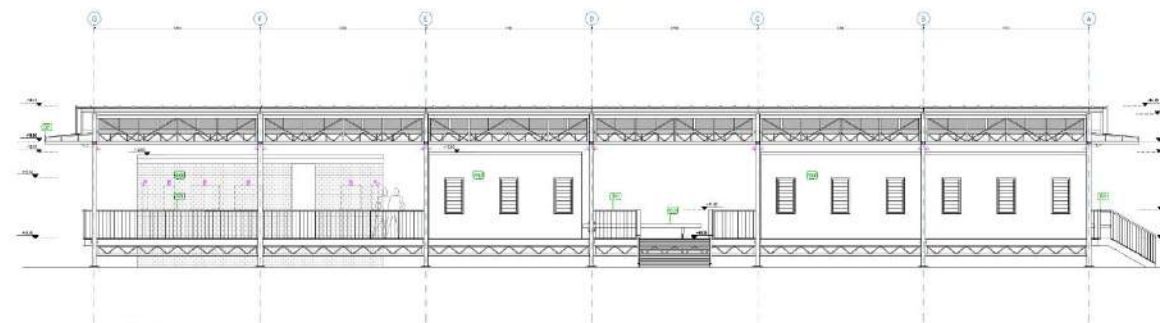




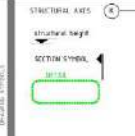




<p>STRUCTURAL AXES</p> <p>GRID SYMBOLS</p>	<p>WALL STRUCTURE DETAILS</p> <p>FLOOR STRUCTURE DETAILS</p> <p>CEILING STRUCTURE DETAILS</p> <p>SPECIAL CONSTRUCTOR</p>	<p>ELECTRIC SYMBOLS</p>	<p>NOTES:</p> <p>ALL DIMENSIONS ARE IN M FLOOR LEVELS ARE IN m</p> <p>CONSULTING ARCHITECTS MUST BE INFORMED FOR ANY DISCREPANCIES BETWEEN DRAWINGS OF THE DIFFERENT DISCIPLINES</p> <p>ALL DIMENSIONS AND SECTION OR STRUCTURAL ELEMENTS SUBJECT TO STRUCTURAL ENGINEER</p>	MARK	DATE	MADE BY	REVISION		<p>CONTRACT DRAWINGS</p> <p>VISITOR INFORMATION CENTRES FOR PROTECTED AREAS</p> <p>Client: World Bank Group Uganda</p> <p>PROJECT: ROOF PLAN</p> <p>DRAWING: ECH.GA03</p>	<p>133</p> <p>AD/04/04/1993</p> <p>27.06.22</p> <p>380</p> <p>380_GA_Plane</p>

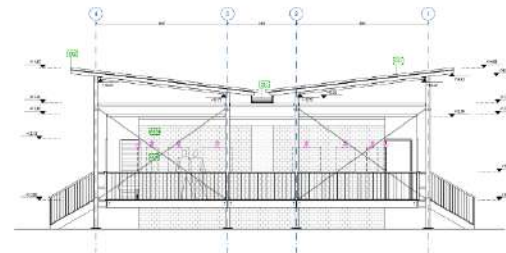


ELEVATION H2

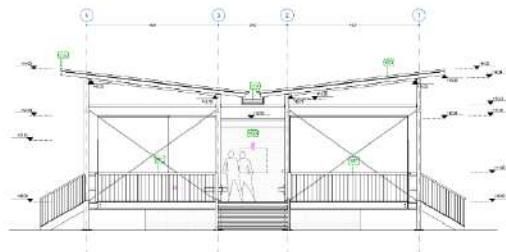


ELEVATION H1




<p>STRUCTURAL AXES</p> 	<p>DETAIL SYMBOLS</p> 	<p>ELECTRIC SYMBOLS</p> 	<p>NOTES</p> <p>ALL DIMENSIONS ARE IN M FLOOR FINISHES ARE 2000</p> <p>SMALLER DETAIL ARCHITECTURE MUST BE INFORMED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS OF THE DIFFERENT DISCIPLINES</p> <p>ALL DIMENSIONS AND SECTION OF STRUCTURAL MEMBERS IS SUBJECT TO STRUCTURAL ENGINEER'S</p>	<p>MARK</p>	<p>DATE</p>	<p>MADE BY</p>	<p>REVISION</p>			<p>CONTRACT DRAWINGS</p>	<p>SPEC 153</p>
				<p>VISITOR INFORMATION CENTRES FOR PROTECTED AREAS</p>		<p>Client: AN/INTERVIEW</p>	<p>DATE: 27.05.22</p>			<p>Sheet: 380</p>	<p>Scale: 200, 300, 400, 500, 600</p>

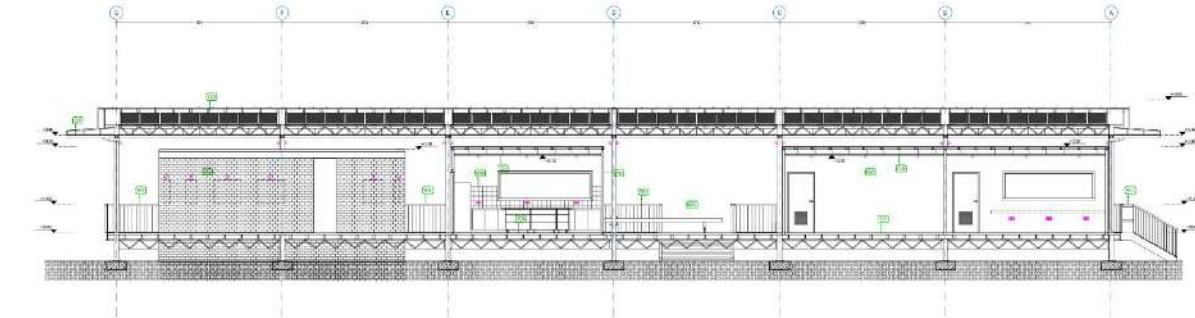


ELEVATION V2

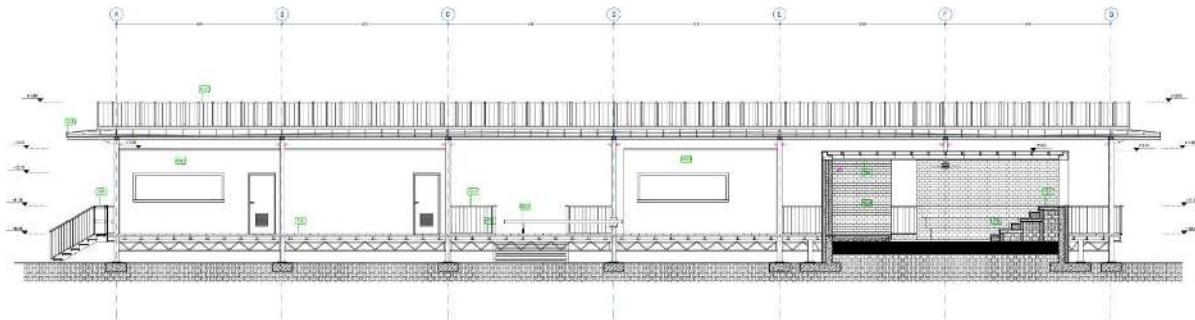


ELEVATION V1






<p>STRUCTURAL AXES</p> <p>Structural height</p> <p>SECTION SYMBOL</p> 	<p>DETAIL SYMBOLS</p> <p>1 WALL STRUCTURE DETAILS</p> <p>2 FLOOR STRUCTURE DETAILS</p> <p>3 FINISHING</p> <p>4 EXTERIOR STRUCTURE DETAILS</p> <p>5 SPECIAL CONSTRUCTION</p>	<p>ELECTRICAL SYMBOLS</p> <p>1.1 cast light fixture</p> <p>1.2 light fixture, vapor proof, cast insulate</p> <p>1.3 cast light fixture, water proof, wall mounted</p>	<p>NOTES</p> <p>ALL DIMENSIONS ARE IN M FLOOR FINISH 4.5m (15'0")</p> <p>CONSULTANT ARCHITECTURE MUST BE INFORMED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS OF THE DRAWING AND DIMENSIONS</p> <p>ALL DIMENSIONS AND SECTION OF STRUCTURAL MEMBERS IS SUBJECT TO STRUCTURAL ENGINEER'S</p>	<p>MARK</p>	<p>DATE</p>	<p>MADE BY</p>	<p>REVISION</p>			<p>CONTRACT DRAWINGS</p> <p>PROJECT: VISITOR INFORMATION CENTRES FOR PROTECTED AREAS</p> <p>CLIENT: World Bank Group Uganda</p> <p>DRAWING: ELEVATIONS V1,V2</p> <p>PROJECT CODE: ECH.GA05.1</p>	<p>SHEET: 153</p> <p>DATE: 21/08/22</p> <p>NO: 380</p> <p>SCALE: 380 (300, 300, 300, 300)</p>
				<p>ALL DIMENSIONS ARE IN M FLOOR FINISH 4.5m (15'0")</p>	<p>CONSULTANT ARCHITECTURE MUST BE INFORMED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS OF THE DRAWING AND DIMENSIONS</p>	<p>ALL DIMENSIONS AND SECTION OF STRUCTURAL MEMBERS IS SUBJECT TO STRUCTURAL ENGINEER'S</p>					

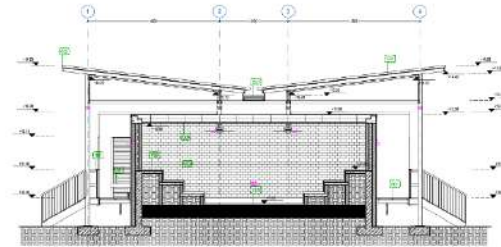


SECTION H3



SECTION H4




<p>STRUCTURAL AXES</p>  <p>Structural height</p> <p>SECTION SYMBOL</p> 	<p>DETAIL SYMBOLS</p> 	<p>MATERIALS</p> <p>101 cast iron balustrade</p> <p>102 light colour, vapor proof, wall mounted</p> <p>103 cast light fixtures, water proof, wall mounted</p>	<p>NOTES</p> <p>ALL DIMENSIONS ARE IN M FLOOR FINISH ARE 200</p> <p>CONTRACTOR TO VERIFY BE INFORMED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS OF THE DRAWINGS AND FINISHES</p> <p>ALL DIMENSIONS AND SECTION OF STRUCTURAL MEMBERS TO SUBJECT TO STRUCTURAL ENGINEER</p>	MARK	DATE	MADE BY	REVISION			<p>CONTRACT DRAWINGS</p> <p>PROJECT: VISITOR INFORMATION CENTRES FOR PROTECTED AREAS</p> <p>CLIENT: World Bank Group Uganda</p> <p>SECTION: SECTIONS H3, H4</p> <p>DRAWING: ECH.GA04.2</p>	<p>SPEC: 153</p> <p>DATE: 21/08/2024</p> <p>SCALE: 380</p> <p>DATE: 20/08/2024</p>

