

REPUBLIC OF UGANDA MINISTRY OF WATER AND ENVIRONMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT (IWMDP)



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED CONSTRUCTION OF NYAMUGASANI WATER SUPPLY AND SANITATION SYSTEM IN KASESE DISTRICT, UGANDA

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| | |



ABBREVIATIONS

| AIDS | Acquired Immune Deficiency Syndrome |
|--------------|---|
| BOD | Biochemical Oxygen Demand |
| BoQs | Bill of Quantities |
| BTS | Bright Technical Services |
| CAO | Chief Administrative Officer |
| CBOs | Community Based Organizations |
| CDO | Community Development Officer |
| CFP | Chance Find Procedure |
| CGV | Chief Government Valuer |
| CMP | Construction Management Plan |
| CO | Carbon Monoxide |
| COD | Chemical Oxygen Demand |
| dBA | Decibels |
| DCDO | District Community Development Officer |
| DED | District Environment Office |
| DMM | Directorate of Museums and Monuments |
| DNRO | District Natural Resources Office |
| DO | Dissolved Oxygen |
| DWD | Dissolved Oxygen Directorate of Water Development |
| DWD | Directorate of Water Development Directorate of Water Resources Management |
| | - |
| EAC | East African Community |
| EHS EHSGs | Environment, Health and Safety |
| EIA | Environment, Health and Safety Guidelines |
| | Environment Impact Assessment |
| EMMP | Environmental Management and Monitoring Plan |
| EPB ESIA | Environment Project Brief |
| ESIS | Environmental and Social Impact Assessment |
| | Environmental and Social Impact Statement |
| ESMMP | Environmental and Social Management and Monitoring Plan |
| ESMP | Environmental and Social Management Plan |
| ESSs | Environment and Social Standards |
| FGDs | Focus Group Discussions |
| Fls | Financial Intermediaries |
| GBV | Gender Based Violence |
| GC | Grievance Committee |
| GFS | Gravity Flow Scheme |
| GIIP | Good International Industry Practice |
| GIS | Geographical Information System |
| GoU | Government of Uganda |
| GRC | Grievance Redress Committee |
| GRM | Grievance Redress Mechanism |
| HIV | Human Immuno deficiency Virus |
| HWFs | Hand Washing Facilities |
| ICRs | Implementation Completion Reports |
| IEC | Information Education and Communication |
| IFC | International Finance Corporation |
| ILO | International Labour Organization |
| IPF | Investment Project Financing |
| ISRs | Implementation Supervision Reports |
| | |

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| IUCN | International Union for Conservation of Nature |
|-------------------------|---|
| IWMDP | Integrated Water Management and Development Project |
| KDLG | Kasese District Local Government |
| KII | Key Informant Interview |
| Km | Kilometre |
| LAeq | Average Noise Level |
| LA _{MIN} | Lowest Noise Level |
| LA _{MAX} | Highest Noise Level |
| LC | Local Council |
| MoGLSD | Ministry of Gender, Labour and Social Development |
| MoLHUD | |
| MWE | Ministry of Water and Environment |
| | Third National Development Plan |
| NEA | National Environment Act |
| NFMA | National Environment Management Authority |
| NES | National Environment Statute |
| NGOs | |
| NGOS NO ₂ | Non-Government Organizations Nitrogen Dioxide |
| - | 5 |
| NO _x | Nitrogen Oxides |
| NSSF | National Social Security Fund |
| NWIS | National Wetland Information System |
| NWSC | National Water and Sewerage Corporation |
| NWSS | Nyamugasani Water Supply System |
| OPs | Operational Procedures |
| OSH | Occupational Safety and Health |
| 0&M | Operation and Maintenance |
| (PAPs | Project Affected Persons |
| – PAYE | Pay As You Earn |
| PCDP | Public Consultation and Disclosure Plan |
| PCRs | Physical Cultural Resources |
| PMT | Project Management Team |
| PPE | Personal Protective Equipment |
| PWDs | Person With Disabilities |
| RAP | Resettlement Action Plan |
| RGC | Rural Growth Centre |
| RWSRCs | Rural Water and Sanitation Regional Centres |
| SDGs | Sustainable Development Goals |
| SEHS | Social Economic and Health Survey |
| STDs | Sexually Transmitted Diseases |
| STIs | Sexually Transmitted Infections |
| S/C | Sub-County |
| SOx | Sulfur Oxides |
| TN | Total Nitrogen |
| TOC | Total Organic Carbon |
| ToR | Terms of Reference |
| TP | Total Phosphates |
| TSS | Total Suspended Solids |
| UAs | Umbrella Authorities |
| UBOS | Uganda Bureau of Statistics |
| UGX | Uganda Shillings |
| UN | United Nation |
| UNBS | Uganda National Bureau of Standards |
| URA | Uganda Revenue Authority |
| | 5 |

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| UWSD | Urban Water and Sewerage Department |
|------|-------------------------------------|
| VAT | Value Added Tax |
| VES | Visual Encounter Survey |
| VIP | Ventilated Improved Pit latrines |
| VOCs | Volatile Organic Compounds |
| WB | World Bank |
| WHO | World Health Organization |
| WHT | Withholding Tax |
| WMD | Wetland Management Department |
| WMZ | Water Management Zone |
| WSS | Water Supply System |
| WTP | Water Treatment Plant |

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ESIA TEAM COMPOSITION

Table 1 presents the composition of the Environmental and Social Impact Assessment (ESIA) team that undertook the ESIA for the proposed Nyamugasani Water Supply and Sanitation System (NWSSS) in accordance with the provisions of the *National Environmental Act No. 5 of 2019* of the Laws of Uganda, the *Environmental and Social Impact Assessment Regulations (2020)* and the *National Environmental (Conduct and Certification of Environmental Practitioners) Regulations (2003)*.

| | Sed ESIA realit Composition | |
|--|--------------------------------|------------------|
| Name of Key Specialists | Assigned Position | Signature |
| Mr. Pius Kahangirwe, MSc. | Team Leader / | |
| NEMA Certified Environmental Impact | Environmental and Natural | |
| Assessor (CC/EIA/159/22) – Team Leader | Resources Management | |
| | Specialist | |
| Dr. Denis Byamukama, PhD. | | |
| NEMA Certified Environmental Impact | Water Quality and Waste | |
| Assessor (CC/EIA/073/22) – Team Leader | Management Specialist | |
| Mr. Andrew Nkambo, BSc. | | |
| NEMA Certified Environmental Practitioner | Plant Ecologist | |
| (CC/EIA/273/22) – Team Member | | |
| | I | |
| Contributing Specialists | | |
| Dr. Eng. Alex Katukiza | Overall Team Leader for Proje | ect Coordination |
| Eng. Kenneth Musabe | Water and Wastewater Expert | |
| Ms. Esther Nassonko Kavuma | Sociologist | |
| Dr. Philip Nyenje | Hydrologist | |
| Mr. Samuel Kasozi | Hydro geologist | |
| Ms. Sheila Akatukunda | Faunal Studies | |
| Ms. Hamidah Namatovu | Occupational Health and Safety | |
| Mr. Kibirango Moses | GIS Expert | |
| Ms. Jackline Abitegeka | Environmentalist | |

Table 1: Proposed ESIA Team Composition

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EXECUTIVE SUMMARY

The Government of Uganda through the Ministry of Water and Environment (MWE) secured financing from the International Development Association (The World Bank) to implement the Integrated Water Management and Development Project (IWMDP). The IWMDP is being executed by the Ministry of Water and Environment and National Water and Sewerage Corporation (MWE). Under the project, MWE has allocated funds for implementation of Nyamugasani Water Supply and Sanitation System (NWSSS) in Kasese District. The investment cost for the Water Supply and Sanitation System is approximated at **UGX 30,000,000,000 (Thirty Billion Shillings Only).** Nyamugasani WSS is located in seven Sub Counties of Kyondo, Muhokya, Munkunyu, Kisinga, Kyarumba, Lake Katwe and Nyakatonzi in Kasese District. The Nyamugasani Water Supply and Sanitation project area is located in Kasese District between latitudes 00 12' 21" S and 00 19' 05" N and longitudes 290 41' 56" E and 300 15' 51" E in Western Uganda. It is accessible by approximately 390km of tarmac road from Kampala via Fort Portal town.

Adequate safe water is a pre-requisite for a healthy society, which in turn, among other factors, makes it feasible for the majority of the population to engage in meaningful socio-economic activities that would increase household income and thereby reduce poverty. In Uganda, most of the rural areas and upcoming small towns access water from point water sources like boreholes, protected springs and shallow wells. These point water sources are in many cases characterized by low level of service, poor functionality and poor water quality in addition to diminishing water resources. The project targets to serve cover parts of Kyarumba, Kyondo, Kisinga and L. Katwe Sub Counties with an estimated population of 131,390 inhabitants and 25,247 households. The total population of the schools in the four Sub Counties in phase I is 30,598 children. It is anticipated that the project will benefit 44,531 people with portable water and 29,280 people with basic sanitation and hygiene improvement messages by end of the project in 2025 (Detailed Engineering Design Report, 2022). NWSSS is envisaged to bring an end to water stress and overreliance on a few low yielding boreholes within the seven Sub Counties and neighbouring community.

The project area has no central forest reserve but endowed with Rwenzori Mountain National Park (RMNP) with an area of 118 KM² lying inside Nyamugasani catchment out of the 995 KM² of the total protected reserve area. However, all the project components including both intake points and the transmission and distribution lines are outside of the Rwenzori Mountain National Park. The only relationship between the project and Rwenzori Mountain National Park is that both River Nyamugasani and Nyamuruseghe originate from this park. Both intakes on Nyamugasani and Nyamuruseghe are over 5 km away from the park boundaries. There are areas where the water distribution network will run close (about 1 Km away) to Queen Elizabeth National Park (QENP), because there are communities living near the park boundaries; however, no pipelines will pass through the national park.

Regarding existing water sources, the majority of the population in the project area (59%) use open water sources for all their water needs according to the survey conducted for this study. Within the project affected households, the commonly used sources of water for domestic use include Lake/River 674 (73.3%) followed by Tap water 145 (15.8%), ponds/dams 35 (3.8%). About 92% of interviewed households reported owning a toilet facility. The general toilet facilities in the study area are pit latrines built in mud and cement walls. Mud pit latrines (76.7%) were the most dominant, followed by the cemented pit latrines (23.2%) and a limited number of flush toilets (0.2%).

Although women are responsible for over 80% of the agricultural production in Kasese District, they own less than 7% of all productive land on which this production takes place. The level of illiteracy

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among adult females in the district is high (39.6%) as compared to that of adult males (23%); in the project area, the corresponding illiteracy levels were 43.9% and 25.4% which are higher than the district average (UBOS, 2014). This has a significant impact on male and female engagement in a number of socio-economic services in the district. With these levels, it means women shall be marginalised in decision making fora. Details of the baseline studies are enlisted in Chapter 5 of this report. The proposed project infrastructure and facilities include the following components:

- Two Intake weirs and chambers (Possibly under river bed chamber) on R. Nyamugasani and R. Nyamuruseghe.
- Water Treatment Plant 5588 m3/day ultimately
- Transmission pipeline network 82,912 km
- Distribution Mains 168 km
- Break pressure tanks 36 No.
- Construction of the diversion channel with a sluice gate to regulate the environmental flows even after construction
- Construction of the upstream coffer dams to obstruct the flows and direct to the diversion channel
- Construction of downstream coffer dam to obstruct backwash as flow join the river channel
- River re-routing
- Construction of boulder tap and the weir will then follow
- Closing/opening of sluice gate as required post construction to facilitate environmental flow and licensing as may be required
- 11no. public/institutional sanitation facilities.

The proposed abstraction and intake works for the raw water of Nyamugasani WSS will be from Rivers Nyamugasani & Nyamuruseghe and will have the following components:

- Intake 1: On the surface of the river, introduction of a grading to avoid the boulders and a draw off pipe at the base of the River Nyamugasani
 - Intake 2: An Ogee type weir with upstream boulder trap taking into consideration necking location with upstream boulder trap on River Nyamuruseghe.

During the construction, river flows along the rivers Nyamugasani and Nyamuruseghe will need to be rerouted to allow for construction of the weir and the intake chamber. Consequently, open diversion channels have been provided, which were design for 25-year flood annual recurrence interval (ARI). Further, upstream and downstream coffer dams have been provided at each of these sites to prevent back flow and minimise the need of dewatering during construction using pumps thus, the proposed construction sequencing will be followed.

- Construction of the diversion channel with a sluice gate to regulate the environmental flows even after construction
- Construction of the upstream coffer dams to obstruct the flows and direct to the diversion channel
- Construction of downstream coffer dam to obstruct backwash as flow join the river channel
- River re-routing
- Construction of boulder tap and the weir will then follow
- Closing/opening of sluice gate as required post construction to facilitate environmental flow and licensing as may be required

The designed treatment plant will comprise of a full conventional treatment approach incorporating aeration, coagulation and flocculation, plain sedimentation, filtration and disinfection. Horizontal flow sedimentation is selected for settling because of its ability to handle turbidity shock loads and high

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turbidity that is typical of raw water from both Nyamugasani and Nyamureseghe Rivers during rains. The Treatment Works have been designed to have 2No. parallel streams with two (2No.) flocculation basins, 4No. sedimentation tanks, 4 No. rapid sand filters and a clear water tank fitted with baffle walls to allow for plug flow hence maintaining the calcium hypochlorite concentration. Typically, calcium hypochlorite is deemed superior due to its residual chlorine content that constantly disinfects the pipe network up to the end user.

The units provided are as follows: -

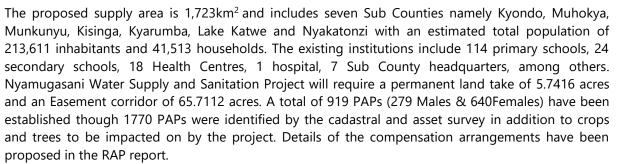
- i. Inlet Chambers and Inlet Channels. The channel incorporates a thin plate rectangular weir plate for flow Measurement of the raw water;
- ii. Flocculation preceded by Chemical Dosing of Alum;
- iii. Sedimentation Horizontal Flow Tanks, incorporating Lamella settlers towards the end of the tank;
- iv. Filtration Rapid Gravity Sand Filters;
- v. Disinfection by Chlorination;
- vi. Backwashing with air followed by water;
- vii. Administration / Chemical Dosing Building, Pump-house and Chlorine Storage Building, Staff Housing, etc. and other Ancillary Works.

| Project Component | Latitude | Longitude |
|---------------------------------------|-----------|-----------|
| Nyamusagani Intake | 0.149442 | 29.927595 |
| Nyamuruseghe Intake | 0.149926 | 29.929420 |
| Water Treatment Plant | 0.147326 | 29.929310 |
| Muhokya Reservoir | 0.106350 | 30.024340 |
| Kinyabakazi - Kahendero Reservoir | 0.071130 | 30.02782 |
| Kikorongo Reservoir | 0.010590 | 29.96024 |
| Kabila-Kisinga Reservoir, 0+000 | 0.09544 | 29.8903 |
| Kabila-Kisinga Reservoir, 1+620 | 0.08319 | 29.89692 |
| New Route Reservoir 1 | 0.07783 | 29.95504 |
| New Route Reservoir 2 | 0.05031 | 29.96522 |
| Mughete Kabirizi Reservoir | 0.1128223 | 29.94811 |
| Kaberere Musasa Reservoir | 0.132666 | 29.939855 |
| WTP to Kyarumba Reservoir | 0.140334 | 29.934311 |
| Kyondo Reservoir | 0.075475 | 29.929098 |
| Kitsutsu Mukunyu Reservoir | 0.019828 | 29.817830 |
| Mukunyu Kanyampanga | | |
| Reservoir at Subcounty Headquarters | 0.023990 | 29.841967 |
| Mukunyu Kanyampanga Reservoir, 0+ 900 | 0.026360 | 29.836820 |

| Table 2: Summarv | of the location |) of the different | Project Components |
|------------------|-----------------|--------------------|---------------------|
| Tuble L. Summary | of the tocation | of the adjetent | i roject component. |

Chapter 3 of this report gives details of the proposed Nyamugasani WSS project description.

In compliance with the National Environment Act 2019 and the National Environment (Environmental and Social Assessment) Regulations 2020, MWE undertook an Environmental and Social Impact Assessment (ESIA) and this report presents the findings of an ESIA that has been undertaken at the proposed project sites. The ESIA study has been conducted in line with World Bank Safeguard Policies. In compliance with the Bank policies, an Environmental and Social Management Framework was prepared and disclosed during Project preparation; and the following safeguard policies were triggered: Various national policies and laws have been reviewed in relation to the proposed project activities e.g. construction and operational requirements, environmental quality, land use, public health, occupational safety, labour standards and other legal obligations.



A total of 150 households were surveyed and identified as persons / institutions likely to be affected by the 82.912Km transmission line, distribution lines of about 165.282Km length in total, Reservoirs and water source site. 22 PAPs of the 150 PAPs are unknown and people with multiple entries. A baseline survey was conducted on 55 PAPs which is 36.7% of the people affected. 98.2% of the survey being head of their households. The average size of the household of the surveyed population being 3.2 and a single household with the highest number being 14 people under the same roof. Perspectives of both genders were captured and represented where majority of the respondents were male at 89.1% and with female at 10.9% (Socio-economic household surveys November 2022). The contractor is expected to employ about 100 workers on the site both skilled and unskilled. However, this number may keep on fluctuating depending on the need and availability of resources.

A comprehensive stakeholder engagement was carried out during ESIA specifically with Kasese District Local Government Officials, Sub-County Officials, Local Community Representatives and Community members among others. The main findings from the stakeholder engagements were largely categorized into two parts i.e. the anticipated impacts (both negative and positive) and general concerns on the project. It is anticipated that the establishment of the water scheme is expected to have the following benefits:

| Ref | Anticipated Environment & | Enhancement Measures | | | |
|-----|---|--|--|--|--|
| No. | Social positive Impacts | | | | |
| CP1 | Employment opportunities | ✓ The contractor should involve local leaders in recruitment process to ensure full and fair participation of local communities. | | | |
| CP2 | Income to material/ equipment suppliers and contractors | ✓ Earth materials needed for construction, for example, aggregate (stones and sand) will be obtained from quarry operations | | | |
| CP3 | Acquisition/improvement of skills | ✓ The Local leaders will play a vital role in screening and recommending those seeking for employment | | | |
| CP4 | Increased Public Revenue / Taxes | ✓ The contractor should pay all the taxes including VAT, PAYE and NSSF of the workers | | | |
| CP5 | Impacts on Local Capacity | ✓ Ensure Co-operation between international suppliers of specialized equipment and contractors and local contractors and sub- contractors and companies for transfer of skills | | | |
| CP6 | Boost to the Local Economy | Provide direct employment opportunities to the workforce thus contributing towards alleviation of poverty and income generation for the local community; Stimulate business activities related to contracting works for local entrepreneurs (sub-contractors); Provide trading opportunities for local communities and other small enterprises in the area; Provide opportunities for provision of basic and other services for the contractors and immediate community. The project will consider employment of locals | | | |
| CP7 | Capacity Building | ✓ To maximize capacity building for local communities, programs and technical training courses as well as on-the- job training will be | | | |

Table 3: Summary of the anticipated positive Environment and Social Impacts and their enhancement measures

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| | | provided in specific skills areas for suitable candidates from local communities to enhance minimum levels of education and the possibility of being employed during operational phase |
|-----|--|--|
| OP1 | Improved health status of households in the project communities | ✓ Educate users on the proper use, regular cleaning and effective maintenance of both the household and public facilities |
| OP2 | Educational enrolment and attendance | ✓ Make the water tariffs affordable to everyone so that children, especially the girl child to regularly and promptly attend school, while mothers will get more time to prepare their children for school. |
| OP3 | Acquisition of new skills | ✓ Where the required skills are available locally, the local people should be given first priority commensurate to their level of training |
| OP4 | Improvement in household economic status | ✓ Water supply should be set taking into consideration the different levels of users. The users should also be educated to avoid wasteful use of the resources |
| OP5 | Employment opportunities | ✓ Wherever feasible, local qualified people will be considered for job opportunities. Adequate occupational health and safety standards should be provided to ensure the work environment is conducive. |
| OP6 | Promotion of gender equality and empowerment of women and the girl child | Make the water tariffs affordable to everyone so that women and girls are freed of the burden of having to spend a lot of their time collecting and carrying water almost on a daily basis often from sources distant from their houses. |
| OP7 | Combat HIV/AIDS, malaria, and other diseases | ✓ Make the water tariffs affordable to everyone so that vector borne diseases related to water sources (such as guinea worms, Onchocerciasis, and schistosomiasis) and diseases related to excreta contaminated water and poor hygiene (cholera, typhoid, and diarrhoeal diseases) are reduced due to the increased provision of safe and clean water |

Further still, the project will also address the focal area of access to clean water as stipulated under the Uganda Vision 2040 and the National Development Plan III (NDP III). The project will also contribute towards achieving Sustainable Development Goals (SDG) *(specifically SDG 6 on clean water and sanitation)*.