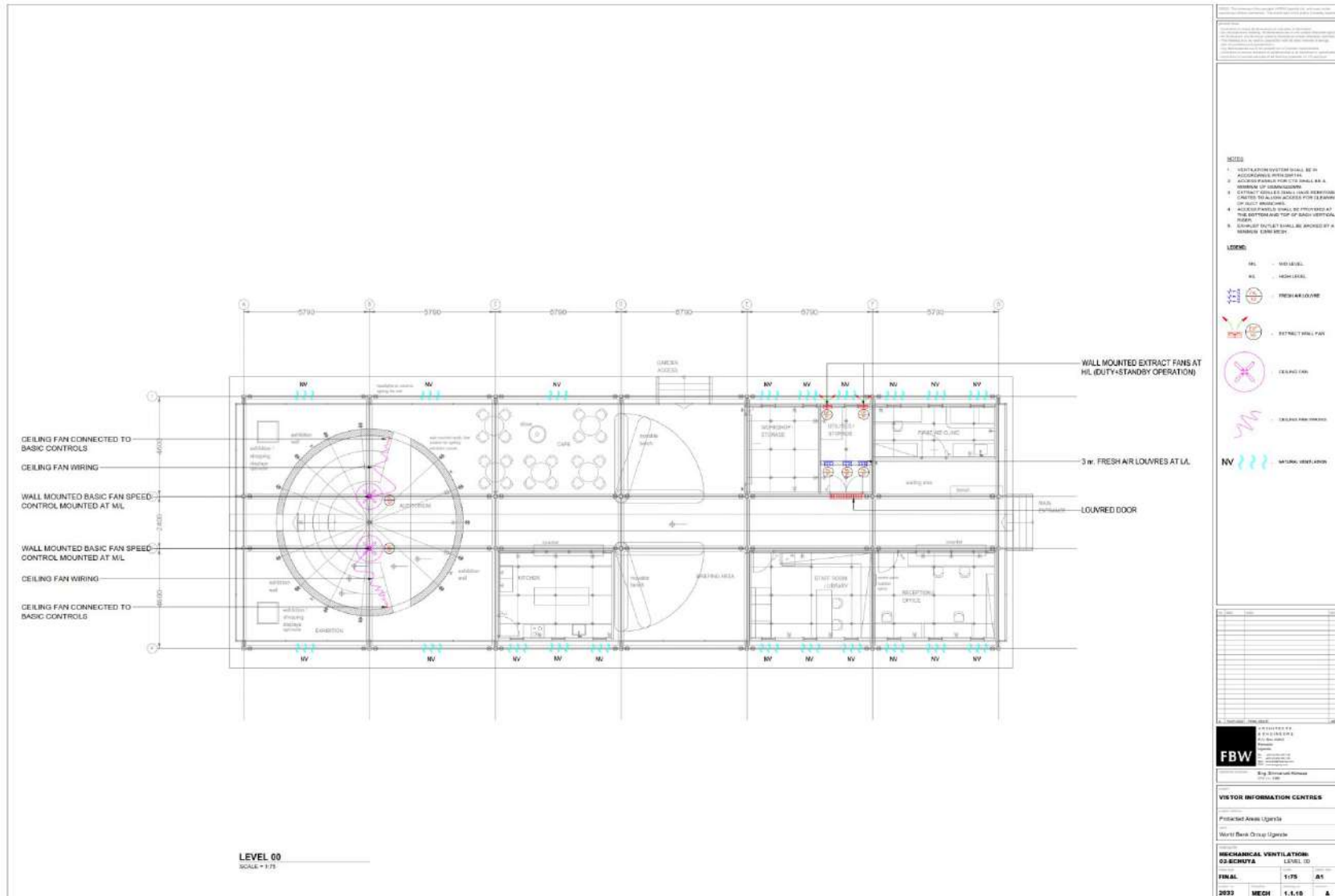


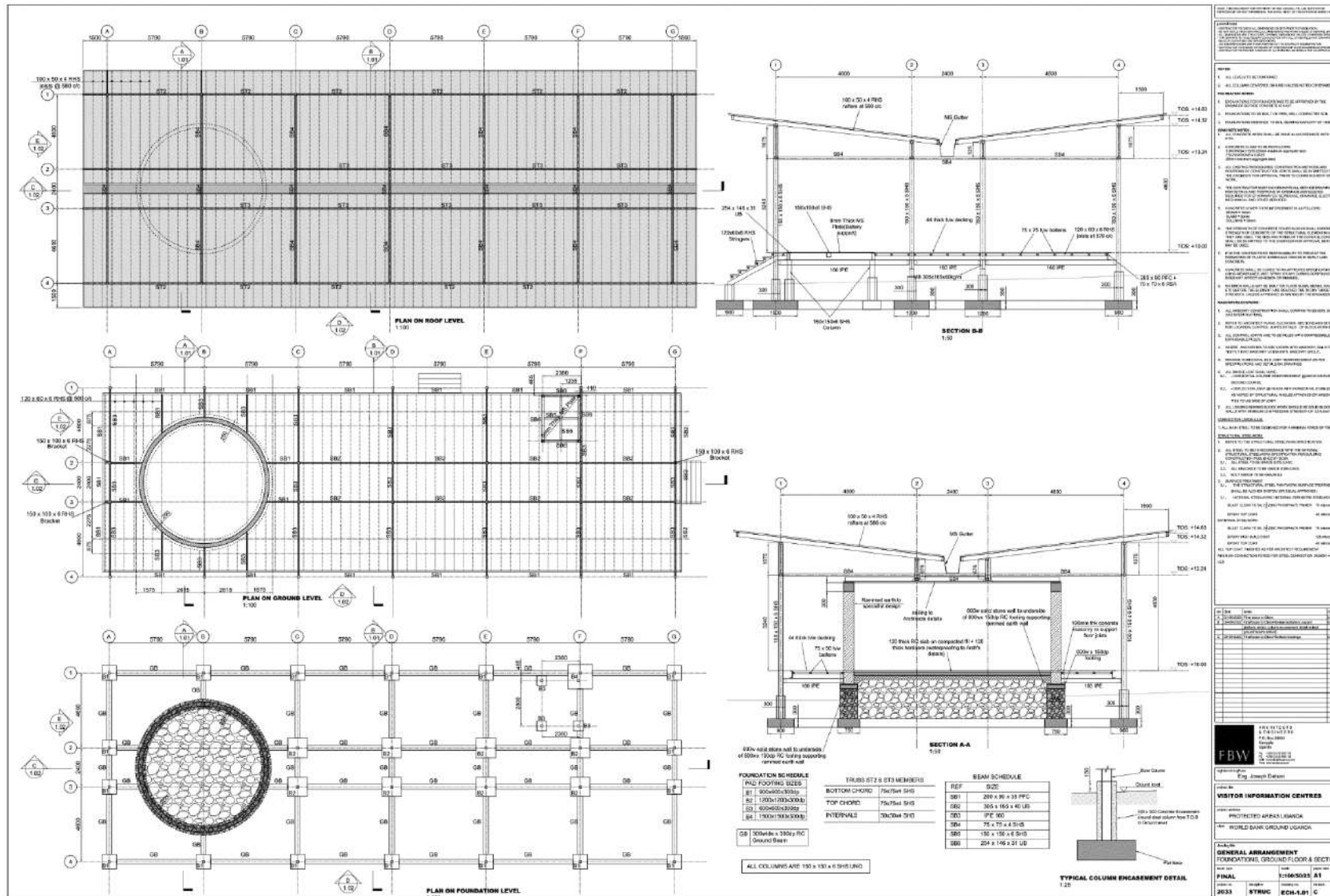
SECTION V3

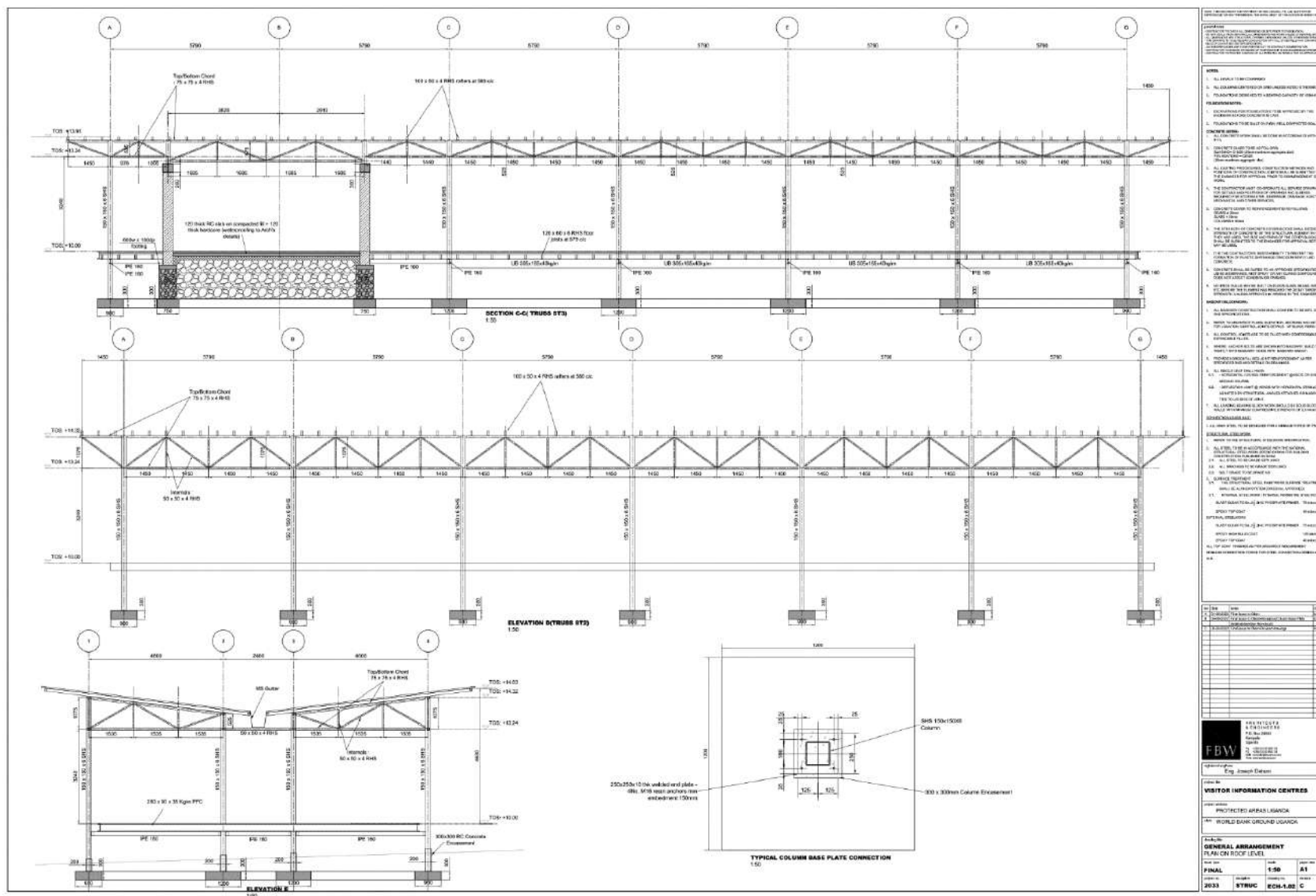


SECTION V4

<p>STRUCTURAL AXES</p> <p>Structural height</p> <p>SECTION SYMBOL</p> 	<p>DETAIL SYMBOLS</p> <p>1 WALL STRUCTURE DETAILS</p> <p>2 FLOOR STRUCTURE DETAILS</p> <p>3 FINISHING</p> <p>4 EXTERIOR STRUCTURE DETAILS</p> <p>5 SPECIAL CONSTRUCTION</p>	<p>ELECTRICAL SYMBOLS</p> <p>1 x and light fixture</p> <p>2 light fixture, vapor proof, wall mounted</p> <p>3 x and light fixture, water proof, wall mounted</p>	<p>NOTES</p> <p>ALL DIMENSIONS ARE IN m (FLOOR DRAINS 4.0m IN Ø)</p> <p>CONTRACTOR TO VERIFY AND BE INFORMED FOR ANY DISCREPANCIES BETWEEN DIMENSIONS OF THE DRAWING AND EXISTING</p> <p>ALL DIMENSIONS AND SECTION OF STRUCTURAL MEMBERS SUBJECT TO STRUCTURAL ENGINEER</p>	MARK	DATE	MADE BY	REVISION			<p>CONTRACT DRAWINGS</p> <p>VISITOR INFORMATION CENTRES FOR PROTECTED AREAS</p> <p>World Bank Group Uganda</p> <p>SECTIONS V3, V4</p> <p>ECH.GA04.1</p>	<p>SPEC 153</p> <p>DATE: 14/08/2019</p> <p>REV: 31.08.22</p> <p>NO: 380</p> <p>DATE: 08/08/2019</p>







Appendix D: Records of stakeholder engagement Consultation with the Local community, CFMs and NFA staff

Table C.1: Summary of issues in meeting with CFM groups and the local community

Agency: Collaborative Forest Management Groups, Local Leaders, Community members, NFA Echuya team	
Date & place:	23 rd June 2022 at Echuya Eco-tourism camp site
Meeting attended by:	NFA Echuya CFR team, Greencare Innovations Limited, MECDA CFM, MEFCAPA CFM, KADECA CFM, Local leaders and community members from Kamugoyi Village, Muhindura and Kanaba Trading Center
Issues:	The aspects discussed are presented below:
<i>Echuya highlights</i>	<ul style="list-style-type: none"> • Echuya is a high-altitude swamp with unique flora and avian species that attract bird enthusiasts from all over the world. • Stingless bees and the honey they produce are also among the attractions in the Echuya forest
<i>Expected benefits</i>	<ul style="list-style-type: none"> • The VIC will boost tourism and enhance the visitor experience by disseminating well-curated information on the tourism products available within the Echuya Forest; the history and heritage of the local cultures; and the species richness within the forest. • The VIC will create a modern space for showcasing the biodiversity, unique volcanic geology of the forest and cultures of the local communities. • The boost in tourism as a result of the VIC will lead to the development of lodges and other services for the tourism sector • The VIC will create a market for the locally made crafts and artefacts; this will boost incomes and improve the livelihoods of the community members
<i>Recommendations</i>	<ul style="list-style-type: none"> • NFA should consider programs of training the locals in craft making, hospitality, and other tourism-related services; this may be done with the existing structures of the CFMs. This will improve the quality of the services and goods sold to tourists and enhance the benefits the communities will make from the boost in tourism
<i>Collaborative Forest Management groups and their role</i>	<p>NFA manages the Echuya Forest Reserve with community-led organizations called Collaborative Forest Management (CFM) groups. Currently, four CFM groups are operating in the Echuya CFR area, these include;</p> <ul style="list-style-type: none"> • KADECA – Kanaba Community Development and Echuya Forest Conservation Association • MEFCAPA – Murora Echuya Forest Conservation and Poverty Alleviation Association • MECDA – Muko Echuya forest Conservation and Development Association • BECLA – Bufundi Echuya forest Conservation and Livelihood Association
<i>Questions and answer session</i>	<p>Q: What will be the footprint of the proposed Visitor Information Centre, in acres? A: The proposed Visitor Information Centre will occupy approximately 0.12 acres (500m²)</p> <p>Q: What is the institutional implementation arrangement for the proposed VIC? A: The proposed VIC is being implemented as part of the project “Investing in Forests and Protected Areas” with support from the World Bank Group. The VIC in Echuya will be managed by the National Forestry Authority (NFA).</p>

	<p>Q: Is the proposed VIC in alignment with the project to develop Kisoro, Kabale and Rubanda? A: The objectives of the VIC are in alignment with the National Development Plan and the developmental goals of the Kisoro, Kabale and Rubanda Districts. The VIC will support other efforts by the central government and the subject district local governments in promoting eco-tourism in Echuya Forest.</p> <p>Q: Will site preparation and construction activities clear a significant number of trees? A: Considerations have been incorporated into the design of the VIC to minimize the impact of the built components on the forest. A minimal number of trees will be felled to create space for the establishment of the VIC. Additional measures will be adopted during site preparation and construction of the VIC to minimize disruptions to the ecological functions of the forest.</p> <p>Q: How will community members outside the CFM groups benefit from the proposed VIC? A: The anticipated boost in tourism as a result of the VIC will benefit all community members; directly for those engaged in the tourism and hospitality industry; indirectly for those who will benefit from the spill-over effect of economic development in the communities</p> <p>Q: How can NFA programs targeting CFMs involve vulnerable groups such as the Batwa? A: CFMs must consider reducing the membership fees or structuring the payment plans to allow the vulnerable groups to join CFMs and participate in eco-tourism and conservation of the Echuya forest</p> <p>Q: As part of the VIC project, will tourist accommodation be provided either at the proposed VIC or at the CFM-operated campsites? A: The scope of work does not include the construction of tourist accommodation facilities. The project will involve the establishment of a functional Visitor Information Centre to be an educational centre for the natural and the cultural values of the surrounding location while focusing on maintaining the natural feeling of the forest</p>
<i>Plates</i>	



Plate C.1: Consultative meeting with CFMs, local leaders and the community




Plate C.2: Consultative meeting with CFMs, local leaders and the community



Abakwetagisa/Abakolagana Obuhandike

Ibara lya porojekiti:	G.E.A 220109 Environment & Social Impact Assessment for the proposed visitor Information Centre in Echuya Forest Reserve.				
Ebiroyokwezi:	23-JUNE 2022.				
Mukama wa Porojekiti	NATIONAL FORESTRY AUTHORITY.				
Ekikyweka:	Ekyaro	Omuruka	Igomborora	Isaza	Disiturikiti
Kampuni	KAGANO	KARENGYERE	MUKO		RUBANDA

COMMUNITY MEMBERS -
Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali eno Porojekiti

Ibara	Omulingwo gwokutunga (Esimu)	Ebintu byamani ebikwatana hali eno porojekiti	Omukono/Ekinkumu
Dr. HALUNA MUTABAZI	V/Cham MECBA Muko 0772871155 0755871155		
Vastina Irasohu			V.I
MUHERWE ALLEU			ALLEU

Je:rence mutukwa			J. M
Irene Ami fondere			J. A.
Kuhondekereza	Ogwo akukwatibwaho	Ekiro ekikusemba	
Ebyokusindika obisibe hamu:			

Obuhandiki bukwozire :

Omukono:



Okukaguriza ne ebikulugamu kyali mubisindike hali: talk2gissat@mail.com

Abakwetagisa/Abakolagana Obuhandike

Ibara lya porojekiti:	GEA 220109 Environment & Social Impact assessment for the Proposed visitor Information Centre in Echuya Forest Reserve.				
Ebirobyokwezi:	23 JUNE 2022.				
Mukama wa Porojekiti	NATIONAL FORESTRY AUTHORITY.				
Ekikyweka:	Ekyaro	Omuruka	Igomborora	Isaza	Disitirikiti
Kampuni	KAGANO	KARENGYERE	MUKO		RUBANDA.