However, some concerns were raised by various stakeholders as regards to the project and these include:

- Poor waste management practices at construction sites
- Destruction of existing vegetation especially when establishing the intake and trenching
- Soil erosion due to loss of vegetation especially at the water abstraction point
- Land degradation
- Dust and vehicle emissions
- Increase in noise and injuries on duty
- Increased spread of communicable disease associated with construction labour
- Destruction of crops during the trenching activities along distribution lines.

Anticipated and or identified negative impacts throughout the project phases are summarised below and discussed in detail under Section 8.3 of this ESIA report and these include:

| Ref No. | Anticipated Environment & Social negative Impacts | Mitigation Measures | | | | | | | | | | |
|------------|---|---------------------|--|---------|-----|---------|------|----|------------|-----|--------|----|
| CP1 | Soil Degradation | | | Topsoil | and | subsoil | will | be | stockpiled | for | re-use | in |

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|-------|-----|------------------------|--|
| | | | backfilling and reinstatement; |
| | | | To preserve soil structure: there will be minimum |
| | | | handling of soils; loose tipping of soils, that is, without |
| | | | compaction will employed and temporary spoil heaps |
| | | | will not be higher than 3m; Contractor will avoid use of old equipment or even |
| | | | contractor will avoid use of ord equipment of even |
| | | | damaged equipment that is most likely to have oil |
| | | | leakages thus contaminate the soils;The contractor will be required to develop a waste |
| | | | management plan prior to start of construction activities; |
| | | | Contractor will ensure that equipment is properly |
| | | | maintained and fully functional in accordance with the |
| | | | manufacturer's recommendations; |
| | | | During reinstatement, the trench back-fill material will be |
| | | | compacted to a level similar to the original surrounding |
| | | | soils to avoid subsidence as a consequence of rain water |
| | | | channeling. |
| | | | Recreation of a stable landform that mirrors the pre- |
| | | | disturbed condition as this will minimise the risk of |
| | | | preferential erosion and therefore facilitate natural re- |
| | | | vegetation. |
| | CP2 | Generation of noise | Contractor will ensure that equipment is properly |
| | | | maintained and fully functional in accordance with the |
| | | | manufacturer's recommendations |
| | | | Regular maintenance, monitoring and, where necessary, the use of silencies, equipment will be employed with |
| | | | the use of silencing equipment will be employed with |
| XVIII | | | the aim of reducing noise emissions.The selected contractor will be required to submit |
| | | | detailed information on the noise levels which will be |
| | | | generated by the specific methods and equipment |
| | | | proposed and to identify actions required to minimise |
| | | | the noise impact. |
| | | | Pumps, generators and other mobile equipment will be |
| | | | sited as far as practicable from housing and other noise |
| | | | sensitive locations, work will not be carried out Sunday |
| | | | during service time or hours. |
| | | | During periods of inactivity, equipment will be switched |
| | | | off whenever possible. A limited number of construction |
| | | | activities may have to continue on a 24-hour basis. These |
| | | | include horizontal direction drilling, pipeline cleaning |
| | | | and hydrostatic pressure testing which are relatively low |
| | | | noise activities. The Contractor should provide PPE like ear muffs where |
| | | | The contractor should provide TTE like car mans where |
| | | | levels exceed recommended threshold (85dBA) to all workers on site |
| | CP3 | Improper management | The wastes will be properly segregated and separated to |
| | | of construction wastes | encourage recycling of some useful waste materials, that |
| | | | is, some excavated material can be used as backfills. |
| | | | The contractor and MWE will work hand in hand with the |
| | | | District to facilitate sound waste handling and disposal |
| | | | from the site. All wastes must be taken to the approved |
| | | | dumpsites and proof of safe disposal should be secured. |
| | | | Hazardous wastes such as paints, cement, adhesives will |
| | | | |





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| | | be managed through a third party contractor certified by NEMA to handle hazardous waste. The contractor and MWE should work hand in hand to facilitate sound waste handling and disposal from the site. |
| CP4 | Contamination of Water resources | Equipment, materials and chemicals must not be stored within 30 m of a watercourse bank; Construct a proper drainage system around the site and to the final storm water retention or disposal point to stop direct run off into the nearby land and water courses; All construction equipment will be kept in good operating condition to avoid oil or fuel leakages that might contaminate water resources; Materials like sand and aggregates will be kept in bounded areas to avoid being washed away into water resources by runoff; MWE will ensure the contractor complies with its environmental management policies e.g. the National Environment (Wetlands, River Banks and Lakeshore management regulations, 2000). |
| CP5 | Air Pollution | Travel speeds of construction vehicles along the road especially at trading/ business centres will be controlled using humps and travel speeds will not exceed 30km/h; Trucks will be covered during haulage of construction materials to reduce on spillage of materials; Wherever dust suppression is necessary, water will be sprayed over dusty areas; It will be ensured that all equipment leaving the site, clean up their tires in case they are dirty; Construction work will be undertaken by an experienced and duly registered contractor with a verifiable sense of environmental awareness and responsibility; Workers will be provided with PPE (dust masks, safety googles) and the use of PPE shall be enforced; All construction equipment and trucks will be kept in good operating condition by regular servicing to reduce noise and exhaust emissions; and As part of the bidding processes, contractors will be required to provide their environment management plans that meet mitigation actions proposed in this ESIA |
| CP6 | Occupational Health and Safety Risks for the Workforce | All construction workers will be oriented on safe work practices and guidelines and ensure that they adhere to them. Training will be conducted on how to prevent and manage incidences. This should involve proper handling of electricity, water etc. and sensitization on various modes of escape, conduct and responsibility during such incidences. All must fully be aware and mentally prepared for potential emergency. Quarterly drills will constantly be undertaken or conducted. This will test the response of the involved stakeholders. Such drills will keep them alert and they will become more responsive in the case of incidences. |

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|-----|--------------------|---|
| | | Signage will be used to warn staff and/ or visitors that are not involved in construction activities of dangerous places. |
| | | Personnel will only undertake tasks for which they are |
| | | trained/ qualified. A formal 'permit to work' system will |
| | | be in place and strict instructions will be given for |
| | | operators of equipment. |
| | | Supervision of works will be done quarterly to ensure |
| | | that safety conditions are met while any deviation from |
| | | safety regulations is immediately reclaimed following the |
| | | best practices regarding safety at work equipment. |
| | | Communication line shall be ensured in between workers |
| | | and drivers of heavy equipment. |
| | | Daily Toolbox morning talks will be conducted to inform |
| | | all workers of the anticipated risks from the day's work. |
| | | Evacuation procedures will be developed by the |
| | | contractor to handle emergency situations |
| CP7 | Risks of accidents | Transport safety practices will be adopted with the goal af any stating traffic assidents and minimizing injuries |
| | | of preventing traffic accidents and minimizing injuries suffered by project personnel and the public by: |
| | | employing safe traffic control measures, including road |
| | | signs and flagmen/traffic guides to warn of dangerous |
| | | conditions and children crossings; and setting speed |
| | | limits on all access roads in the project area will be |
| | | 30km/h for light vehicles and 20km/h for heavy vehicles. |
| | | Service ducts installed by the road contractor will be |
| (| | used where applicable to avoid cutting through roads |
| - | | that have just been upgraded. |
| | | All workers, including sub-contractors and casual labour, |
| | | will undergo an environmental, health and safety |
| | | induction before commencing work on site. This will |
| | | include a full briefing on site safety and rules. |
| | | The affected communities will be informed of the timing and duration of the construction activities across access |
| | | roads and any uncertainties or potential for change and |
| | | also sensitised on the dangers of construction sites and |
| | | the need to keep away (community sensitisation). |
| | | Identifying optimum routes from pipe storage areas to |
| | | the ROW to avoid sensitive receptors such as schools |
| | | and hospitals, wherever possible and putting in place |
| | | journey management plans. |
| | | Restrictions on hours of driving (including night time |
| | | restrictions where sensitive receptors may be affected) |
| | | and timing of vehicle movements to avoid busy periods |
| | | in urban areas, particularly the start and end of school |
| | | and the working day Control over routes used by vehicles to avoid |
| | | Control over routes used by vehicles to avoid construction traffic using inappropriate roads and other |
| | | road users gaining access to the pipeline spread and |
| | | access roads. |
| | | Ensuring adequate vehicle maintenance to ensure that |
| | | vehicles do not produce significant emissions and that all |
| | | safety features including brakes, lights etc. are in good |
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| | | condition |
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| CP8 | Landscape, Land Use Impacts and Loss of Structures | Condition The contractor will be required by MWE to develop and implement a Reinstatement Plan. MWE shall ensure that this land and any impacted assets are compensated for in accordance with the provisions of this RAP. Upon payment of cash compensations, PAHs will be given sufficient time to salvage building materials from any lost structures. Reinstatement of the water pipeline will be done in such a way as return the visual integrity of the landscape as closely as possible to its previous condition. In areas where grading of the working width impacts on the local topography, reinstatement will be undertaken in a manner which is generally sympathetic to the existing contours. However, at locations along the route where extensive grading will be required to provide a level working area, it may not be possible to return the topography to its pre-existing form as this may exacerbate erosion risks given the type of soils in these areas and would preclude access to the sewer line for inspection, maintenance or emergency response. Wherever possible the removal of existing mature trees will be avoided, provided that the integrity of the pipeline is not jeopardised. Thus trees to be retained will be marked prior to commencement of works in the relevant sections of the network. |
| CP9 | Social Misdemeanour by Construction Workers | As a contractual obligation, contractors shall be required to have an HIV/AIDS policy and a framework (responsible staff, action plan, etc.) to implement during project execution. A sensitisation programme for the would-be affected local communities will be conducted prior to commencement of and during the project implementation. A code of conduct (appropriate to behaviours in workplace and with respect to relations with local community) will be developed and approved by MWE which will be signed by all workers on the project. Local workers will preferentially be employed, paid directly through their banks and access to bars by workers from outside the project area in the local communities controlled. All construction workers shall be orientated and sensitized about responsible sexual behaviour in project communities |
| CP10 | Loss of Land and displacement of economic activities | Ensure timely and appropriate compensation Take into consideration local community and household preferences. For instance, the landowner is willing to relocate part of his house and underground tank and he is supported by local leaders. PAPs should be given financial literacy on how to use |

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| | CP11 | Conflicts due to influx of immigrant labour | their compensation packages. In-kind compensation can be considered especially for institutional landowners. LGs should be involved in mobilisation and sensitizing PAPs. The Contractor should develop guidelines for behavioural conduct, including penalties for its workers. Workers must be sensitized on proper social behaviour and conduct with regard to community norms prior to starting work. Workers should be sensitized to avoid engaging in sexual relations with underage girls and married women |
|------|------|--|--|
| | CP12 | Risk of violence against children | Employers at both the construction and operation phase should have a strict employment code of conduct. At the induction of employees, the employer should emphasise that molestation of children especially the girl child is punishable by taking the culprit to court. An employer who tries to shield or cover up for the employee caught in the act will equally be prosecuted, according to the penal code. Monitoring school attendance Sensitization in schools Reporting mechanisms in place such as a whistleblowing system |
| xxii | CP13 | Risk of Child Labour | The project implementation team should put a mechanism in place to identify the presence of all persons under the age of 18 and ensure that they are not employed on the project. Put notices on work sites (NO CHILD LABOUR) in order to silence agitations Engage District Community Development Office (DCDO), Gender Officers, Parish Chiefs among others. Monitoring school attendance Sensitization in schools Reporting mechanisms in place such as a whistleblowing system |
| | CP14 | Risk of Gender Based Violence | The Contractor should have a sexual harassment policy and mainstream it to ensure strict adherence to established mechanisms to avoid the emergence of these challenges; MWE should ensure that social safeguards personnel are recruited as part of the project implementation personnel to supervise contractors and to continuously engage communities; Put GBV reporting mechanisms in place; Community sensitization among men and women |
| | CP15 | Increase in HIV/AIDS and STDs | Sensitize workers on proper social behaviour and conduct with regard to community norms, HIV/AIDS and other sexually transmitted diseases. HIV/AIDS policies should be developed at the workplace; Establish and implement Contractors' HIV/AIDS Workplace Policy; Free HIV/AIDS testing, counselling and condom |





| | | distribution be encouraged for both workers, sex workers and local community; The pathways for transmission of HIV/AIDS and STIs are well known, foreseeable and can be mitigated. Social bonds are not readily controlled, and the permanence of HIV/AIDS transmission makes this particular impact of social bonding both negative and also positive. Social bonds leading to lasting marriages and children occur in such situations; early pregnancies and sexual exploitation can also occur |
|-----|---|---|
| OP1 | Occupational Health and Safety Risks | ✓ The channel crossings will be clearly demarcated to indicate the ones that are meant for only pedestrian traffic, those that can be used by bicycles and motorcycles and general traffic. The crossings for only pedestrians should have bollards with reflective strips installed at the ends to strict access to other traffic. ✓ Side rails will be installed along the channel crossings to enhance community safety and minimize the risk of falling into the channels. ✓ Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a heavy downpour. Community sensitization to instill a sense of ownership of the project and project infrastructure so as to encourage community vigilance and hence reduce vandalism or theft of metal work fabrication, such as safety railings. |
| OP2 | Loss of income from Project-related activities | All people taken on to work on this Project will be informed about its duration and phasing beforehand, so that they can plan accordingly. The MWE Supervising Engineers will take note of Consultants, Contractors and sub-contractors that produce quality work, in line with their contracts and industry best practice during the construction phase, and prioritize them for available maintenance work during the life of the Project. Unskilled labourers taken on from the local communities surrounding the project area will be kept on for maintenance works of the channel, where possible. Where feasible, upon discussion with the local area leaders, committees will be selected along the densely populated sections along the channel with the aim of promoting vigilance against garbage. |
| OP3 | Risk of accidents | Side rails will be installed along the river crossings to enhance community safety and minimize the risk of falling into the river. Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a heavy downpour. Community sensitization to instil a sense of ownership of the project and project infrastructure so as to encourage |

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| OP3 0P4 | Air pollution | ✓ The vehicles will be switched off when not in use so as to minimize the release of fugitive emissions. |
|------------|--|--|
| OP4 | | The vehicles and machinery will be regularly serviced and maintained to optimum working conditions to minimize potential emissions. |
| | Disturbance due to noise pollution and vibrations | The Contractors and workers for operation and maintenance should be especially mindful when carrying out construction near sensitive receptors such as business centres. Maintenance activities will be limited to daytime, especially in residential areas to minimize disturbance of residents. Regular care and maintenance of vehicles and equipment must be undertaken to ensure they run smoothly so as to minimize emissions of noise. Project machines and vehicles will be turned off when not in use |
| OP5 | Disturbance due to noise pollution and vibrations | ✓ The Contractors and workers for operation and maintenance should be especially mindful when carrying out construction near sensitive receptors such as business centres. ✓ Maintenance activities will be limited to daytime, especially in residential areas to minimize disturbance of residents. ✓ Regular care and maintenance of vehicles and equipment must be undertaken to ensure they run smoothly so as to minimize emissions of noise. Project machines and vehicles will be turned off when not in use |
| OP6 | Improper waste management | A waste management plan will be developed by the Maintenance Contractors, and approved by MWE to ensure that measures for handling all operation and maintenance waste (dredged material and waste debris) are in place. The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reduce, reuse and recycle Waste transportation vehicles will be covered to avoid spillage or waste getting blown off during haulage. |
| OP7 | Impact on water resources and the receiving habitats | ✓ The quantity and quality of storm water reaching the river must be reduced within the catchment. Implementation of an integrated catchment management plan (ICMP) would be an effective undertaking. ✓ The designed channel corridors need to be protected from encroachment. ✓ The channels must be regularly and adequately maintained – including replacement of damaged lining, vegetation clearing, de-silting, garbage/debris removal and dredging. MWE will closely engage NEMA and WMD in programmes aimed towards protection of natural wetland systems, since the storm water from the drainage channel will have an impact on the downstream receiving bodies. |

EXECUTIVE SUMMARY

| risk of traffic disruption, especially in areas where the |
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| major roads will require re-construction of culvert |
| crossings. Using Appropriate safety signs during |
| construction (e.g. 'Heavy Trucks Turning', 'Road |
| Diverted', 'Half Road Closed', etc.) |

The ESIA findings indicate that majority of the predicted adverse impacts are local in nature as they are limited to the project sites where construction works will be undertaken. The mitigation hierarchy has been used to ensure that Environmental and Social risks and impacts are eliminated and/or minimised. Various enhancement and mitigation measures have been proposed and the developer should ensure that these are implemented such as:

- Maintaining good house-keeping
- Screening unaesthetic aspects from public view including excavations, construction material storage areas, waste storage areas and ablutions, erecting fencing around construction site to act as a screen minimizing the effect of wind in generating dust emissions
- Re-vegetation of all areas of natural vegetation that have been disturbed as a result of construction activities
- Proper waste management in accordance with the National Environment (Waste Management)
- Regulations, 2020 such as continuous monitoring and evaluation of the waste streams from source through to recovery, recycling and disposal
- Containment of storm water especially during rainy season
- Timely compensation of the Project Affected Persons (PAPs)
- As a contractual obligation, contractors shall be required to have an HIV/AIDS policy and a framework (responsible staff, action plan, etc.) to implement during project execution
- Local workers will preferentially be employed and paid directly through their banks
- All construction workers shall be orientated and sensitized about responsible sexual behaviour XXV in project communities., benefits of wearing PPE to reduce accidents and incidents
- Training of community members especially the elderly, child headed households, pregnant women, and people living with HIV/AIDS in good sanitation and hygiene practices shall be conducted within the project area.
- Project workers will be documented, issued work contracts and sign codes of conduct.

Based on the above anticipated benefits and adverse impacts, an Environmental and Social Management Plan (ESMP) has been developed to ensure that environmental and social impacts, risks and liabilities identified are effectively managed during the construction, operation and closure of the proposed project. The ESMP specifies the avoidance, mitigation, adaptation, prevention and management measures to which the developer is committed and shows how the Project will mobilize organizational capacity and resources to account for the factors evaluated in order to implement the proposed measures. Therefore, the proposed project is environmentally and socially feasible for implementation provided the recommended mitigation and monitoring measures are implemented, and the proposed implementation arrangements are upheld.

1 INTRODUCTION

1.1 Project Background

The Water and Environment sector consists of two sub-sectors: (i) the Water Supply and Sanitation (WSS) sub-sector; and (ii) the Environment and Natural Resources (ENR) sub-sector. The WSS sub-sector comprises water resources management, rural water supply and sanitation, urban water supply and sanitation, and water for production. The ENR sub-sector comprises environmental management; management of forests and trees; management of wetlands and aquatic resources; and weather and climate. The Rural Water Supply and Sanitation sub-sector is defined to include all those areas under the jurisdiction of District Local Councils and Rural Growth Centres, but excluding those urban areas governed by Town Boards, Town Councils, Municipalities and Kampala Capital City. In practice this means that rural water supply covers those communities and villages with populations up to 1,500 and Rural Growth Centres (RGCs) with populations between 1,500 and 5,000.