COMMUNITY MEMBERS.

Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti

Ibara	Omulingwo gwokutunga (Esimu)	Ebintu byamani ebikwatana hali eno porojekiti	Omukono/Ekinkumu
Rosemary Namubiru	0778374625 Kamugoyi village C/person women		
Ntashungu Sol	KADECA 0789750540		





Abakwetagisa/Abakolagana Obuhandike

Ibara lya porojekiti:	GEA 220109 Environment & social Impact Assessment for the Proposed visitor Information Centre in Echuya Forest Reserve.				
Ebiroyokwezi:	23-JUNE 2022				
Mukama wa Porojekiti	NATIONAL FORESTRY AUTHORITY				
Ekikyweka:	Ekyaro	Omuruka	Igomborora	Isaza	Disiturikiti
Kampuni	KAGANO	KARENTERE	MUKO		RUBANDA

COMMUNITY MEMBERS.

Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali eno porojekiti

Ibara	Omulingwo gwokutungwa (Esimu)	Ebintu byamani ebikwatana hali eno porojekiti	Omukono/Ekinkumu
MUKUNZIGI K	 0784704683 CFM		
AGABA GAD	0782617254 LCI S/C Kamugosi		Agabe
Nyiramba Pura LCI 077	0773199226 LCI S/C Kamugosi		NEU

MUGISHA FRED	C/Man Kamukap Trading Centre		Mugisha Fred
	0782722415		
Kuhondekereza	Ogwo akukwatibwaho	Ekiro ekikusemba	
Ebyokusindika obisibe hamu:			

Obuhandiki bukwozire :




Omukono:

Okukaguriza ne ebikulugamu kyali mubisindike hali: talk2gissat@mail.com

Abakwetagisa/Abakolagana Obuhandike

Ibara lya porojekiti:	GEA 220109. Environment & Social Impact Assessment for the Proposed visitor Information Centre in Echuyq Forest Reserve				
Ebiroyokwezi:	23-JUNE 2022.				
Mukama wa Porojekiti	NATIONAL FORESTRY AUTHORITY.				
Ekikyweka:	Ekyaro	Omuruka	Igomborora	Isaza	Disiturikiti
Kampuni	KAGANO	KARENGTERE	MUKO		RUBANDA.

Umugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali eno Porojekiti



Ibara	Omulingwo gwokutunga (Esimu)	Ebintu byamani ebikwatana hali eno porojekiti	Omukono/Ekinkumu
MUSANA DAVID	G. SEC KADECA 0773910532		
NSABA ENSTANI EHRUM	LC2 c/p LC2 MUKO KARENGTERE 0782470635		
Rubairi Yuma	KADECA 0771302834		

Abakwetagisa/Abakolagana Obuhandike

Ibara lya porojekiti:	GEA 220109 Environment & Social Impact assessment for the Proposed visitor information Centre in Echuya Forest Reserve.				
Ebirobyokwezi:	23-JUNE 2022.				
Mukama wa Porojekiti	NATIONAL FORESTRY AUTHORITY.				
Ekikyweka:	Ekyaro	Omuruka	Igomborora	Isaza	Disiturikiti
Kampuni	KAGANO	KARENGYERE	MUKO		RUBANDA.

COMMUNITY MEMBERS.

Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti


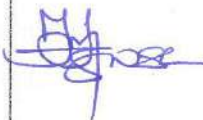

Ibara	Omulingwo gwokutungu (Esimu)	Ebintu byamani ebikwatana hali eno porojekiti	Omukono/Ekinkumu
MUNYAGABE FRANCIS	Person MECSA (CFM) Mullo - Rubanda 0770866041		
Hitimana JOHN	MUth: Kapa murora sub county - 0774472605		Hitimana J.
TUGABE ABEL	Kadeca cfm 0771846135.		

Abakwetagisa/Abakolagana Obuhandike

Ibara lya porojekiti:	GFA 020109 ESIA FOR THE PROPOSED VIC IN KUHUYA FOREST RESERVE				
Ebirobyokwezi:	23-JUNE-2022				
Mukama wa Porojekiti	NFA				
Ekikyweka:	Ekyaro	Omuruka	Igomborora	Isaza	Disiturikiti
Kampuni	KAGAMO	KAZENGERE	MUKO		RUBANDA

COMMUNITY MEMBERS.

Omugaso gwa abakwetagisa obuhandike: Ebyobuhangwa bilababitya hali Eno Porojekiti

Ibara	Omulingwo gwokutunga (Esimu)	Ebintu byamani ebikwatana hali eno porojekiti	Omukono/Ekinkumu
Turyahabwot Herbert	NFA Forest supervisor 0779987201		
MUGISHA HERBERT	GREEN CANE INDUSTRIES LTD (Community livelihoods) 0772484262		
AKEMBAABAZI ALEX	MECDA CFM SECRETARY 077020878		

Consultation with the Rubanda District Local Government

Table C.2: Summary of issues in meeting with Rubanda District local Government

Project: Environmental and Social Impact Assessment for the proposed development of Visitor Information Centres in selected Protected Areas	
GEA 220109	
Agency: Rubanda District local Government	
Purpose of meeting:	<ol style="list-style-type: none"> To raise issues of concern and suggestions to mitigate the impacts and enhance benefits To provide potential for specific concerns and issues relating to the project to be discussed and accounted for in design and assessment and ensure involvement of stakeholders in the process.
Date & place:	15 th November 2022, Consultations on Phone at 11:43Hrs
Meeting attended by:	<p>District representatives:</p> <ol style="list-style-type: none"> Mr. Teophil Sabiti – District Community Development Officer – +256-782-800-184 <p>Gissat consultant: Peacekinz K.Kweezi</p>
Issues:	Aspects discussed are presented below:
<i>Inventory of cultural / heritage sites within the district</i>	<p>There are a number of cultural/heritage sites including;</p> <ul style="list-style-type: none"> Bwindi Impenetrable National Park Nyamasizi Hot Springs Lake Bunyonyi Escarpments Conical Hills Caves
<i>Cultural sites in Kagano</i>	Echuya Central Forest Reserve
<i>Conservation strategies of cultural / heritage sites adopted by the district</i>	The DLG is currently developing a forest plan. There is also provision for the preservation and conservation of these sites due to the fact that some of them are located in Echuya Forest reserve and Bwindi Impenetrable National Park
<i>Key stakeholders in the district that are involved in implementing the conservation strategies</i>	<ul style="list-style-type: none"> The District Local Government (DLG) UWA NFA The Tourism Office Community-Based Services Department

	<ul style="list-style-type: none"> • Bwindi Mgahinga Conservation Trust • The local community
<i>Community involvement</i>	The management of these cultural sites is entirely community-based. The District Local Government tries to involve the community, especially the youth in the conservation of these sites through sensitization and training programmes
<i>District involvement in the support and promotion of the intangible cultural heritage</i>	The National Park and Central Forest Reserve are managed by the Uganda Wildlife Authority and National Forest Authority. The DLG is currently in the process of acquiring a land title for the Nyamasiizi Hot springs as well as implementing a project for the conservation of lake Bunyonyi which involves the construction of a green belt around the lake.
<i>Funding and challenges</i>	There is little to no funding from the district. With an annual budget of Uganda shillings one million only, there is little to no capacity building or training of the local community, especially the youth. These cultural and heritage sites are not considered to be important aspects by the district political leaders. Therefore, most government funds are injected into other capital projects such as schools and health centres.
<i>Staff training</i>	Staff training is carried out however, this is done at a very minimal level. This is attributed to the lack of funding from the DLG
<i>Cultural tourism safeguards</i>	The District is involved in safeguarding against the negative values that come along with tourism such as drug abuse, sexual exploitation and distortion of ethical values through the sensitization of the community. This is specifically done by the Community Based Services department and the tourism office.
<i>Monitoring and Evaluation</i>	Monitoring and evaluation are mainly done by Safe Help Africa, an organisation that is currently carrying out monitoring activities around lake Bunyonyi. Nature Uganda promotes the conservation of the Crested crane, as well as NFA and UWA that is responsible for the conservation of the gorillas.

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 th June, 2022 at NFA Headquarters - Bugolobi
Meeting attended by:	NFA representatives: <ol style="list-style-type: none"> 1. Stuart Maniraguha – Director Plantations 2. Tom Rukundo – Director Natural Forests 3. Sylvia Tumusiime – Eco-Tourism Officer 4. Rashid Sekiito – Landuse / GIS Specialist
Issues:	Aspects discussed are presented below:

Proposed VIC location options within Budongo Central Forest Reserve

- 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 Busingyiro. Target was to have the VIC near the canopy walk.
- Target was to have different activities within the various areas of the reserve e.g Canopy walks; VIC
- Proposed locations included: Busingyiro (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).
- 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.

Kaniyo Pabidi - advantages

- Existing infrastructure
- It is already known – visibility
- Location enroute to MFPA – famous for wild game and the falls – busy
- 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.

Amaply - disadvantages

- Site located off the access road;
- Site already under concession (licence) since 1960s to harvest Cinometra (Iron Wood) that expires in 2026 so this cannot be considered.

General disadvantages

- Host communities do not benefit from the forests.
- 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.

Busingyiro site:

- Advantages include centrality of location from all sides of the reserve;
- There are plans to construct the road to the area (WB funding).
- 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

	<p>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.</p> <ul style="list-style-type: none"> • 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. • 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. • The design team must follow land use planning guidelines when setting up the VIC (eco-tourism planning). • 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).
<p><i>Observations / comments / recommendations</i></p>	<ol style="list-style-type: none"> a) There is need for Tourism Management Plans to ensure collaboration and proper planning with all stakeholders. 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. c) In Echuya, CFM is proposed with Batwa tailored activities to support them given levels of marginalization. d) Illegal activities will stop once host communities are involved in forest conservation. e) NFA shares non-financial benefits from forests; these need to be quantified and given a financial value. 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. g) The benefits are from access to forest products (compartments) where communities can do their activities – these are discussed and put in the agreements. 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. i) Consider non-consumptive use of forests to improve its eco-system function; tourism does this very well. j) No licences are given for logging within the CFRs. k) Eco-tourism are promoted to boost tourism within the reserves. l) In comparison, host communities benefit from forests – they get firewood, medicinal plants, fruits, make crafts, etc 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. n) The VICs have to be incorporated into the annual management plans of NFA to ensure sustainability. o) VIC should be used to market the forest as a centre of all activities.

	<p>p) To boost eco-tourism, NFA suspended high impact activities e.g logging to increase conservation.</p> <p>q) Engage licenced investors to run the eco-lodges within the CFRs.</p> <p>r) NFA ensures that all licence conditions are followed for operations within the CFRs.</p> <p>s) There are 506 CFRs countrywide.</p>
<i>Management of VICs</i>	<ul style="list-style-type: none"> • 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. • 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. • NFA is proposing to increase tourism packages that promote successful conservation in PAs.

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)

Agency: Department of Museum and Monuments - Ministry of Tourism, Wildlife and Antiquities (MTWA)	
Date & place:	4 th November, 2022 at the Uganda National Museum, Kira Road
Meeting attended by:	<p>DMM representatives:</p> <ol style="list-style-type: none"> 1. Nyiracyiza Jackline Besigye – Ag. Commissioner 2. Nyiracyiza Jackline Besigye – Ag. Commissioner 3. Asiimwe Raymond – Senior Conservation Officer <p>Gissat consultant:</p> <p>Harriet Mujuni Hilda Namitala Anita Nabwami</p>
Issues:	Aspects discussed are presented below:
<i>Heritage Impact Assessments</i>	<ul style="list-style-type: none"> • 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. • 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. • 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

	<p>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.</p> <ul style="list-style-type: none"> • 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 must 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.
<p><i>Uganda National Cultural Heritage Database</i></p>	<ul style="list-style-type: none"> • 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. • 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. • Uganda has over 650 registered archaeological, Paleontological, historical and traditional sites but only 10 are gazzetted, 1 developed (Fort Partiko) and 1 under redevelopment (Kasubi Royal Tombs). The rest have deteriorated due to lack of conservation, preservation, interpretation and promotion. • There are over 736 cultural sites across all regions with 20 gazzetted 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.
<p><i>Policy and Legislative Framework</i></p>	<ul style="list-style-type: none"> • The Constitution of Uganda, 1995 • 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. • 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. <p><u>Policies</u></p> <ul style="list-style-type: none"> • 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)

	<p>Laws</p> <ul style="list-style-type: none"> • 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 (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; • The Employment Act (2006). <p>Uganda is also signatory to:</p> <ul style="list-style-type: none"> • The Convention on the Protection of the World Cultural and Natural Heritage (1972). • The Universal Declaration of Human Rights (1948) • The Convention on the Safeguarding of the Intangible Cultural Heritage (2003)
<p><i>Chance Finds</i></p>	<ul style="list-style-type: none"> • There is a given procedure followed under guidance from the Department of Museums and Monuments for handling chance finds. • 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. • 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. • Currently, DMM has developed 15 management plans out of the 650 sites in its database. • 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. • 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.
<p><i>Institutional Framework</i></p>	<p>Government MDAs</p>

- 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) (markets/creating awareness / advertise /money making / conservation / protection)
- The Uganda National Cultural Centre (UNCC)
- The National Library of Uganda (NLU)
- The National Planning Authority (NPA)

NGOs /CBOs


- Cross Cultural Foundation of Uganda

International Organizations

- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- Uganda National Commission for UNESCO (UNATCOM)

Districts

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>	<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>
<p><i>Recommendations</i></p>	<ul style="list-style-type: none"> • 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. • The ESIA should recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance. • For the construction phase, project development should commit to: <ul style="list-style-type: none"> - avoid disturbing sites of heritage importance; and - avoid disturbing burial sites.
<p><i>Plates</i></p>	<div style="display: flex; align-items: center; justify-content: space-between;">  <div style="text-align: right;"> <p>Plate C.3: Meeting with the Ag. Commissioner DMM</p> </div> </div>



Stakeholders' Consultation Record

Project name/Code: GEA2200	ESIA FOR THE PROPOSED VIC IN OR 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
Soceline Nkyiracyza 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 0787031243 asiimwe.raymond@yafca.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)

Agency: Ministry of Tourism, Wildlife and Antiquities (Department of Wildlife Conservation)	
Date & place:	11 th September, 2022 at MTWA, Rwenzori Towers
Meeting attended by:	<p>MTWA representatives:</p> <ol style="list-style-type: none"> 1. Baluku Joward – Senior Wildlife Officer – 0776165072 – joward.baluku@tourism.go.ug 2. Kijjambu Charles – Wildlife Officer – 0787307430 – charles.kijjambu@tourism.go.ug 3. Stephen Fred Okiror – Ag. Principal Wildlife Officer – 0772931963 – sfokiror@gmail.com 4. Micheal Mutebi – Wildlife Officer – 0758468731 – michealmutebi256@gmail.com <p>Gissat consultant: Harriet Mujuni Ronald Kyomuhendo Julius Nsereko</p>
Issues:	Aspects discussed are presented below:
<i>Environmental and social impact assessment</i>	<ul style="list-style-type: none"> • The ESIA must critically examine the following impacts and propose feasible mitigation measures to address them: <ul style="list-style-type: none"> ○ Introduction of invasive species ○ Behaviour of the workers (risk of poaching) ○ Inconvenience to the visitors during the construction phase ○ Social disruptions (HIV/AIDS risks) ○ Durability of the construction materials ○ Waste management during all phases of project implementation ○ Limitation of the project footprint ○ Unintended development around the VICs • The ESIA must assess alternatives to the proposed VICs including alternative locations • 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 • With reference to the fire management plans for the subject PAs, develop fire management plans for each VIC
<i>Administrative changes in the CFRs</i>	<ul style="list-style-type: none"> • 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.
<i>Proposed locations</i>	<ul style="list-style-type: none"> • 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.