Uganda's Vision 2040 goal is to have 100 percent of the population with access to safe piped water by 2040. The third National Development Plan (NDP III 2020/21-2024/25) targets to increase access to safe water from 65 percent to 79 percent in rural areas by 2025. However, the NDP III planning horizon runs together with the beginning of the Integrated Water Management and Development Project (IWMDP) and hence NDP III targets fall largely within the project period. As of the 2020 Water and Environment Sector Performance Report (MWE 2020), national safe water coverage for rural areas was estimated at 68%. Access to basic rural sanitation increased to 78% in 2019/20 from 77.2% by June 2018/19. The functionality for rural water supplies remained the same (85%) as previous year 2019.

The Project Development Objectives are to improve water supply and sanitation services and strengthen water resources management in project targeted areas. The Project will achieve this PDO through three strategic areas: (i) delivering the necessary water and sanitation infrastructure in targeted areas; (ii) supporting water related institutions (MWE, local government, and service providers) develop and strengthen measures to establish and consolidate operational efficiency and service quality in small towns and rural areas; and (iii) strengthening national and regional capacity to improve IWRM. The Project's implementation approach will consider spatial differences between rural, small towns and urban large towns. It will also ensure that citizen engagement strategy, gender approaches, and sanitation and hygiene campaigns are included to foster behaviour change and ownership within the population. Combined with infrastructure investments to support WSS services, the Project will integrate water source and catchment protection measures, comprehensive sanitation planning and service delivery support to ensure sustainability and increase resilience to climate variability. Sixteen small towns, two rural gravity flow schemes, two large towns, and four refugee hosting districts have been selected to participate in the Projects given their location and opportunity to spatially balance development, unmet water and sanitation demands, contribution to Uganda's economic growth.

In July 2022, the Ministry of Water and Environment (MWE) completed the feasibility Study and detailed design for Nyamugasani Piped Water Supply System (WSS) in Kasese District. The water supply area of the proposed Nyamugasani River is located in Kasese District and proposed supply area is 1,723km² which includes seven Sub Counties namely Kyondo, Muhokya, Munkunyu, Kisinga, Kyarumba, Lake Katwe and Nyakatonzi with an estimated total population of 213,611 inhabitants and 41,513 households. The Nyamugasani Water Supply and Sanitation project area is located in Kasese District between latitudes 00 12' 21" S and 00 19' 05" N and longitudes 290 41' 56" E and 300 15' 51" E in Western Uganda. It is accessible by approximately 390km of tarmac road from Kampala via Fort Portal town.

During the initial design of Nyamugasani water supply system, a draft ESIA was prepared. However, the engineering designs are now being updated to capture and integrate the new changes in conditions and technical scope of the proposed sites and these therefore require the updating of the ESIA and RAP for Nyamugasani water supply system to incorporate and match with the updated engineering designs.

The aim of the project is to improve water and sanitation services in the seven Sub Counties namely Kyondo, Muhokya, Munkunyu, Kisinga, Kyarumba, Lake Katwe and Nyakatonzi in Kasese District with minimal impact on the social aspects of the beneficiary population and the environment.

The focus of the proposed project is the construction of a functional water and sanitation supply system and the proposed activity will be focused on the Nyamugasani water supply and sanitation system.

1.2 Justification of the project

The majority of the population in the project area (59%) use open water sources for all their water needs. The 2015 feasibility study and detailed engineering design for Nyamugasani water supply and sanitation system in Kasese district revealed that 52% of the people in the project area used river/lake sources as the most dominant source of water, 24% of the people used the borehole as a source of water. The main technology options used for water supply improvements in rural areas include deep boreholes (44%), shallow wells (24%), and protected springs (21%). Others include tap stands/kiosks of piped schemes and rainwater harvesting tanks (11%). As of June 2018, the national safe water coverage in rural areas was estimated at 70%. There was no change in coverage from that of June 2017. Out of the 57,974 rural villages in Uganda, 38,183 (66%) of the villages had valid water sources as of June 2018. (MWE, Sector Performance Report 2018). Furthermore, the current water sources are not safe and the quality of the water is poor for drinking and therefore implementation of the project will relieve women from wasting time at water sources school going children will be able to go to

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will relieve women from wasting time at water sources, school going children will be able to go to
 school and the quality of water will be improved hence improving the quality of life among the population.

The current water supply and sanitation situation is undesirable. All the 7 sub-counties have serious problems accessing safe water sources. The majority of families use unprotected water sources due to lack of better options. In addition, these sources are more than 500m from most homesteads. The existing gravity flow systems are not reliable, as most standpipes are without water. This is because the gravity flow schemes are fed from springs, which are limited in yield; most of the infrastructure is over 20 years old, most of the gravity systems were managed using the CBMS model and hence many have been run down due to poor O&M practices.

Related to access is the important aspect of distance to the water source. Fields results reveal that nearly half 45.6% travel between 0-1km to access the water source 33.6% have to travel 1-2km ,10.4% 2-3km,1.6% 3-4km and 7.8% walk over 4km (Feasibility study and detailed engineering design for Nyamugasani water supply and sanitation system, 2015). According to the MWE Water Supply Manual (2019) in rural areas, the distance from 90% of the households to the nearest primary or secondary pipeline should not exceed 1.5km. Therefore, with the proposed new water supply system this will be achieved to reduce the distance travelled by the members of the beneficiary community.

1.3 ESIA Requirements

The proposed development falls under Schedule 5 of the National Environment Act No.5 of 2019 (i.e. Utilization of water resources and water supply). It is in the category of projects requiring mandatory Environmental and Social Impact Assessment (ESIA) before implementation. An Environmental and Social Impact Study is thus required to be submitted to the Authority (NEMA) for review and clearance before construction of the NWSSS.

In accordance with the *National Environmental Act No. 5 of 2019* of the Laws of Uganda and the *Environmental and Social Impact Assessment Regulations (2020)*, the Environmental and Social Impact Study process starts with the scoping exercise that identifies areas and issues that should be included and addressed in the ESIA study process. The issues identified through the scoping process were developed into the Terms of Reference (ToR) that were submitted to NEMA for review so that any other areas and issues deserving attention are identified and included before the ESIA commences. Thus, this ESIA was guided by the scoping process which was approved by NEMA. A copy of the approval letter from NEMA has been attached in Annex 1.

This ESIA report has been prepared following Uganda's and the World Bank's Environmental and Social requirements, sets out to identify potential environmental and social impacts of the proposed Nyamugasani Water Supply and Sanitation Project, with a view of informing the final engineering design and recommending mitigation measures to be implemented during construction and operational phases of the project.

1.4 Objectives and scope of the Study

The main objective is to carry out an ESIA for the proposed construction of NWSSS. Specific objectives include the following:

- To study the baseline environmental conditions of the project areas and their surrounding and to assess how these conditions will be affected by the proposed development.
- To identify and assess the likely impacts (positive and negative) of the proposed project and to recommend feasible measures to avoid, minimize or mitigate the negative impacts.
- To develop an environmental and Social Management Plan/Mitigation plan for the identified negative impacts and an environmental monitoring plan for project implementation.

This ESIA focused on the following scope and or areas/sites for the proposed project components:

- Water abstraction and intake works
- Water treatment works
- Pumping stations (i.e. Raw and treated water pumps at the water treatment works.
- Transmission Pipelines to Muhokya and Kitsusu
- Water tanks (i.e. Kyarumba, Kaberere, Lower Kisinga, Upper Kisinga, Lower Mukunyu, Upper Mukunyu, Kitsutsu, Mughete, Kikorongo, Kinyabakazi, Muhokya)
- Distribution pipelines (i.e. Kyarumba, Kaberere, Lower Kisinga, Upper Kisinga, Lower Mukunyu, Upper Mukunyu, Kitsutsu, Mughete, Kikorongo, Kinyabakazi, Muhokya)

Section 3.2 on project description and design elaborates the details of each of the above mentioned project components assessed under the scope of this ESIA.

The proposed public sanitation facilities at health centres and primary schools do not require an elaboration of the ESIA in reference to the thresholds provided under Schedule 5 of the National Environment Act No.5 of 2019 for sanitation facilities. However, the contractor will prepare the appropriate ESMP as part of the CESMP during the construction of these sanitation facilities.

1.5 Details of Developer and Investment Cost

The project is to be implemented by the Ministry of Water and Environment. The investment cost of the project is approximately Uganda Shillings Twenty- One Billion , only including all taxes (UGX 40,000,000,000.