<p><i>Conservation efforts</i></p>	<ul style="list-style-type: none"> ● MTWA, in exercising its mandate, is implementing several wildlife conservation initiatives including: <ul style="list-style-type: none"> ○ Review of the Tourism Act to streamline mandates of various Government MDAs in tourism development and wildlife conservation ○ The development of a management plan for wildlife outside protected areas ○ Establishing the National Wildlife Crime Coordination Taskforce (NWCCT) comprised of UWA, UPF, FIA, Interpol, UPDF, Customs, and NFA ○ Diversifying tourism products by adopting religious tourism, dark tourism and cultural tourism ○ Building capacity among sector players through training and support, for example, through the Uganda Crafts and Souvenir Development Project ○ Putting in place avenues to establish sport hunting on private land ○ Supporting the establishment of ranches and mini zoos by the private sector ○ 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 ○ Engaging in Transboundary conservation programs such as the Great Virunga Transboundary Collaboration (GVTC) and Mount Elgon Regional Ecosystem Conservation Programme (MERECP) ○ MTWA has enhanced the operations and revised the curriculum at the Uganda Hotel and Tourism Training Institute (UHTTI) and Uganda Wildlife Training Institute (UWTI) ○ Building the capacity of UWEC to exercise its mandate of implementing conservation education programs across the country
<p><i>Recommendations</i></p>	<ul style="list-style-type: none"> ● The VICs should be operated as a business model which generates revenue. This will allow them to become self-sustaining and increase their longevity. ● Rapid inquiry on the location and condition of existing VICs in and around the protected areas



Stakeholders' Consultation Record

Project name/ Code:	GWS220109 ESIA FOR THE PROPOSED VIC IN OB 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 Okwar	Ag. Puro 0772931963 sokwar@gmail.com		
Michael Muleba	Wildlife officer 0753468751 michaelmuleba@gmail.com		



Stakeholders' Consultation Record

Project name/Code: <u>GEA 220109</u>	<u>ESIA FOR THE PROPOSED OS VICA IN THE PROTECTED AREAS.</u>				
Date:	<u>11-OCTOBER-2022</u>				
Proponent:	<u>UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY.</u>				
Location:	Village	Parish	Sub-County	County	District
Individuals / Organizations in Attendance	<u>MINISTRY OF TOURISM, WILDLIFE AND ANTIQUITIES.</u>				

Purpose of the consultation: Environmental and Social Impact Assessment			Signature/Initial
Name of person/official	Designation & Contact (Tel / Mail)	Key Issues Raised / Discussed	
<u>BALUKU JOWARD</u>	<u>Senior Wildlife officer 0776165072 joward.baluku@unwta.go.ug</u>		
<u>Kijjambu Charles</u>	<u>Wildlife officer 0787307430 charles.kijjambu@unwta.go.ug</u>		

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 th November 2022, Gender, Labour and Development House
Meeting attended by:	<p>Ministry of Gender, Labour and Social Development representative Ruth Muguta Tusaasirwe, Commissioner Cultural Affairs</p> <p>Gissat consultant: Hilda Namitala</p>
Issues:	Aspects discussed are presented below:
Conservation of Culture	<ul style="list-style-type: none"> • The department conserves the cultural values and heritages through encouraging the traditional institutions to protect and preserve the culture. • The cultural sites are divided into two depending on the agencies who take the upper hand in conserving and preserving the heritage <ol style="list-style-type: none"> 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. 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. • 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. • 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. • 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.
Intangible elements	<ul style="list-style-type: none"> • The government supports the promotion of the intangible cultural heritage through the Ministry of Gender, Labour and Social Development by documentation and funding. • The five intangible elements that are recognised by UNESCO include; <ul style="list-style-type: none"> ➤ Back cloth making; ➤ Male cleansing ceremony in Lango


	<ul style="list-style-type: none"> ➤ The Madi bola in Moyo ➤ The Mpaako naming in Tooro ➤ Bigwala in Busoga (Blowing of the local flute)
Domains for cultural heritage	<ul style="list-style-type: none"> • 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. • The numerous domains for the cultural heritage include; <ul style="list-style-type: none"> ➤ Performing Arts (Music, dance, song witing, music publishing, comedy, drama and theatre) ➤ Audio, Visual and interactive media (Film and video, TV cinema and Radio drama) ➤ Books and press (Books, Newspapers and magazines, printed matter libraries which include virtual, book fairs) ➤ Design and creative services (Fashion, graphics, interior design) ➤ Visual Arts and Crafts (Crafts, paintings, sculpture, photography and weaving) ➤ Cultural and Natural heritage.
Protection of community rights from internal and external influence	<ul style="list-style-type: none"> • 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. • The law of the Uganda Cultural Centre which indicates the promotion and development of a currency under culture. • The legal framework which involves; <ul style="list-style-type: none"> ➤ National parenting guidelines ➤ The Ethical values ➤ The child policy
Challenges	<p>Uganda's cultural sector is restrained by a multitude of factors and challenges including;</p> <ul style="list-style-type: none"> • 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. • 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. • Addressing poor coordination within various Ministries that are in the cultural heritage sector: This makes work difficult because each ministry has a different framework.



Stakeholders' Consultation Record

Project name/ Code:	GEA230109 ESIA for the proposed development of Visitor Information Centers in forest areas				
Date:	12 th 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
Rutti Muguti Tusacanise	PSO/S	<ul style="list-style-type: none"> The department conserves the cultural values and heritages through encouraging the traditional institutions to protect and preserve culture. The cultural sites are divided into two depending on the agencies. Community rights are protected. There is a policy under review since 2006 that is protecting the culture and human rights. 	

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)

Project: Environmental and Social Impact Assessment for the proposed development of Visitor Information Centres in selected Protected Areas	
Agency: International Union for Conservation of Nature (IUCN)	
Date & place:	17 th November 2022 at IUCN – Uganda Offices
Meeting attended by:	<p>IUCN representative: Mr James Omoding – Senior Programmes Officer</p> <p>Gissat consultant: Ronald Kyomuhendo Julius Nsereko</p>
Issues:	The aspects discussed are presented below:
Status of the prioritized PAs and design of the VICs	The prioritized PAs are areas of rich biodiversity . 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	<ul style="list-style-type: none"> (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 (ii) Curbing wildlife trafficking and trade through the programme “traffic” which empowers local communities to as first lines of defence (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"> • 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. • Tourism (VICs) provides a crucial and unique way of fostering visitors’ connection with protected area values, making it a potentially positive force for conservation.
<i>Involvement of Host Communities</i>	<ul style="list-style-type: none"> • 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.


<i>Recommendation</i>	<ul style="list-style-type: none"> • Enhancing PA governance through increased research into the challenges facing PAs, avenues for collaboration and biodiversity conservation • 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 • Utilising the funds from revenue sharing (20%) to establish quality tourism facilities by host communities that can generate revenue
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Stakeholders' Consultation Record

Project name/ Code: GEA 2021/09	ESIA FOR THE PROPOSED VICs				
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 Omuding	Senior Program Officer, 0772437169 James.Omuding@iucn.org	Design of the VICs:- The design of the VICs should enhance the functionality of the ecosystem; maintain the biodiversity; Reduce the pressures (existing) 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 (sic) - Assess the cumulative impacts of other projects in the project areas (i) Oil and gas (ii) Plans by local LGs. (iii) Private sector (iv) Host Communities.	

* Fights wildlife trafficking and trade through the programme "Traffic" which encourages use of communities as the first line of defence.

* Initiated 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	IUCH Africa Protected Area Conference (APAC) in June, 2022; ICUM + must are trying to review the existing tourist policies by domesticating some / majority of the declarations in the Kigali declaration.		
Key principles of tourism and visitation management:	(1)	The visitor experience a value for money	<ul style="list-style-type: none"> Facilities v social amenities infrastructure The type of guides (knowledge + professional)
How communities can actively benefit + participate:	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.	The communities near the PAs should establish / upgrade visitor centers to establish decent accommodation / hospitality facilities.	
Follow-up Action Items		Person Responsible	Deadline
Attachments:			

Consultations by: Donell Kiyomuhando
Julius Haseko
Inquiries and comments please forward to: 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

Agency: Association of Uganda Tour Operators	
Date & place:	11 th September 2022 at AUTO Headquarters
Meeting attended by:	<p>AUTO representatives:</p> <ol style="list-style-type: none"> 1. Albert Kasozi – Chief Executive Officer 2. Nancy Okwong – Public Relations Officer – 0772183898 3. Jackson Sebugwawo – Executive Assistant <p>Gissat consultant: Ronald Kyomuhendo Julius Nsereko Harriet Mujuni</p>
Issues:	Aspects discussed are presented below:
<i>The Association’s role</i>	<ul style="list-style-type: none"> • 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.” • 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) • Training of the association members in various fields to raise the quality of services provided and professionalism in the tourism sector
<i>Anticipated Benefits</i>	<ul style="list-style-type: none"> • 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. • 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. • The VICs will create spaces for Tour Operators to advertise their products and services
<i>Recommendations</i>	<ul style="list-style-type: none"> • The design of the VIC should, as much as possible, align with the unique character of the protected area where it is established • 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. • 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)


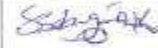
AUTO



Stakeholders' Consultation Record

Project name Code:	GFA 220109: EIA for the proposed Visitor Information Centres in Selected protected areas				
Date:	11 th 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 admin@ugandatouroperators	<ul style="list-style-type: none"> Benefits of the VIC to Tour Operators Possible conflicts 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 th September, 2022 at USAGA – UTA offices in Nakawa
Meeting attended by:	<p>USAGA – UTA representatives: Herbert Byaruhanga – President (UTA) & General Secretary (USAGA)</p> <p>Gissat consultant: Ronald Kyomuhendo</p>
Issues:	Aspects discussed are presented below:
<i>USAGA</i>	<ul style="list-style-type: none"> The association’s main role is “to provide a platform to increase tour guides’ visibility and recognition as key actors in the tourism industry.” 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. 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
<i>UTA</i>	<ul style="list-style-type: none"> UTA is the umbrella association for all tourism associations in Uganda. Its members include: <ul style="list-style-type: none"> - Association of Uganda Tour Operators (AUTO) - Uganda Safari Guides Association (USAGA) - Uganda Hotel Owners Association (UHOA) - Uganda Association of Travel Agents (UATA) - Uganda Community Tourism Association (UCTA)
<i>Inadequacies in existing VICs</i>	<ul style="list-style-type: none"> The existing information centres lack content on the available tourism products within the areas that they serve. They also lack proper facilities such as sitting areas, refreshments and storage of essential items
<i>Areas for collaboration</i>	<ul style="list-style-type: none"> 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 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.
<i>Recommendations</i>	<ul style="list-style-type: none"> The proposed VICs must act as information banks, to allow for the archiving and retrieval of tourism-related information. 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.