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The address/contact person of the Developer is presented below:

The Permanent Secretary,

Ministry of Water and Environment

Headquarters, Plot 3-7, Kabalega Crescent, Luzira, P. O. BOX 20026, Kampala, Uganda

1.6 Addressing NEMA Responses to Terms of Reference

| SN | Table 5: Addressing NEMA Response to the To REQUIREMENT | COMMENTS |
|----|---|---|
| 1 | Carry out comprehensive consultations with all relevant stakeholders and Lead Agencies and the persons likely to be affected by the project. The views/concerns of stakeholders consulted should be well documented and appended in the ESIA report. | This was addressed as seen under Chapter Chapter 7 and the Annexs 2 & 3 |
| 2 | Provide comprehensive strategies /compensation and resettlement plans, to cater for the identified project- affected persons, likely to lose property or source of livelihoods, among other aspects. | A RAP study was carried out which identified project- affected persons, likely to lose property or source of livelihoods, among other aspects. |
| 3 | Make use of the revised environmental regulations that are now in force, including the National Environment (Environmental and Social Assessment) Regulations, 2020; among others; and, ensure proper application/reference and citation of the new laws during the conduct of the ESIA and preparation of the ESIA report. | Noted |
| 4 | Include in the ESIA report, clear, well-labelled and legible location/google maps, which also show presence of any sensitive receptors of project impacts within the vicinity of the project areas or sites that will accommodate the project components. Note that the google/ location map(s) will be included in the certificate of approval. | This has been addressed unde Chapters 1& 5 of the Report |
| 5 | Provide concise baseline information/data relating to the project affected areas, and sets of clear coloured photographs showing the current state of the said project area (taken from within the proposed project site and clearly showing the neighbourhoods. | Addressed under Chapter 5 or this report |
| 6 | Carry out baseline analyses of soil, water, and air quality, noise levels, as well as detailed geophysical and geotechnical studies to inform the proposed development, and append to the ESIA report the result of these analyses. | Addressed under Chapter 5 o this report |
| 7 | Provide concise narrative on areas the project will traverse. Preferably in tabulated format – by names of villages, the parishes the villages fall under, sub-counties and town councils where the respective parishes are situated, and counties, respectively. | Addressed under Chapter 3 o this report |
| 8 | Provide in tabulated format the list of main project components and corresponding sets of GPS coordinates indicating the sites that will accommodate those main | Addressed under Chapter 3 o this report |

| | | 1 |
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| | components / structure of the project. | |
| 9 | Provide detailed description of the different activities to be | Addressed under Chapter 3 of |
| | undertaken during construction and operational phases of | this report |
| | the project, and the size of the workforce. | |
| 10 | Provide information on sources of water (whether a river, | Addressed under Chapter 3 of |
| | stream, among others) that will support the water supply | this report |
| | and sanitation system. | |
| 11 | Provide comprehensive evaluation of potential pollution | Addressed under Chapter 8 of |
| | sources, the methods of handling, containment and | this report |
| | disposing of the different kinds of waste, and measures for | |
| | controlling pollution of air, water and land as a result of project activities. | |
| 12 | Provide analyses of alternatives/options, in terms of project | Addressed under Chapter 6 of |
| 12 | design, project location, and the proposed technology | this report |
| | applications, among other aspects | |
| 13 | Provide detailed evaluation of the potential environmental | |
| | impacts and risks associated with the proposed project | |
| | components and activities. | |
| 14 | Evaluate any cumulative impacts that may arise due to | Addressed under Chapter 8 of |
| | implementation of the project in combination with other | this report |
| | ongoing developments in the project affected areas, if any. | |
| 15 | Provide detailed environmental and social management | Addressed under Chapter 9 of |
| | and monitoring plan relating to the identified | this report |
| | environmental impacts including monitoring requirements, | |
| | roles and responsibilities of the developer, regulatory | |
| 10 | agencies and other key stakeholders. | Addressed under Cestien 1 C |
| 16 | Indicate the actual project (investment) cost including copy of the certificate of valuation issued by a certified | Addressed under Section 1.5 and annex 9 |
| | professional valuer/quantity surveyor. | |
| 17 | Provide evidence of payment of the 30% ESIA fees at the | Attached as Annex 10 |
| 17 | time of submission of the ESIA report, in accordance with | |
| | Regulation 49 the National Environment (Environmental | |
| | | |

1.7 Structure of the ESIA report

This Environmental and Social Impact Assessment report is concise and limited to the significant environmental and social issues. It focuses on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used in interpreting the data. The report contains, but not limited to the following major contents:

- 1) Cover Page (Title of the proposed project, Location, Name, Address and information of the developer)
- 2) Table of content
- 3) Declaration by ESIA team and their details
- 4) List of acronyms
- 5) Executive Summary
- 6) Introduction
- 7) Policy, Legal and Administrative/Institutional Framework.
- 8) Description of the Proposed Project.

- 9) Description of methodology and techniques used in the assessment and analyses of project impacts,
- 10) Baseline conditions of the physical, biological and socio-economic environment of the project area, including results of relevant studies and other geophysical and geotechnical studies.
- 11) Description/Assessment of the Environment and social impacts of project activities.
- 12) Analysis of Alternatives.
- 13) Environmental and Social Impacts and Mitigation Measures.
- 14) Chance finds procedure to facilitate the handling of any unknown or known Physical Cultural Resource(s).
- 15) Grievance Redress Mechanism to facilitate the handling of any complaints that may arise during project implementation.
- 16) Environmental and Social Management Plan (ESMP) matrices detailing measures for addressing potential negative environmental and social impacts of the project. In addition, the ESMP should clearly identify institutional arrangement, roles, responsibilities, implementation schedules and costs in addressing the mitigation measures that will be proposed in the ESIA, including capacity building requirements; and
- 17) E&S Monitoring Plan with clear monitoring indicators and institutional roles to be used in tracking the implementation and compliance of the proposed mitigation measures;
- 18) Institutional mandates.
- 19) List of References.
- 20) Appendices:

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2 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

2.1 Introduction

Key legislation governing an ESIA study in Uganda includes the National Environmental Act (NO. 5 of 2019) of the laws of Uganda and the Environmental and Social Assessment Regulations, S.I. No. 143 of 2020. The National Environmental Act established NEMA and entrusts it with the responsibility to ensure compliance with ESIA process and procedures in planning and execution of development projects. The procedures require that a project proponent prepares an ESIA report with a clear assessment of relevant potential impacts, based on Terms of Reference (ToRs) developed from a scoping exercise. This requires that the ESIA addresses potential direct and indirect socio-environmental impacts during the preconstruction, construction, operation and decommissioning phases and an environmental and social management plan (ESMP) has also to be prepared.

Policies, legal and institutional framework considered relevant to this proposed project are discussed in this section. Various laws here reviewed relate to minimum acceptable construction, operational requirements, environmental quality, land use, public health, occupational safety, labour standards and international legal obligations.

2.2 Policies and plans relevant to the Proposed Project

Table 6 below presents the policies and plans related to the project.

Table 6: Policies and plans related to the Project

| Policy | Goal and objectives | Relevancy of the Policy to the proposed project |
|--|---|---|
| National Environment Management Policy, 2014 | The overall policy goal is sustainable development which maintains and promotes environmental quality and resource productivity for socio-economic transformation. The Policy provides a system of Environmental Impact Assessment (EIA) and environmental monitoring so that adverse environmental impacts can be foreseen, eliminated or mitigated. | Environment and development are interrelated, and this policy requires that environmental aspects are considered in all development projects. Therefore, this ESIA study has been conducted to take into consideration any adverse social and environmental impacts of the construction activities. |
| The National Water Policy, 1999 | The goal of this policy is to provide guidance on development and management of the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and | Construction and operation activities have an impact on downstream water quality and quantity due to construction activities and if the discharged raw water and sludge from the water works is not treated and, this policy is relevant to |

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| Policy | Goal and objectives | Relevancy of the Policy to the proposed project |
|--|--|---|
| | quality for all social and economic needs, with full participation of all stakeholders and mindful of the needs of future generations. The policy aims to: Promote rational use of water; Control pollution and promote safe storage, treatment and disposal of waste, which could pollute water and impact public health; and Promotion of awareness of water management and development issues and capacity building. | the proposed project. The design included environmental flows and a sludge treatment has been proposed to mitigate over abstraction of water and maintenance of the existing water quality downstream. |
| The National Land Policy, 2013 | The goal of this Policy is: "to ensure an efficient, equitable and optimal utilization and management of Uganda's land resources for poverty reduction, wealth creation and overall socio-economic development". One of its objectives is to ensure sustainable utilization, protection and management of environmental, natural and cultural resources on land for national socio-economic development. | By undertaking an ESIA for the proposed project, the developer is ensuring planned and environmentally friendly infrastructure development. Enhancement and mitigation measures should be implemented by the developer and the contractor(s) to ensure that all land use practices conform to land use plans and the principles of sound environmental management such as biodiversity preservation, soil and water protection, conservation and sustainable land management. |
| Uganda National Climate Change Policy, 2015 | 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 including integration of climate change issues into planning, decision making and investments in all sectors. | ESIA promotes the wise use of water resources to minimize harmful effects to the environment and water resource monitoring. It promotes and strengthen the conservation and protection against degradation of watersheds, water catchment areas, river banks and water sources in order to increase their resilience to climate change impacts. |
| The National Health Policy, 2010 The National Gender Policy, 2007 | The overall objective of this policy is to reduce mortality, morbidity and fertility, and the disparities therein. The goal of this policy is to mainstream gender issues in the national development process in order to improve the social, legal/civic, political, economic and cultural conditions of the people of Uganda, particularly women. | The project will contribute to the reduction of water borne diseases thus improving on the health of beneficiaries. This policy would especially apply in the recruitment process of labour, both during construction and operation phase. Men and women should have equal opportunities for available jobs. This policy also requires provision of a work |
| | The policy recognizes women and children as the main carriers and users of water and related sanitation facilities. It anchors the importance of gender responsiveness in terms of planning, implementation | environment that is safe and conducive to women, as it is for men, considering gender-disaggregated differences and vulnerabilities. For example, women should have separate facilities from men at workers' camps and sites. |

| Policy | Goal and objectives | Relevancy of the Policy to the proposed project |
|---|---|--|
| | and management of water and sanitation initiatives. | |
| The Occupational Health and Safety (OHS) Policy, 2006This policy seeks to: Provide and maintain a healthy working environment; Institutionalize OHS in the power- sector policies, programs and plans; and Contribute towards safeguarding the physical environment. The OHS Policy also takes into consideration the HealthThis policy will be espect construction crews and su maintenance personnel. The in mitigation measures that p and safety impacts as a resu | | This policy will be especially relevant for OHS of construction crews and subsequently, operation and maintenance personnel. The policy will also have relevance in mitigation measures that protect the public from health and safety impacts as a result of project construction and subsequent operation and maintenance activities. |
| The Environmental Health Policy 2005 | The policy provides a framework for the development of services and programs at National and Local Government levels that establish the environmental Health priorities. | Analysis of water quality was done during this ESIA where water quality sampling and analysis was done at design stage and during ESIA stage at different times. |
| The National Policy for the Conservation and Management ofThe goal of this Policy is to curtail the rampant loss of wetland resources and ensure that benefits from wetlands are sustainable and equitably distributed. Wetlands acting as sources of water supply wastewater treatment shouldA water so proposed management | | A water source protection has been elaborated for the proposed project and is aimed at conservation and management of wetland resources within the catchment area. The designs will adhere to the principles of sustainability such that areas within wetlands are left intact, as much as possible |
| The National Land Use Policy, 2007The overall goal for the national land use policy is "To achieve sustainable and equitable socioeconomic development through optimal land management and utilization in Uganda." Specific goals of this policy include among others: To adopt improved agriculture and other land use systems that will provide lasting benefits forBy undertaking an ESIA for the proposed developer is to ensure planned and environme infrastructure development. Enhancement an measures should be implemented by the development contractor(s) that ensure all land use practice | | By undertaking an ESIA for the proposed project, the developer is to ensure planned and environmentally friendly infrastructure development. Enhancement and mitigation measures should be implemented by the developer and the contractor(s) that ensure all land use practices conform to land use plans and the principles of sound environmental management such as biodiversity preservation, conservation and sustainable land management. |
| The NationalHIV/AIDS is recognized by Ministry of Health as aItHIV/AIDS Policy, 2004considerable risk in construction of infrastructure projectsband it (together with the Ministry of Gender, Labour and Social Development) encourages employers to developconstruction | | It is anticipated that during the construction phase, there may be an influx of people into the project area possibly resulting into sexual fraternisation and a risk of HIV/AIDS spread. The construction contractors or their subcontractors, will provide in-house HIV Policy, worker sensitisation and provision of free |

| Policy | Goal and objectives | Relevancy of the Policy to the proposed project |
|---|--|---|
| | prevention measures to workers and avoid discriminating against workers living with or affected by HIV/AIDS. The policy encourages employee awareness and education on HIV/AIDS. The policy also guides about HIV/AIDS management including awareness and provision of condoms in workplaces. | condoms. This policy is relevant to the project if implementation of proposed construction activities leads to in-migration into the project area by people seeking |
| The National Child Labour Policy, 2006 | The policy provides an enabling environment for the prevention, protection and elimination of child labour. It is intended to establish guiding principles in Uganda's effort to eliminate child labour and priorities for government and stakeholder action. This policy is based on recognition that all human beings, adults and children, have rights. Children by virtue of their age and needs are entitled to specific rights, including education, health, survival development, protection and participation. | The project management should ensure that all employees are above 18years and not school going. |
| The National Orphans and other vulnerable children's Policy, 2004 | The goal of the Policy is full development and realization of rights of orphans and other vulnerable children. The policy provides support to vulnerable children and families such that their capacity to sustain themselves is strengthened; and provides residential care for orphans and other vulnerable children as a last resort | The project Developer (MWE/DWD) and the contractor(s) including their sub-contractor(s) will ensure that the project activities do not compromise or in any way affect the lives and livelihood of all the vulnerable groups like the orphans and children in general during the project implementation |
| The National Equal Opportunities Policy, 2006 | The National Equal Opportunities Policy provides a framework for re-dressing imbalances, which exist against marginalized groups while promoting equality and fairness for all. With a goal of: providing avenues where individuals and groups' potentials are put to maximum use by availing equal opportunities and affirmative action. | The Water supply projects come along with a lot of opportunities including service delivery, trainings and employment. The project will avail equal opportunities and affirmative action. |
| The National Sanitation Policy for Uganda, 1997 | The Goal of this policy is to promote and preserve the health of the community through improved sanitation. Attaining and maintaining a good standard of sanitation and greatly contribute to reducing mortality and morbidity from sanitation related diseases as well as | The proposed project will promote proper management of solid and liquid wastes and promote IEC for behaviour change concerning sanitation. |

| Policy Goal and objectives | | Relevancy of the Policy to the proposed project | |
|--|--|---|--|
| | improving the socio-economic status of the community. | | |
| Uganda Vision 2040 In 'Vision 2040', Uganda sets goals to achieve by the year 2040 ranging from political, economic, social, energy water, and environment. It acknowledges that the slow accumulation of infrastructure i.e. water among others retards the economic development. | | and safe water and sanitation. It will further reduce the disease burden from water related diseases among others. | |
| National Development Plan III (NDP III) | The plan focuses on increasing and matching the capacity of the local authorities with the high urbanization rate of Uganda where most of the urban areas in Uganda have expanded beyond their original spatial plans with many of them surrounded by vast sprawling unplanned settlements and have increasingly encroached into the wetlands and drainage corridors contributing to the frequent flooding especially when it rains. | The proposed project will improve on the access to clean and safe water and sanitation. It will further reduce the disease burden from water related diseases among others. | |

2.3 Laws and regulations relevant to the Proposed Project

Table 7 below presents the Legal framework related to the project.

Table 7: Legal framework related to the project

| Legal Framework | Provision and Requirement | Relevancy to the proposed project |
|--------------------------------|--|---|
| The Constitution of | The State shall promote sustainable development and public | All environmental impact actions of the project are |
| the Republic of | awareness of the need to manage land, air and water resources in a | therefore meant to conform to the broader |
| Uganda; 1995; | balanced and sustainable manner for the present and future | objectives of the Constitution which requires a |
| amended as at 15 th | generations. The Constitution is the cardinal law in Uganda upon | healthy environment for all citizenry. ESIA report |
| February 2006, | which all environmental laws and regulations are founded. | has been prepared for NEMA's consideration |
| Government of | | before implementation of the project. Therefore, |
| Uganda. | | this Project will be implemented in a manner that |
| | | will incorporate the appropriate safeguards for |
| | | environmental and social issues, especially land |
| | | take. Any land required for the implementation of |

| | | | the construction activities will be obtained within |
|----|---|---|---|
| | | | the confines of the law, after a Resettlement Action Plan (RAP) has been conducted where possible. |
| | The National Environment Act No. 5 of 2019 | This act provides for various strategies and tools for environment management, which also includes the ESIA for projects likely to have significant environmental impacts. The Third Schedule of the National Environment Act, No. 5 of 2019 lists projects to be considered for environmental impact assessment. Under that categorization, most water resources related projects fall under two ground and surface water resources. | The Act governs and guides environmental management in Uganda. This ESIA is prepared to conform to the Act's requirement that projects likely to have significant environmental impact undertake an ESIA before they are implemented. ESIA report has been prepared for NEMA's consideration before implementation of the project. |
| 10 | The Water Act, Cap 152 and The Water Resources Regulations, 1998 | Management of water resources Regulation and issuing of water use, abstraction and wastewater discharge permits; Prevention of water pollution. Managing and monitoring and regulation of water resources | Water abstraction permits should be obtained from DWRM before operation phase. Water analysis was done under ESIA and results (see Section 5.1.5) compared to those obtained at design stage and national standards for portable water. The quality of treated water will be regularly monitored to ensure it meets portable water standards. |
| 12 | The Land Act, Cap 227 | Section 74 (i) states that where it is necessary to execute public works on any land, an authorized undertaker shall enter into mutual agreement with occupier or owner of the land in accordance with Act. | These tenure systems will be important during resettlement planning. The extent of works designed to ensure the construction of the NWSS will necessitate land take of 170.7438 acres in the Project Area. Any land required for the implementation of this Project will be acquired in accordance with the provisions of this Act. |
| | The Physical Planning Act, 2010 as amended 2020 | Section 37 requires an EIA permit for developments before they are implemented. It states: "Where a development application related to matters that require an environmental impact assessment, the approving authority may grant preliminary approval subject to the applicant obtaining an EIA certificate in accordance with the National Environment Act". | MWE shall use established guidelines to acquire land and compensate where possible for acquired lands, as well as safeguarding the natural environment, in line with the provisions of this Act. RAP was prepared for the project infrastructure in fulfilment of the above provisions before construction activities are implemented. |
| - | The Occupational Safety and Health Act, 2006 | Provision of Occupation Health and Safety of workers and Inspection of places of works. This Act requires that employers provide and maintain safe working conditions and take measures to protect workers and the public from risks and dangers of their works, at his | An ESMP has been prepared and the Contractor will ensure the workplace is registered under the Ministry of Gender, Labour and Social Development (MoGLSD) under the Department of OHS. The |

| | or her own cost (Section 13). Employers with more than 20 workers should prepare and often revise a written policy with respect to safety and health of workers (Section 14). The contractor therefore is obliged to provide employers with washing facilities, First Aid, facilities for meals and safe access to workplaces | construction activities will require workers during the construction, and operation and maintenance phases. Therefore, the Act requires that MWE and all contractors must ensure that workers have a safe working environment at all times and that their health is not at risk as whilst at work. |
|---|--|---|
| The Land Acquisition Act (1965) | This law elaborates on land acquisition procedures for early entry into the delineated land as compensation matters are finalized with the objective of timely Project delivery. Reference to this Act has been made while proposing strategies for addressing unreasonable speculative persons who may jeopardize Project delivery by demanding exorbitant compensation. | MWE will issue Notices of Entry at the start of RAP disclosures. |
| The Workers' Compensation Act, 2000 | This requires compensation to be paid to a worker injured or acquired an occupational disease or has been harmed in any way in the course of his/her work. | This Project will require workers during construction, operation and maintenance phases. Any injury or illness resulting from Project related activities will be subject to conditions of the Workers' Compensation Act. Kasese District Labour officers will also be involved in ensuring compliance of the Contractor's' with labour laws. The developer shall ensure that all contractors and sub- contractors provide personal protective equipment (PPE) to employees to minimize accidents and injuries and ensure workers safety onsite. |
| The Public Health Act, Cap 281 | The Public Health Act aims at avoiding pollution of environmental resources that support health and livelihoods of communities. It gives local authorities powers (Section 103) to prevent pollution of watercourses. | The disposal of waste from the proposed project will have to be appropriately managed so as to prevent risk to public health, in line with the provisions of this Act. |
| The Local Governments Act, Cap 243 | Provides for the system of local governments based on the decentralization of district for the enforcement of environmental law. | The developer will work closely with the District Water Officer (DWO), District Natural Resources Officer (DNRO) and Sub-County Community Development Officer in carrying out monitoring activities to ensure no damage onto the environment and social amenities. |
| The Investment Code | Section 18(2) (d) of the Act requires an investor to take necessary | MWE is the implementing agency for the project |