Stakeholders' Consultation Record

Project name/ Code:	GEA 220109: ESI for the Proposed Visitor Information Centres				
Date:	17 th October 2022				
Proponent	UWA & NFA				
Location:	Village	Parish	Sub-County	County	District
Individuals / Organizations in Attendance	UGANDA	SAPARI	GUIDES ASSOCIATION		

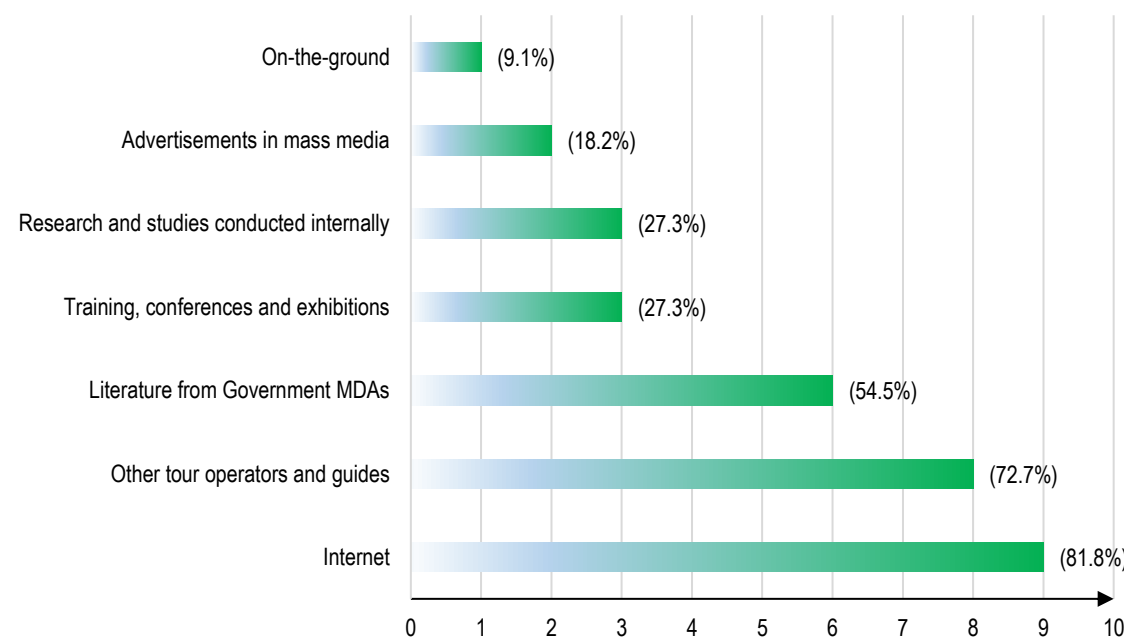
Purpose of the consultation: Environmental Impact Assessment

Name of person/official	Designation & Contact (Tel Mail)	Key Issues Raised / Discussed	Signature/ Initial
Herbert Boyanaka	Ct Secretary Admin ugasa@nfa.org	Involvement of Tourist Guides in the implementation of the project - Particip, Capacity building	

Consultation with Private Tour Operators

Table C.10: Summary of issues in meeting with private tour operators

Agency: Private Tour Operators	
Date & place:	Google form: https://forms.gle/YdmEwTLSUY8DTQuY7
Respondents	<ol style="list-style-type: none"> 1. Thavma Travels Ltd 2. Kara-Tunga Arts & Tours 3. Mogambo, Pasion Por Africa, Ltd. 4. G&C Tours Ltd 5. Y Save Safaris Ltd 6. Hanze Tours 7. Magic Safaris 8. Canaan Travels Limited 9. Kagera Safaris 10. Marasa Africa 11. Lets Go Travel
Question	Response
What are the current tourism offerings provided by your firm?	<ul style="list-style-type: none"> • Booking, air ticketing, visa processing and accommodation. • Insurance and consultancy • Cultural and eco tours, Boat Excursions, game drives • Birding , gorilla and chimpanzee tracking, hiking and cultural experiences

<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%
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<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"> • Awareness of natural treasure among the locals • Employment and job placement for the locals • Preservation of culture through the display of information and knowledge • Knowledge transfer from older generations to the younger ones and upskilling 																
<p>How has your firm benefited from the existing Information centres in and around protected areas?</p>	<ul style="list-style-type: none"> • Maps provided by the VICs have been very helpful • Useful information has been provided to clients 																
<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"> • Limited information at the VICs about communities especially in written format • The VICs cover only specific regions leaving out other tourism destinations in the country such as the Karamoja sub-region • Renovation and redesigning the VICs to attract even more visitors • Misinformation provided by the VICs implies the need for more VICs spread across • Poor sanitation and housekeeping at some of the VICs 																

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"> • Provide skilled, trained and informed staff and involve private stakeholders • Provide maps to visitors • Acquire and share more accurate information • Encourage private companies to engage and partner with VICs • Redesign the structures with modern facilities to attract even more visitors
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"> • Conducting training workshops • Sub-contracting with the operation offices • Provide information and share ideas to attract more tourists

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 th March 2023 at the Ministry of Water and Environment - Department of Environment Support Services
Meeting attended by:	<p>Ministry of Water and Environment representatives:</p> <ol style="list-style-type: none"> 1. Maureen Anino – Assistant Commissioner – Department of Environment Support Services 2. Bob Kazungu – Ag. Assistant Commissioner Forestry Assessment and Monitoring 3. Patrick Otim – Environment Officer – 0772643692 4. Wafula Dickson – Environment Officer 5. Kato Gabriel – Environment Officer – 0785165405 6. Nakiyingi Eva – Forest Officer – 0701209504 7. Apiyo Kevin – Wetlands Officer 8. Firmina Acuba – Senior Sociologist - Water and Environment Sector Liaison Department – 0752625837 <p>Uganda Wildlife Authority representative:</p> <ol style="list-style-type: none"> 1. Edgar Buhanga – Project Officer, IFPA – CD Project, Uganda Wildlife Authority (UWA) <p>Gissat consultant: Harriet Mujuni Julius Nsereko</p> <p>Absent with apology:</p>

	<ol style="list-style-type: none"> 1. Justine Namaara – UWA 2. Sylvia Tumusiime – NFA 3. Shallon Challenge - NFA
Issues:	Aspects discussed are presented below:
Rationale for the development of the VICs	<ul style="list-style-type: none"> • 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. • 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. • Tourism (VICs) provides a crucial and unique way of fostering visitors’ connection with protected area values, making it a potentially positive force for conservation. • 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.
Involvement of local communities	<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>
Resource consumption	<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.
Impact Assessment Mitigation Hierarchy (Section 115 National Environment Act, 2019)	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
Use of Performance Standards	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.
Siting of VICs	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.
Water Supply	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.
Environmental and social impact assessment	<p>The ESIA must critically examine the following impacts and propose feasible mitigation measures to address them:</p> <ul style="list-style-type: none"> • Introduction of invasive species • The behaviour of the workers (risk of poaching) • Social disruptions (cultural changes, social vices, HIV/AIDS and other infectious diseases) • The durability of the construction materials. All material should be acquired from licensed and monitored areas; consider material substitution where possible • Waste management during all phases of project implementation especially ESMP • Limitation of the project footprint • 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. • Detail a clear description of both project cumulative and residual impacts • 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

Stakeholders' Consultation Record

Project name Code: <i>GFA 220109</i>	<i>ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED VIC IN OS PROTECTED AREAS & OS CFS</i>		
Date:	<i>14-MARCH-2023</i>		
Proponent	<i>UGANDA WILDLIFE AUTHORITY AND NATIONAL FORESTRY AUTHORITY</i>		
Individuals / Organizations in Attendance	<i>MINISTRY OF WATER AND ENVIRONMENT</i>		
Location			

Purpose of the consultation: Environmental and Social Impact Assessment

Name of person/official	Designation & Contact (Tel Mail)	Key Issues Raised / Discussed	Signature Initial
<i>Mawani Anino</i>	<i>Assistant Commissioner - DESS</i>		<i>Mawani</i>
<i>Bob Kazungu</i>	<i>Ag. Asst. Comm. Forestry Assessment & Monitoring</i>		<i>BK</i>
<i>Patrick Otim</i>	<i>Env. Officer 0772643692</i>		<i>Patrick</i>
<i>Wafula Dickson</i>	<i>Env. Officer</i>		<i>Wafula</i>
<i>Kato Gabriel</i>	<i>Environment Officer - MWI 0785165405</i>		<i>Kato</i>
<i>NAKITIGAI EVA</i>	<i>Forest officer MWI 0701209504</i>		<i>Eva</i>
<i>Edgar Buhanga</i>	<i>Project officer IFPACB Project UWA</i>		<i>Buhanga</i>

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 st March 2023 at the Ministry of Water and Environment – Level I – Nile Boardroom
Meeting attended by:	<p>Directorate of Water Resources Management (DWRM) staff:</p> <ol style="list-style-type: none"> 1. Brenda Atuhaire – Senior Water Officer – brendathr141@gmail.com 2. Kajimu Athamah - Senior Water Officer – kajimujr@gmail.com 3. Denis Ocoromoc – Water officer 4. Lillian Bainemirembe – Water officer – baineliliangabriella@gmail.com 5. Sekindi Isaac – Senior Water Officer - Isaac.Sekindi@mwe.go.ug 6. Odong Joseph – Senior Water Officer – odongjoze@gmail.com 7. Victoria Kinobe Nakatudde – Water Officer – victoriakinobe16@gmail.com 8. Ajok Paska – Hydrologist – paskaajok@gmail.com 9. David Kataratambi – Senior Water Officer 10. Rwarinda E. Martin – Ag. Assistant Commissioner DWRM 11. Atesa Abigail – Senior Water Officer 12. Okurut Daniel – Senior Water Officer 13. Julius Ahaabwe - Senior Water Officer 14. Nicholas Tumwine – Engineer 15. Boaz Mwebaze - Senior Water Officer <p>Uganda Wildlife Authority representative:</p> <ol style="list-style-type: none"> 1. Edgar Buhanga – Project Officer, IFPA – CD Project, Uganda Wildlife Authority (UWA) <p>Consultant: Gissat Environment Associates</p>
Agenda	<ol style="list-style-type: none"> 1. Opening Prayer 2. Self-Introduction 3. Opening Remarks by Chairperson 4. Introductory Remarks by IFPA-CD Project Manager 5. Presentation of the VIC Key Project Components and Impacts 6. Reactions / Discussions 7. Way forward

<p>Opening Remarks by Asst. Commissioner – DWRM</p> <p>1. Requirement and Rationale of Public Consultation and Project Disclosure during ESIA</p>	<p>8. Concluding Remarks 9. Closing Prayer</p> <ul style="list-style-type: none"> - 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. - Key among the EIA process is the requirement to consult key stakeholders that include lead agencies and project affected communities. - 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. - Key objectives of consultation at scoping stage include: <ul style="list-style-type: none"> a) To identify potential key stakeholders; b) To develop the proper consultation tools; c) To consult with key strategic stakeholders and introduce the project, obtain baseline data and to identify key issues; <p>Specifically, the consultative process is for:</p> <ul style="list-style-type: none"> - Disclosure of project information (purpose, nature, scale, etc) - Risks and impacts of the project; - Proposed mitigation measures <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>Background of the project:</p> <ul style="list-style-type: none"> 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>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"> a) Description of the purpose, nature, scale and duration of proposed VIC project b) Summary of legal framework requirements applicable to the project and the ESIA c) An outline of the main risks, impacts and potential benefits of the project d) The project ESIA team and an invitation to provide comments.
DISCUSSIONS	
Benefit/ Impact/ Concern/ Issues:	Aspects discussed are presented below
The design and siting of the proposed VICs	<ul style="list-style-type: none"> • 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. • The project only targets PAs within the Albertine landscape and is only for establishment of VICs and not accommodation facilities. • 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.
Flood Risks	<ul style="list-style-type: none"> • 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

	<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"> • 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. • 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.
Sanitation and Sanitary Facilities	<ul style="list-style-type: none"> • Sanitary facilities should not be located in areas with high water tables to reduce on the risk of pollution to the ground water resources. • Water-borne toilets and septic tanks should be placed away from surface or underground water sources to prevent pollution.
Resource consumption and water abstraction	<ul style="list-style-type: none"> • 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. • 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. • Water abstraction both from surface and underground sources requires permission from the Directorate of Water Resources especially where there is use of motorized pumps. • 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. • 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.
Energy requirements	<ul style="list-style-type: none"> • 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.
Construction Permits	Facilities close or across water bodies require construction permits that are issued by the DWRM.
Solid waste management	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.
Water Resources Assessment	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




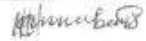



	<p>at least a 50–100-year period prior to placement of all proposed project components. The assessment will provide information on among other things:</p> <ul style="list-style-type: none"> - Water quality for selected sources; - Water security requirements; - Availability; - Demand; - Flood risk <p>Location and conveyance of water needed for each of the selected sites.</p>
Climate-resilient development	<p>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.</p>
ESIAs	<p>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.</p>
Oil Spills	<p>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.</p>
Nature Walks	<p>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.</p>
Project Objectives	<p>Project should have one main objective which then can be split into sub sections to clearly bring out the key goal for implementation.</p>









Stakeholders' Consultation Record

Project name/ Code: <i>202103</i> <i>ESIA For Proposed YICA</i>					
Date: <i>21/03/2023</i>					
Proponent: <i>UGA and NFA</i>					
Location: <i>MDWE - LUZIRA</i>					
<i>DWRM -</i>		Village	Parish	Sub-County	County
<i>NILE BOARDROOM</i>		<i>LUZIRA</i>			
Individuals / Organizations in Attendance					

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 Atuhaire	Senior Water Officer <i>brenda@nfa.gov.ug</i>		
<i>Edgar Buhya</i>	<i>Project Officer/UGA</i>		
2. Kajimu Atukunda	Senior water officer <i>Kajimu@nfa.gov.ug</i>		
3. Davis ecoronac	<i>water officer</i>		
4. Kibiri Brunemwamba	Water Officer <i>kibiri@nfa.gov.ug</i>		
5. Seandi Isaac	<i>Isaac Seandi@nfa.gov.ug</i>		
6. Odony Joseph	SWO <i>odonyjoseph@nfa.gov.ug</i>		

7.	Victoria Kinobe Nakatvalde	Water Officer victoriakinobe12@gmail.com		
8.	KJOK PASIK	Hydrologist kukodjok@gmail.com		
9.	David Kataratumbi	Senior Water Officer		
Follow-up / Action Items		Person Responsible		Deadline
10.	Rwarinde- E. Martin	Ag. Ac - CE		
11.	ATISA ABIGAIL	Senior Water Officer		
12.	Attachments	Senior Water Officer		

13. Julius Ahaabwe

Consultations by:

Signature:

Inquiries and comments please forward to: talk2gissat@mail.com

14. Nicholas Tumwine

15. Boaz Mwebaze

**Appendix E: Biodiversity Report
ESIA BIODIVERSITY REPORT FOR THE PROPOSED VISITOR INFORMATION CENTERS
SPREAD ACROSS SITES**

Baseline Biological environment – ESIA methodology

Vegetation

Field studies 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 NatureUganda, 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, endeavors to address concerns related to invasive aliens.

Echuya – Kagano – Karengire community campsite

The site lies within less than 10m to the Kabale – Kisoro highway. The site was previously forest and clear felling was undertaken to create an Eco-tourism site with well-maintained grasses. NatureUganda has been supporting the Collaborative Forest Management (CFM) groups including the Batwa at the site for more than two decades. The trees within the site are dominated by; *Croton megalocarpus*, *Croton macrostachyus*, *Olaea europea*, *Polyscias fulva*, and *Antiaris toxicaria*.



Appearance of the proposed site in Echuya

Invasive species

No invasive plant species was recorded at the site at the time of the survey.

Species of conservation concern

None of the species recorded during the survey were nationally or globally threatened.

Birds

With the site’s main attraction being birding, there are already well-developed birding trails with the Gwakatwalo trail stretching 5km distance from Karengire to Kanaba focusing on birding, Batwa cultural activities and nature forest walk as activities. Bird activity around the site captured species such as; Mountain Oriole *Oriolus percivali*, Great blue Turaco *Corythaeola cristata*, White-stirred Robin *Pogonocichla stellate*, Sharpe’s Starling *Poeoptera sharpi*, Banded Prinia *Prinia bairdii*, and Red-throated Alethe *Chamaetylas poliophrys*.

Sensitivity and species of conservation concern

Ichuya is known for being the only reserve with the Endemic Grauer’s Swamp-warbler *Bradypterus graueri* found mainly in the swampy areas of the forest. However, several other species of conservation value are known for the forest reserve but no such species are known around or were recorded within the environs of the proposed VIC site.

Mammals

Like other sites that fall within the same Albertine geographical realm, Ichuya has moderate mammal diversity. From the site records, diurnal primates known include; Chimpanzee *Pan troglodytes* (Critically Endangered), Black and White Colobus *Colobus guereza*, Red-tailed Monkey *Cercopithecus Ascanius*, L’Hoest’s Monkey *Cercopithecus lhoesti*, Blue Monkey *Cercopithecus mitis* and Olive Baboon *Papio Anubis*. However, the proposed site is already influenced by the presence of people in addition to its proximity to the Kabale – Kisoro highway and therefore no records of mammals were captured during the survey.

Alternative site – Kanaba

Just like Kagano – Karengire, the site lies within proximity of about 100m to the Kabale – Kisoro highway. The site was previously forest and clear felling was undertaken to create an Eco-tourism site with relatively well-maintained grasses and a few locally made structures. The community through Collaborative Forest Management (CFM) groups are trying to develop the site. The trees within the site are dominated by; *Croton macrostachyus*, *Olaea europea*, *Polyscias fulva*, *Ficus sp* and *Antiaris toxicaria*. Herbs; *Digitaria sp*, *Justicia exigua*.



Appearance of the proposed site in Kanaba

Invasive species

No invasive plant species was recorded at the site at the time of the survey.

Species of conservation concern

None of the species recorded during the survey were nationally or globally threatened.

Birds

With the site's main attraction being birding, there are already well-developed birding trails with the Gwakatwalo trail stretching 5km distance from Karengire to Kanaba focusing on birding, Batwa cultural activities and nature forest walk as activities. Bird activity around the site captured species such as; Black and White Casqued Hornbill *Bycanistes subcylindricus*, Great Blue Turaco *Corythaeola cristata*, Yellow-rumped Tinkerbird *Pogoniulus bilineatus*, Little Greenbul *Eurillas virens*, Ross' Turaco *Tauraco rossae*, Yellow-whiskered Greenbul *Eurillas latirostris* and Speckled Tinkerbird *Pogoniulus scolopaceus*,

Sensitivity and species of conservation concern


Ichuya is known for being the only reserve with the Endemic Grauer's Swamp-warbler *Bradypterus graueri* found mainly in the swampy areas of the forest. However, several other species of conservation value are known for the forest reserve but no such species are known around or were recorded within the environs of the proposed VIC site.

Mammals

Like other sites that fall within the same Albertine geographical realm, Ichuya has moderate mammal diversity. From the site records, diurnal primates known include; Chimpanzee *Pan troglodytes* (Critically Endangered), Black and White Colobus *Colobus guereza*, Red-tailed Monkey *Cercopithecus Ascanius*, L'Hoest's Monkey *Cercopithecus lhoesti*, Blue Monkey *Cercopithecus mitis* and Olive Baboon *Papio Anubis*. However, the proposed site is already influenced by the presence of people in addition to its proximity to the Kabale – Kisoro highway and therefore no records of mammals were captured during the survey.

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 VIC AT BKAGONO VILLAGE, KALENGYERE PARISH, MUKO SUB
- COUNTY, RUBANDA DISTRICT AT GPS: 35M 812675 M E 9862271 M N**

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). 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⁺, Na⁺) and atomic absorption spectrophotometer (AAS) (Ca²⁺, Mg²⁺); 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
52.0	30.0	8.0	Sandy Clay Loam soil


17/05/2022

Bonny Balikudembe
Senior Laboratory Technician
Soil, Water and Plant Analytical Laboratory



Appendix G: Waste management plan

Integrated Waste Management Plan (WMP) for the Proposed Echuya Visitor Information Centre

February, 2023

REVISIONS TRACKING TABLE

Document title	Integrated Waste Management Plan for the Proposed VIC within Echuya Central Forest Reserve at Muko
Document subtitle	Final Report
Date	16 th February 2023
Version	1.0
Author	Gissat Environment Associates
Client Name	National Forestry Authority

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1.0 Introduction

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 Kagano, Muko Sub county. 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 Echuya VIC and Waste Streams

3.1 Project Overview

The project will support the development of visitor information infrastructure in Echuya 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 (35M WGS 1984)		
1.	Echuya Central Forest Reserve	NFA sector offices at Kagano Village, Kalengyere Parish, Muko Sub – County, Rubanda District	A _E	812675	9862271
			B _E	812596	9862353
			C _E	812696	9862394
			D _E	812714	9862320

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
Public facilities	
	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	
Service facilities	
	Staff facilities
	Staff room / back office workshop
	Storage and safety facilities
	Supply room / storage
	Strong room
MEP Services	Tech room / generator / transformer
	Water / solar heaters
	Water pressure tank
	Electrical Service
	CCTV Equipment and IT equipment room
	Waste disposal services
	Centralized on site Garbage containers
	Parking areas
Landscaping	
Garden and Outdoor seating	



Figure 3.1: Proposed Echuya 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

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.

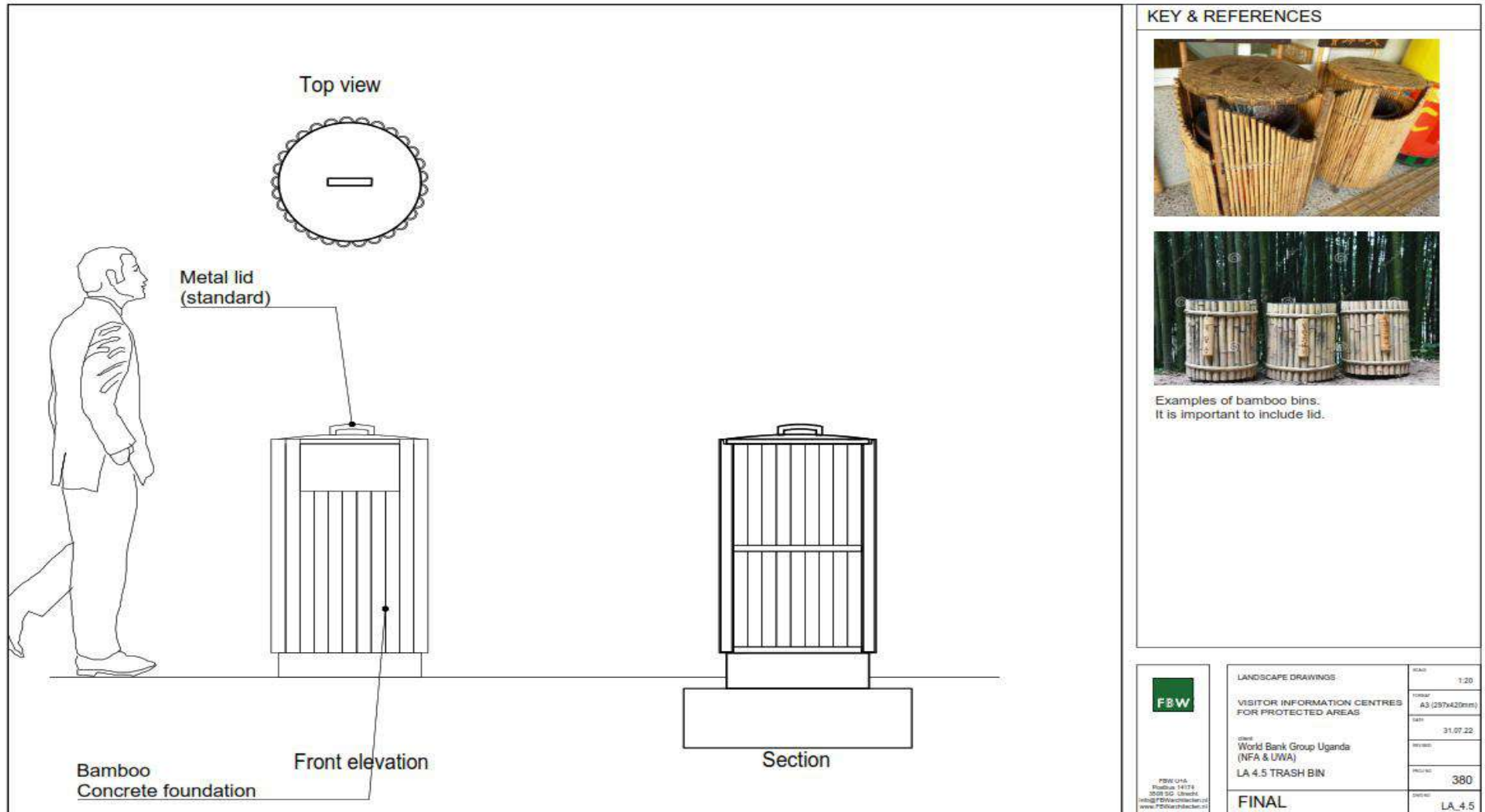


Figure 4.1: Proposed waste collection bins

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.

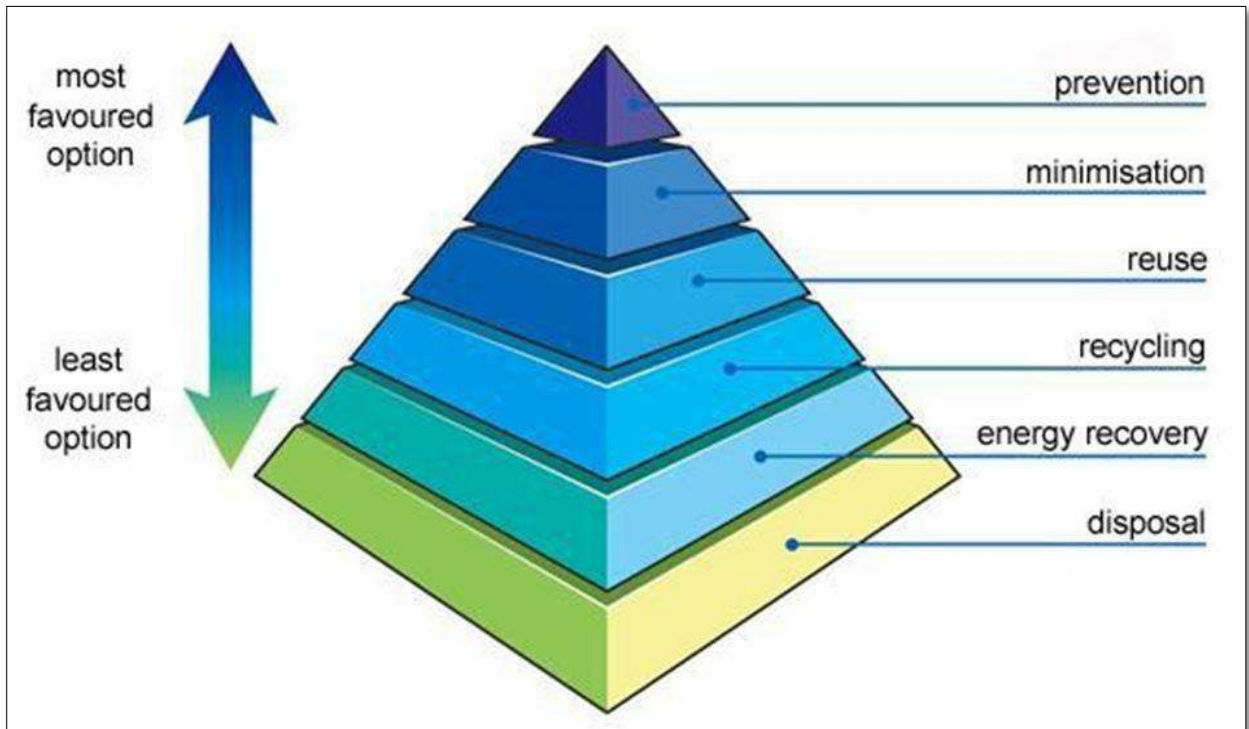


Figure 4.2: Typical waste management hierarchy

5.0 Management Actions

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 and staff washrooms will be channeled through manholes to the decentralized Anaerobic Baffled Reactor (ABR) safely located at least fifty meters from key sensitive receptors. Compared to a conventional septic tank, an ABR provides additional treatment of the water before being released into the ground through percolation trenches. The treatment occurs in chambers referred to as 'baffles' which hold back scum allowing the sludge to settle. The sludge contains micro-organisms that take on the anaerobic reaction through which the organisms are broken down. Methane is generated during this process and safely vented off. The resulting liquid effluent is considerably cleaner compared to the output of a conventional septic tank.

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, palettes 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. Palettes 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"> (i) Ensure that sufficient resources are made available to implement this management plan; (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. (iii) Ongoing liaison with National and Provincial Government agencies and regulatory authorities regarding the management of wastes; (iv) Continuously reviewing the effectiveness of the actions described in this plan as informed by regular review of monitoring reports prepared by the ECO; (v) Evaluate and, where appropriate, authorise new options related to the management or disposal of wastes; (vi) Ensure that complaints and non-conformances related to management of waste are recorded and addressed within an acceptable timeframe; (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; (viii) Take necessary steps to enforce compliance with this plan where this is lacking; (ix) Ensure that employees and contractors are aware of and have the necessary training to comply with this plan; (x) Monitor changes in national legislation related to the management of waste and update this management plan accordingly; (xi) Periodically review the effectiveness of the plan; (xii) Ultimate responsibility for the implementation of this plan; and (xiii) Overall responsibility for ensuring implementation and compliance with this management plan.
2.	VIC - Environmental Control Officer (ECO)	<ul style="list-style-type: none"> (i) Assist the NFA to ensure that contractors and employees comply with the requirements of this plan during the construction phase; (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; (iii) Giving a report back on issues related to waste management at construction meetings and other meetings that may be called regarding environmental matters; (iv) Ensuring that all employees and contractors are aware of project-related requirements for management of waste; (v) Undertake any specific monitoring during the construction phase required by this plan; (vi) Manage any remedial actions required in the event of non-compliance with the requirements of this plan; (vii) Ensure that communities are aware of the complaints register and that they can use this to report issues related to waste management; and (viii) Ensure that complaints related to waste are recorded and resolved within an acceptable timeframe.
3.	VIC Employees and Visitors	Comply with the requirements of this management plan
4.	Contractors	<ul style="list-style-type: none"> (i) Provide evidence of consideration and application of the waste management hierarchy during the execution of their contracts;

S/No.	Position Title	Responsibility
		(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"> (i) Comply with the requirements of this management plan as well as national legal requirements; (ii) Manage all waste in strict accordance with the conditions of their contracts; (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; (iv) Provide NFA with evidence of safe disposal (waste manifests) of project wastes assigned to them; (v) Maintain records of all project wastes managed by them; and (vi) In the event of an accident involving waste assigned to them by NFA, to immediately inform the applicant and / or its representative.

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
	Compliance with plan	% Contractors with approved waste method statements Number of reports of incorrect storage or disposal waste; Frequency of incidents of littering; Integrity of waste storage facilities; % Compliance of treated effluent with relevant limits % Compliance of storm water with relevant limits State of storm water infrastructure	Audits	Monthly
	Waste quantification	Quantity of non-hazardous waste requiring disposal Quantity of hazardous waste requiring disposal	Quantification by volume or mass	Monthly
	Training	% Employees trained on management of wastes	Training records (including induction and more focussed training)	Continuous
	Complaints Register	Number of complaints or formal cautions related to management of wastes	Complaints Register or cautions / fine	Continuous

8.0 Record Keeping

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

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

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

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

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 H: Health and Safety plan

**Health and Safety Plan (HSP) for the Proposed
Echuya Visitor Information Centre**

February, 2023

REVISIONS TRACKING TABLE

Document title	Health and Safety Plan for the Proposed VIC within Echuya Central Forest Reserve at Kagano, Muko Sub County
Document subtitle	Final Report
Date	16 th 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 Echuya - 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 9th 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.

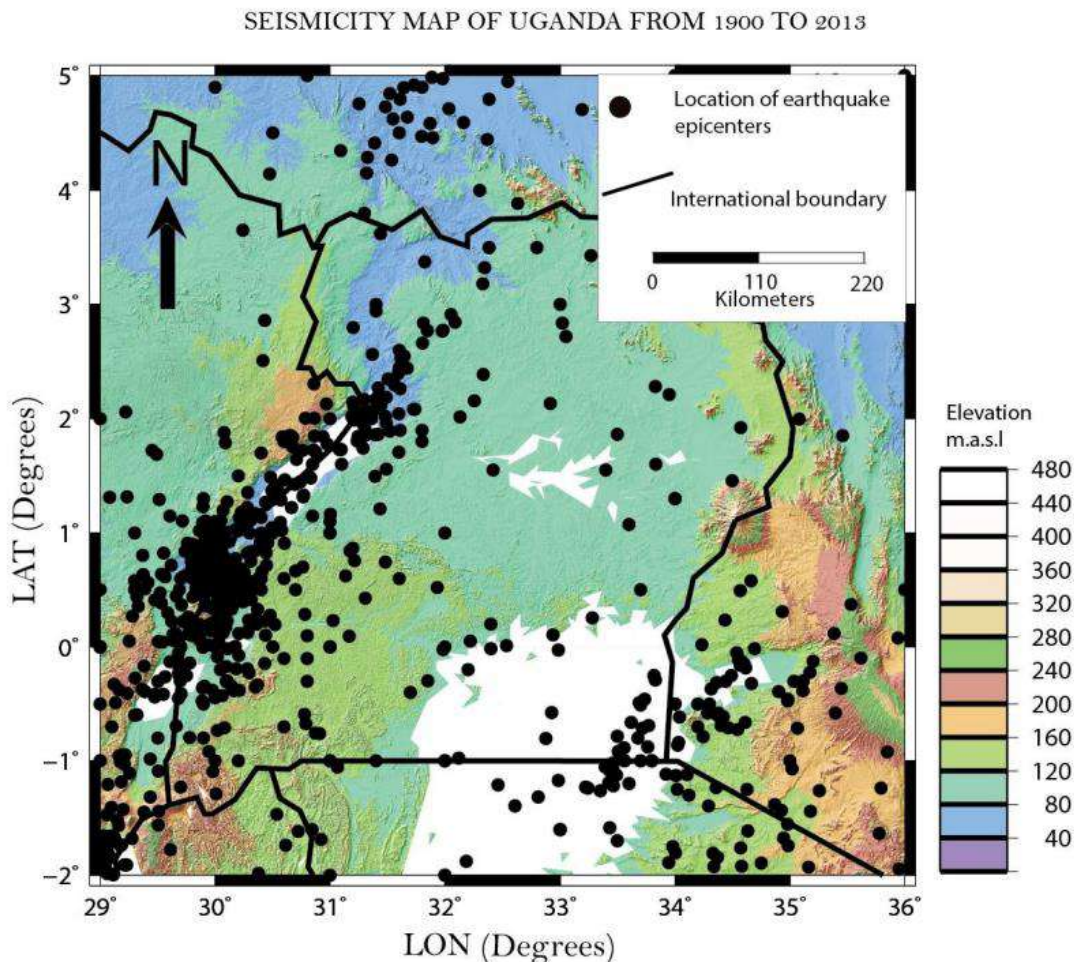


Figure 1: Seismicity map of Uganda (1900-2013)
 Source: Geological Surveys and Mines Department.

EPICENTRAL DISTRIBUTION OF EARTQUAKES WITH MAGNITUDE 4.0 AND ABOVE LOCATED IN THE ALBERTINE GRABEN (1965-2013).

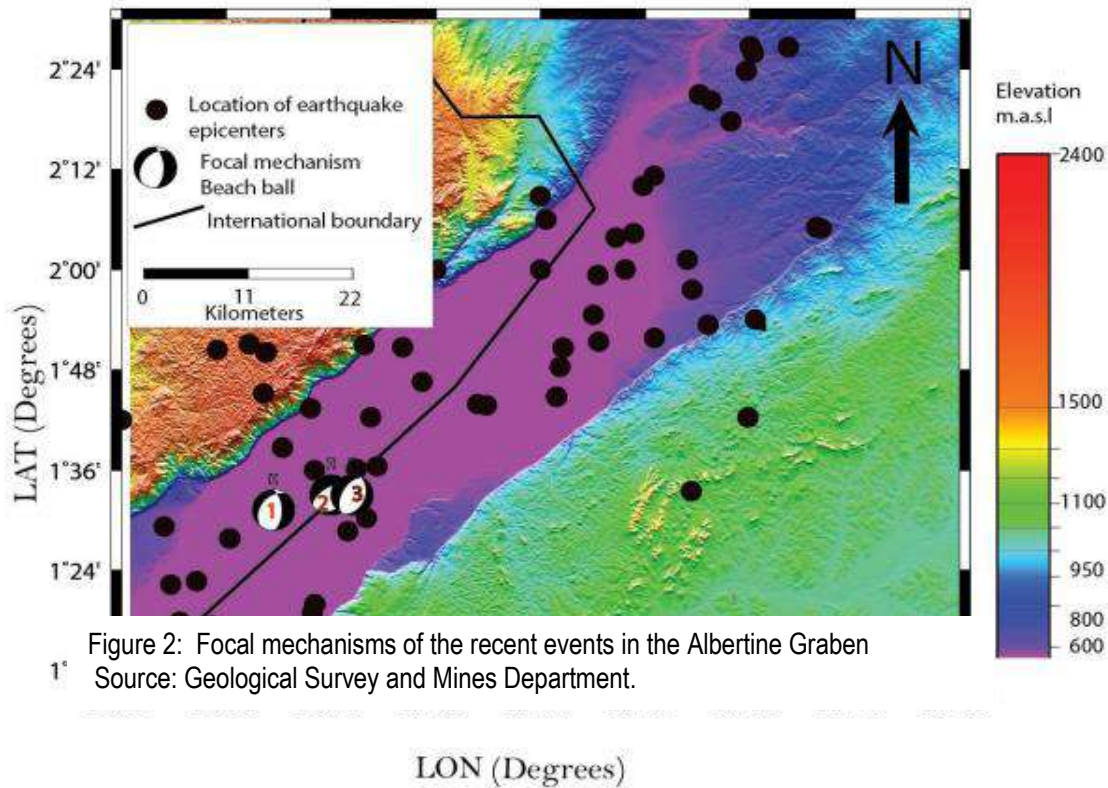


Figure 2: Focal mechanisms of the recent events in the Albertine Graben
Source: Geological Survey and Mines Department.

Numbers 1, 2 and 3 represent focal mechanisms of the July 2013 earthquakes in the Albertine Graben

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 Echuya 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 tourist destination areas 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 Echuya - 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 Echuya 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 Echuya 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 I: Biodiversity Management and Monitoring Plan

The Biodiversity Management and Monitoring Plan addresses planning, management and/or monitoring activities, over the project 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, 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					
Objective(s)	<ol style="list-style-type: none"> 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 2. To ensure that no waste is dumped into the forest ecosystems and protected areas. 3. To ensure that all critical features are avoided during the construction phase 4. Ensure that there is no Right of Way and limit forest clearing to the operational area as much as possible 				
Management Strategy	The no loss of habitat will be maintained throughout construct phases, through design, compliance, rehabilitation and sensitization.				
		Responsibility		Timing	
		Implementation	Monitoring/ Checking		
Actions/Control(s)	<ol style="list-style-type: none"> i. Final design for the project will adequately address considerations of the avoidance protocol. ii. Design will accommodate streams and flood plains to 	Contractor Civil Works contractor	Phase progress Quality checking by the	Throughout the project	

LOSS OF COVER AND HABITAT MANAGEMENT				
	<p>minimise risks e.g. adequate culverts where applicable</p> <p>iii. Marking boundary of construction area to ensure that the Contractor avoids additional and unnecessary vegetation clearance.</p> <p>iv. Restricting the removal of vegetation and soil cover to only those areas required</p> <p>v. Disturbed areas will be rehabilitated within three months of work completion.</p> <p>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.</p> <p>vii. Company shall strive to achieve “Net Gain” in biodiversity</p> <p>viii. Sensitizing workers about Park and Forest Reserve rules and regulations</p>		Project manager	
Performance Indicator(s)	No complaints from lead agencies, tourism stakeholders and adjacent community on ecosystem changes	Civil Works / Environment Field Officer-EFO	District Environment Officers	Throughout
Monitoring	Regular site progress reports	Civil Works / EFO	Project Engineer	Throughout
Reporting	Any complaints or incidents to be reported to Site Civil Engineer.	All	Project Engineer	Throughout
Corrective Action(s)	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				
Objective(s)	1. To ensure that effects on flora and fauna are identified and where possible avoided, minimised or reduced.			
Management Strategy	The no loss of habitat will be maintained throughout construct phases through design, compliance, rehabilitation and sensitization.			
		Responsibility		Timing
		Implementation	Monitoring/ Checking	
Actions/Control(s)	i. Provision of temporary road signage during construction	Contractor	Phase progress	Throughout the project

MANAGEMENT OF DISTURBANCE OF FAUNA DUE TO PROJECT TRAFFIC

	<p>and ensure drivers observe speed limits.</p> <p>ii. Deployment of traffic guides and warning signs where necessary</p> <p>iii. Provision of temporary and permanent speed reducing measures such as humps.</p> <p>iv. Prohibition of haulage and other activities at night to avoid further accidents.</p> <p>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</p> <p>vi. Cover material delivery trucks with tarpaulin to minimize the risk of loose material creating a dusty environment during transit.</p> <p>vii. Measures to reduce noise from machinery, equipment and vehicles such as:</p> <ul style="list-style-type: none"> • 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. <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>Civil Works / EFO</p>	<p>Quality checking by the Project manager</p>	
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MANAGEMENT OF DISTURBANCE OF FAUNA DUE TO PROJECT TRAFFIC				
	xi. Stick to and respect the proposed team sizes per site to avoid an overburden and extended disturbance to wildlife in their natural environment 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. xiii. Avoid meandering outside operation site to reduce human-animal interaction and interruption of wildlife activity xiv. Busy fauna crossing points or known wildlife corridors shall be shared among teams and given due consideration xv. Safe distances from wildlife be operationalised and popularised among machine operators and be part of the toolbox meetings			
Performance Indicator(s)	No complaints from lead agencies, respective stakeholders and adjacent community on ecosystem changes	Civil Works / EFO	District Environment Officers	Throughout
Monitoring	Regular site progress reports	Civil Works / EFO	Project Engineer	Throughout
Reporting	Any complaints or incidents to be reported to Site Civil Engineer.	All	Project Engineer	Throughout
Corrective Action(s)	Implement corrective measures prior to the recommencement of site works	Civil Works / EFO	Project Engineer	Throughout

MANAGEMENT OF SOIL EROSION				
Objective(s)	1. To prevent and/or control erosion and damage from steep slopes where they exist 2. To minimise effects of soil degradation from erosion and sedimentation control systems during construction			
Management Strategy	The impacts from erosion will be dealt with throughout construct phases through design, minimizing exposure, sensitization and revegetation / restoration.			
		Responsibility		Timing
		Implementation	Monitoring/ Checking	
Actions/Control(s)	i. Adequate drainage considerations to be made during design. ii. Appropriate engineering designs and standards such as	Site Engineer	Civil Engineer	Project Manager
				Throughout the project

MANAGEMENT OF SOIL EROSION

	<p>Design Manuals shall be adopted to maintain appropriate diameters, openings and strength of the hydraulic structures.</p> <ul style="list-style-type: none"> 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 			
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MANAGEMENT OF SOIL EROSION					
	<p>particles, reduce the speed of the running water and act as wind breaks, particularly along exposed slopes.</p> <p>xii. Replanting shall be undertaken during rainy season to ensure high re-vegetation success or restoration should be enhanced during the dry season.</p> <p>xiii. Sensitizing drivers, emphasizing the need to stick to designated routes and speed limits</p> <p>xiv. Restricting the removal of vegetation and soil cover to only those areas required for the project</p> <p>xv. Trees and other woody vegetation will be maintained to the dot.</p>				
Performance Indicator(s)	No complaints from stakeholders on erosion related issues	Site Engineer	Civil	District Environment Officer	Throughout
Monitoring	Regular stakeholder meetings and reporting	Site Engineer	Civil	Project Engineer	Throughout
Reporting	Any complaints or incidents to be reported to Human Resource Officer	All		Project Engineer	Throughout
Corrective Action(s)	Implement corrective measures prior to the recommencement of site works	Civil Works / EFO		Project Engineer	Throughout

MANAGEMENT OF SOIL COMPACTION					
Objective(s)	1. To minimise effects of soil degradation from erosion and sedimentation control systems during construction				
Management Strategy	The impacts from soil compaction will be dealt with throughout construct phases through design, minimizing exposure, sensitization and revegetation.				
		Responsibility		Timing	
		Implementation	Monitoring/ Checking		
Actions/Control(s)	<p>i. Scarification after compaction will be done to avoid long term compaction of the affected areas.</p> <p>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.</p> <p>iii. Restoration of affected areas</p>	Site Engineer	Civil	Project Manager	Throughout the project

MANAGEMENT OF SOIL COMPACTION					
	by planting indigenous plants and grasses after project phase is completed. iv. Locating material sourcing sites as close to the Project area as possible in order to minimize haulage distances. 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				
Performance Indicator(s)	No complaints from lead agencies and other stakeholders on compaction related issues	Site Engineer	Civil	District Environment Officer	Throughout
Monitoring	Regular stakeholder meetings and reporting	Site Engineer	Civil	Project Engineer	Throughout
Reporting	Any complaints or incidents to be reported to Site Engineer	All		Project Engineer	Throughout
Corrective Action(s)	Implement corrective measures prior to the recommencement of site works	Civil Works RSESD / EFO		Project Engineer	Throughout

MANAGEMENT OF NOISE AND VIBRATION				
Objective(s)	1. To minimize noise and not to inconvenience the local communities and wildlife adjacent to sites 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.			
Management Strategy	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	
Actions/Control(s)	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	Civil Works / EFO / Community Liaison Officer - CLO	Project Manager	Throughout the project

MANAGEMENT OF NOISE AND VIBRATION					
	<ul style="list-style-type: none"> ii. Work will be done during daytime only 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. iv. Should noise complaints be received, noise monitoring will be undertaken as per grievance management plan 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 				
Performance Indicator(s)	No complaints from lead agencies and other stakeholders on negative impacts from noise and vibration	Site Engineer	Civil	District Environment Officer	Throughout
Monitoring	Regular stakeholder meetings and reporting	Site Engineer	Civil	Project Engineer	Throughout
Reporting	Any complaints or incidents to be reported to Site Engineer	All		Project Engineer	Throughout
Corrective Action(s)	Implement corrective measures prior to the recommencement of site works	Civil Works / EFO		Project Engineer	Throughout

Appendix J: 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 Centers 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 K: Cultural Heritage Management Plan (CHMP)

**Cultural Heritage Management Plan (CHMP) for the Proposed
Echuya 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.

Agency: Department of Museum and Monuments - Ministry of Tourism, Wildlife and Antiquities (MTWA)

Issues: Aspects discussed are presented below:

<i>Heritage Impact Assessments</i>	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.
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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.

<i>Chance Finds</i>	There is a given procedure followed under guidance from the Department of Museums and Monuments for handling chance finds.
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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.

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.

Currently, DMM has developed 15 management plans out of the 650 sites in its database.

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.

	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>

Agency: Ministry of Gender, Labour and Social Development (Department of Culture and Family Affairs)

Issues: Aspects discussed are presented below:

Conservation of Culture	<ul style="list-style-type: none"> • The department conserves the cultural values and heritages through encouraging the traditional institutions to protect and preserve the culture. • The cultural sites are divided into two depending on the agencies who take the upper hand in conserving and preserving the heritage • 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. • 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. • 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. • 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. • 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.
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"> • Bark cloth making; • Male cleansing ceremony in Lango • The Madi bola in Moyo • The Mpaako naming in Tooro • Bigwala in Busoga (Blowing of the local flute)
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"> • Performing Arts (Music, dance, song writing, music publishing, comedy, drama and theatre) • Audio, Visual and interactive media (Film and video, TV cinema and Radio drama) • Books and press (Books, Newspapers and magazines, printed matter libraries which include virtual, book fairs) • Design and creative services (Fashion, graphics, interior design) • Visual Arts and Crafts (Crafts, paintings, sculpture, photography and weaving) • Cultural and Natural heritage.
<p>Protection of community rights from internal and external influence</p>	<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"> • National parenting guidelines • The Ethical values • The child policy
<p>Challenges</p>	<p>Uganda's cultural sector is restrained by a multitude of factors and challenges including;</p> <ul style="list-style-type: none"> • 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. • 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. • Addressing poor coordination within various Ministries that are in the cultural heritage sector: This makes work difficult because each ministry has a different framework.

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.

Receptor	<ol style="list-style-type: none"> 1. Cultural institutions 2. Buried culture sites and artefacts 3. Traditional customs and ceremonies 4. Performing arts and literature 5. History and folklore 6. Local languages
Positive	<ul style="list-style-type: none"> • Overall improvement in addressing and managing cultural heritage within and around the Project area • Improved site-specific management of identified cultural heritage sites • Installation of cultural heritage protocols is improvement over existing ad-hoc approach • Enhanced and focused management of local traditional festivals
Negative	<ol style="list-style-type: none"> 1. Risk of unearthing and potentially damaging culturally sensitive sites or objects during the construction phase 2. Cultural appropriation and misrepresentation 3. Loss of cultural identity

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 Aol. 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 Manger.

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"> 1. Ensuring the MTWA’s Chance Find Procedure (CFP) is followed in the event of a discovery. 2. Reporting all chance finds to the Project Manager. 3. Ensuring the initial protection of a chance find location. 4. Ensuring that all workers are familiar with this CHMP through induction training and other training provided.
Environmental and Social Manager	<ol style="list-style-type: none"> 1. Ensure Project compliance with the Project Standards and other requirements set out in this Plan. 2. Ensuring activities do not disturb cultural heritage sites without appropriate approvals. 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. 4. Facilitate access on site to the cultural heritage specialists in charge of assessing the presence of cultural heritage values on site. 5. Coordinate interfaces with local government authorities and external stakeholders. 6. Liaising with the relevant department of the MICT and relevant stakeholders in the event of a chance find. 7. Ensure all areas have been given clearance by local government authorities regarding the presence of possible cultural heritage artefacts. 8. Ensure the Chance Finds Procedure is implemented when an unknown cultural heritage value is discovered. 9. Responsible for reviewing and updating of the CHMP, as required. 10. Conduct engagement in relation to the relocation of cultural heritage. 11. Monitor the grievance mechanism and assist in responding to concerns relating to cultural heritage. 12. Provide training and guidance to the workforce as needed to facilitate awareness and implementation of the CHMP. 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. 14. Conducting toolbox talks during construction to ensure that workers will be alert to any signs of past cultural activity in the area.
EPC Contractor Environmental and Social Manager	<ol style="list-style-type: none"> 1. Support implementation of the CHMP and ensure the Chance Finds 2. Procedure is implemented. 3. Provide assistance and advice on site to fulfil the requirements of the 4. CHMP, assess data from inspections, monitoring and reporting, and 5. provide project-wide advice to ensure a consistent approach and outcomes are achieved.

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	<p>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.</p>	<ul style="list-style-type: none"> • More intense/hotter dry seasons • Changing seasonality 	Landscaping and existing vegetation	<p>Expected Impacts:</p> <ul style="list-style-type: none"> • 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. • 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. • Development of Invasive species around the VIC • Increased mortality of young seedlings <p>Empirical data:</p> <ul style="list-style-type: none"> • Regular intense heat can cause lethal damage to plants, increase evapo-transpiration, wilting, changes of composition of vegetation and disruption of photosynthesis • Temperatures of 30°C to 35°C promote growth of plants; concentration of CO₂ is increased; higher concentrations of CO₂ may reduce transpiration (i.e. water loss) as plants reduce their stomatal apertures. • Rate of temperature increase: 0.61°C per decade.

				<ul style="list-style-type: none"> • Warmest years to come after: 2019, 2017, 2016, 2021 (in order)
		<ul style="list-style-type: none"> • More intense heat • Changing Seasonality 	Building structure	<p>Expected impacts:</p> <ul style="list-style-type: none"> • Damage of the building envelope may alter the indoor thermal comfort, air quality and energy efficiency of the VIC building. • 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. • Damage or destruction of the VIC building, facilities and equipment as well as disrupting the access, communication, power and water supply of the center. • Reputational damage to the Central Forest Reserve and NFA • Additional investments required to manage increased risk of environmental damage, injuries and deaths due to failure of infrastructure assets. • 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. <p>Empirical Data:</p> <ul style="list-style-type: none"> • Regular heat intensity negatively affects the construction elements such as the bricks through the formation of thermal cracks • Intensive heat causes warping and breaking of the Eucalyptus logs, expansion and contraction of steel members which leads to deteriorate of the structure • Warmer temperatures can increase the geographic spread of where vectors – like mosquitoes and ticks – can survive and breed. • Droughts can also support breeding by forming pools of standing water from previously flowing water

				<ul style="list-style-type: none"> Droughts cause weathering of plants that would otherwise provide for wind breaking. This exposes the structure to wind load
		<ul style="list-style-type: none"> Drier intense season Changing Seasonality 	Utilities	<p>Expected Impact:</p> <ul style="list-style-type: none"> Reduced efficiency of solar panels which may induce over reliance on fossil fuels 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. <p>Empirical Data:</p> <ul style="list-style-type: none"> 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. 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
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"> Flooding Inundation Less rainfall 	Landscaping and existing vegetation	<p>Expected impact:</p> <ul style="list-style-type: none"> 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 <p>Empirical data:</p> <ul style="list-style-type: none"> 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.

				<ul style="list-style-type: none"> • 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.
		Flooding	Building structure	<p>Expected Impacted:</p> <ul style="list-style-type: none"> • 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. • Pests and vector infestations <p>Empirical data:</p> <ul style="list-style-type: none"> • Increased rainfall can increase the amount of standing water, creating more breeding areas for many vectors. • Water that reaches the structural members initiates decay and corrosion. • 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 • If the building basement is more prone to water logging, there are more chances of water logging in the foundation base • Ground water level is raised in the year if long rainy season takes place.
		<ul style="list-style-type: none"> • More intense dry seasons • Changing seasonality <p>Decreasing water table</p>	Utilities	<p>Expected Impact:</p> <ul style="list-style-type: none"> • Flooding can also disrupt the access and operation of the center, affecting its visitors and staff. • 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

				<ul style="list-style-type: none"> 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 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 <p>Empirical data:</p> <ul style="list-style-type: none"> Rainfall patterns have changed where excessive rainfall occurs periodically in July and August rather than previous uniform rainfall
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"> More intense dry season Change seasonality Increase water vapor in the air 	Landscaping and existing vegetation	<p>Expected Impact:</p> <ul style="list-style-type: none"> Growth of small plants is affected, may suffer from greater exposure due to ground fog Reduction in the plant cover <p>Empirical data:</p> <ul style="list-style-type: none"> 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
		<ul style="list-style-type: none"> Changing seasonality Drying up of water levels in tube wells 	Building structure	<p>Expected impact:</p> <ul style="list-style-type: none"> 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 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 <p>Empirical data:</p>

				<ul style="list-style-type: none"> 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.
		More intense dry season	Utilities	<p>Expected Impact:</p> <ul style="list-style-type: none"> 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 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 <p>Empirical data:</p> <ul style="list-style-type: none"> It is assumed that CO₂-induced warming will create a substantial increase in atmospheric water vapor. Water vapor is a much more potent greenhouse gas than CO₂, so substantial increases in atmospheric water vapor can certainly cause significant warming 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
Wind		Windstorms	Landscaping and existing vegetation	<p>Expected Impacts:</p> <ul style="list-style-type: none"> Loss of vegetation at the site <p>Empirical data:</p> <ul style="list-style-type: none"> Trees provide a valuable shelterbelt that provides protection from the wind. The shelterbelt controls wind

				<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"> • Wind is also an important factor in dispersing seed of some tree species
		Windstorms	Building structure	<p>Expected Impacts:</p> <ul style="list-style-type: none"> • 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. • Increased stress and fatigue on the electrical and mechanical equipment and components in the center, due to exposure to wind vibrations and fluctuations
				<p>Empirical data:</p> <ul style="list-style-type: none"> • 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 • Wind is also an important factor in dispersing seed of some tree species

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"> • Negative impacts of forest quality, quantity and diversity. • Policy and procedure constraints that hinder forest management and sustainable forest use. 	<ul style="list-style-type: none"> • Planting of indigenous species • Promoting indigenous tree species rather than exotics • Fire lines
		Shortage water		
		Decreased productivity of forest- inadequate availability of firewood, fodder and timber		

			<ul style="list-style-type: none"> Disappearance of some useful fodder tree species from locality 	<ul style="list-style-type: none"> Abundant local knowledge on characteristics of indigenous species and multiple benefits provided
	Building structure	Increased indoor temperatures	<ul style="list-style-type: none"> Impact on structural integrity Decrease on the demand and behavior of visitors reducing on the revenue 	<ul style="list-style-type: none"> Installation of Air conditioner The building should adopt more sustainable and renewable energy resources. It should use more eco-friendly and durable materials
		Increased infestation of pests and vectors		
		Emission of Greenhouse gases		
	Utilities	Decreased water levels	<ul style="list-style-type: none"> Damage or destruction of the VIC building, facilities and equipment as well as disrupting the access, communication, power and water supply of the center. 	<ul style="list-style-type: none"> Selecting resilient and diverse plant species, using water-efficient and soil-conserving practices, and frequent monitoring.
		Increased water stress.		
Decreased aquatic biodiversity and total numbers				
(Precipitation) Drought (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"> Less predictable and negatively impacted fruiting and other cycles in forest trees 	<ul style="list-style-type: none"> Silvicultural practices to create space for regeneration and proper aeration Planting of broadleaved fodder tree species Plant deeper rooted and hardy indigenous tree species Ensure mixed planting of tree species to enhance biodiversity – reduce initial plantation species like eucalyptus
		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"> Decrease on the demand and behavior of visitors reducing on the revenue 	<ul style="list-style-type: none"> Installation of Air conditioner Fumigating around the building to keep vectors and pests away
		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"> Damage or destruction of the VIC building, facilities and equipment as well as disrupting the access, communication, power and water supply of the center. 	<ul style="list-style-type: none"> 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. Developing alternative or backup water sources, such as water recycling.
		Decreasing water levels		

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"> Negative impacts of forest quality, quantity and diversity. Policy and procedure constraints that hinder forest management and sustainable forest use. Disappearance of some useful fodder tree species from locality 	<ul style="list-style-type: none"> Planting diverse indigenous species Promoting indigenous tree species rather than exotics
		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"> Using energy-efficient and renewable energy solutions, such as installing insulation, double-glazed windows, LED lighting, solar panels, and battery storage. Implementing heat stress prevention and management measures, such as providing adequate ventilation, hydration, shade, and rest for the visitors and staff
		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"> Decreasing indigenous useful species. More infestation by insects and pests. Damage of forest areas 	<ul style="list-style-type: none"> Vegetative check-dam, bioengineering and concrete check-dam. Silvicultural practices to create space for regeneration and proper aeration Indigenous fodder tree species
		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"> Impact on structural integrity 	<ul style="list-style-type: none"> Incorporating flood-proofing measures, such as elevating the building above the expected flood level, installing flood barriers or valves, waterproofing the walls and floors,

	Utilities	Increased water table level	Pollution of water sources	<ul style="list-style-type: none"> Improving water quality monitoring and management, such as installing sensors, filters, or disinfection systems
		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:

Response, Corrective Action, and Resolution/Content of Verbal Response

Verbal Response Delivered

Date
 By whom?

Grievance Resolved?

- Yes, Acknowledgement by Complainant
- No, Complainant's Further Statement if any

Step 3: Grievance Forwarded to EHS Management Team

Grievance Forwarded

Date

By whom?

Grievance Forwarded

Date

By whom?

Further Appropriate Actions:

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

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:

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