| Act, Cap 92 | steps to ensure that development and operation of an investment | that received funding from the World Bank. This |
|-------------------------------|--|--|
| | project do not cause adverse ecological and socio-economic impacts. | ESIA is in partial fulfilment of the requirements of this Act, since adverse ecological and socio- economic impacts as a result of the project implementation have been identified and mitigation measures developed. |
| The Employment Act, 2006 | This Act is the principal legislation that seeks to harmonize relationships between employees and employers, protect worker's interests and welfare and safeguard their occupational health and safety through: i) Prohibiting forced labour, discrimination and sexual harassment at workplaces (Part II; Part IV). ii) Providing for labour inspection by the relevant ministry (Part III). iii) Stipulating rights and duties in employment (weekly rest, working hours, annual leave, maternity and paternity leaves, sick pay, etc. (Part VI). iv) Continuity of employment (continuous service, seasonal employment, etc. (Part VIII). This Act is relevant to both construction & operation phases. | The Act will govern labour arrangements and conditions under which persons hired by the project work. It prohibits Child labour (a condition the contractor must comply with) as well as providing guidance on work rights during the post- construction phase. |
| The Mining Act, Cap. 148 | Stone quarry sites and gravel borrow pits will be necessary for materials needed to construct the concrete works of the project components. Therefore, applicable licenses shall be obtained from the Commissioner of the Geological Survey and Mines. The Mining Act of 2003 regulates mining developments including set up of new quarries and/or sandpits. Relevant environmental studies required for this license application are described in Part XI. | This Act will apply to the project's contractor(s) who will be required to obtain license for extraction of stone/ aggregate and murram materials required for construction. The extraction of stone/aggregate and murram materials will be undertaken in line with the provisions of this Act. Issues of restoration of the sites after extraction of murram will be of key importance after construction of the proposed project. |
| The Children's Act, Cap 59 | This is an Act to reform and consolidate the law relating to children; to provide for the care, protection and maintenance of children; to make provision for children charged with offences and for other connected purposes. Part II of the second schedule of this Act defines a child as a person below the age of eighteen (18) years. In the same schedule under Section 8 of this Act provides that no child shall be employed or engaged in any activity that may be harmful to his or her health, education or mental, physical or moral | This Project will require workers during construction, operation and maintenance phases. No child should be employed under project work force requirement however, any employment or engagement of children will be done in line with the restrictions of this Act and the Employment Act to ensure that risks to children are either eliminated, or reduced to as low as reasonably practicable. In addition, the contractor will confirm |

| | development. | age of potential labourers prior to hiring through National Identity card, birth certificate or confirming with LC and community elders. Kasese District Probation Officers will provide guidance to Contractors and their employees' areas of compliance. |
|--|---|---|
| The Historical Monuments Act, 1967 | Sub-section 12(1) requires that any portable object discovered in the course of an excavation shall be surrendered to the Minister who shall deposit it in the Museum. The Act adds that, notwithstanding provisions of the subsection, where any object is discovered in a protected site, place, or monument, the owner of the protected site, place, or monument shall be entitled to reasonable compensation. | This Act requires that any chance finds encountered during project construction shall be preserved by the Department of Monuments and Museum in the Ministry of Tourism, Wildlife and Heritage. Any chance find objects, material or infrastructure that may be identified as falling under the category of 'archaeological pale-ontological ethnographical and traditional interests' during the Project implementation will therefore, be reported to the Department of Museums and Monuments for advice and where necessary undergo a forensic assessment. Annex 5 gives details of the Chance |
| The National Environment (Environmental and Social Assessment) Regulations, 2020 | According to sections 15 of the Regulations, the developer of any project that has or is likely to have a significant impact on the environment is required to undertake an ESIA process after approval of the ToRs. | ESIA report has been prepared for NEMA's consideration after the approval of the Terms of References before implementation of the proposed project. |
| The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000 | In Regulation 17 (1), every landowner, occupier or user who is adjacent or contiguous with a wetland shall have a duty to prevent the degradation or destruction of the wetland and shall maintain the ecological and other functions of the wetland. The tool used under these Regulations to ensure compliance is the permit. | Prior to any works at the discharge of water sludge back into the environment or any wetland, MWE will seek permission from NEMA, as provided for in these Regulations. A water source protection plan (WSPP) has been prepared to protect any wetland resources within the catchment area from being polluted. |
| The National Environment (Waste | Regulation 5 (1) stipulates that a person who generates waste, a waste handler or product steward has a duty of care and shall take | These regulations apply to both construction and operation-phase waste which should be managed |

| Management) | measures to ensu | re that waste is managed | in a manner that does not | in a way such as to avoid environmental and public |
|-----------------------|---|------------------------------------|---|---|
| Regulations, 2020 | cause harm to human health or the environment among other | | | health impact. Therefore, all the generated various |
| - | provisions. | | | types and volume of waste should be managed and |
| | | | | conform to these regulations. |
| The National | Part III Section | 8 (1) requires facility op | erators, to use the best | |
| Environment (Noise | | s to ensure that the em | | |
| Standards and | exceed the permissible noise levels. The regulations require that | | | |
| | | | | |
| Control) Regulations, | • | | ise exceeding 85 dBA for | 5 |
| 2000. | eight hours in a | a day should be provide | ed with requisite hearing | not to exceed 85dB as per Regulation. |
| | protection. | | | |
| The Water Resources | With regard to w | ater abstraction, Part II: Se | ection 3 Sub-section (1) of | Water abstraction permits will be obtained by the |
| Regulations, 1998 | these regulations | requires application for | Water Permits by anyone | developer from the Directorate of Water Resources |
| 5 | - | | any land; (b) Wishes to | Management (DWRM) before operation phase. |
| | | | rks on or adjacent to the | |
| | | | pply to the Director for a | |
| | water permit. | in regulation to, may ap | ipiy to the Director for a | |
| The National | Section 5 details that a person shall not discharge effluent into water | | | Effluent/liquid waste (such as human waste, food |
| Environment | | • | Act, the Water Act, the | scraps, oils, soaps and chemicals) should not be |
| | • | | | • |
| (Standards for | | | nt) Regulations, 2020, the | o i |
| Discharge of Effluent | | | ns, 2019, the Water (Waste | 5 |
| into Water or on | Discharge) Regu | lations, these Regulation | ons and environmental | does not cause harm to human health or the |
| Land) Regulations, | standards. For thi | s project, this standard is a | applicable to liquid waste/ | environment. |
| 2020 | sewage treatment plant and public toilets. | | | |
| Draft National Air | | | ovide Uganda's regulatory | These standards will apply particularly during |
| Quality Standards, | air quality standa | | 5 5 7 | construction of the water treatment plant and |
| 2006 | Pollutant | Averaging time for ambient air | Standard for ambient air | reservoirs. |
| | Carbon dioxide (CO ₂) | 8 hour | 9.0 ppm | |
| | Carbon monoxide (CO) | 8 hour | 9.0 ppm | |
| | Hydrocarbons | 24 hour 24 hour | 5 mg m ⁻³ | |
| | Nitrogen oxides (NO ₃) | 1 year arithmetic mean | 0.10 ppm | |
| | Smoke | Not to exceed 5 minutes in any one | Ringlemann scale No.2 or 40% | |
| | Scot | hour 24 hour | observed at 6m or more 500 µg Nm- ³ | |
| | Sulphur dioxide (SO ₂) | 24 hour 24 hour | 0.15 ppm | |
| | container enclosed (most) | AT 1001 | A LA MAIL | |

| The National | Part III on Environmental Compliance Audit, Section 12, Sub-section | The project will involve construction and operation |
|---------------------|--|---|
| Environment (Audit) | (1) requires the developer of a project or activity listed in Schedule 3 | of water supply and sanitation facilities that have a |
| Regulations, 2020 | to these Regulations to carry out an environmental compliance audit. | potential to impact negatively of the environment. |
| | | Therefore, MWE should conduct Environmental |
| | | Audits to assess if there are impacts, to what extent |
| | | and mitigate them. |

2.4 Permits and Licenses

A list of some of the permits and licenses necessary for execution of the project are indicated in the Table below.

| No. | Permit or License Name ¹ | Issuing Authority | Responsible for acquiring the permit | |
|-----|---|--|---|----|
| 1. | Certificate for Approval for ESIA for the project | National Environment Management Authority (NEMA) | Rural Water Supply and Sanitation Department (RWSSD) under the Directorate of Water Development (DWD) | |
| 2. | Surface Water Abstraction Permit | The Directorate of Water Resources Management (DWRM) under the Ministry of Water and Environment (MWE) | Operator | 17 |
| 3. | Permit to carry out an activity in a wetland/river bank | NEMA | RWSSD | |
| 4. | Construction Permit | Kasese District Planning Office | Contractor | |
| 5. | Workplace Registration Certificate | Department of Occupational Safety and Health under the Ministry of Gender, Labour and Social Development (MGLSD) | Contractor | |
| 6. | Equipment Inspection Certifications | Department of Occupational Safety and Health/Ministry of Gender, Labour and Social Development (MGLSD) | Contractor | |
| 7. | Solid Waste Management License (to collect, transport, store, treat or dispose of waste) ² | ΝΕΜΑ | Both the Contractor and Operator | |

Table 8: Permits and licenses required by the proposed development

¹ And any other permits or licenses prescribed by NEMA in the Certificate of Approval for the ESIA Report.

 $^{^{2}\,\}text{A}$ NEMA gazetted waste handler can be contracted by the Contractor or Operator.

| 8. | Effluent Discharge Permit | DWRM under MWE | Operator |
|----|---------------------------|----------------|----------|

2.5 World Bank Safeguard Policies and Requirements

In pursuance of the World-Bank Operational Safeguards policies an Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework Documents were developed to guide safeguards implementation for the IWMDP. Overall, the project is likely to trigger five (5) World Bank Operational Policies which included Environmental Assessment (OP/BP/GP 4.01), Natural Habitat (OP 4.04), Physical Cultural Resources (OP 4.11), Involuntary Resettlement (OP/BP 4.12), and Forests (OP 4.36). However, Safety of Dam (OP4.37) and International Water Ways (OP 7.50) will not be triggered. In addition, safeguards implementation has to comply with the requirements of investment project financing and the World Bank Group Environmental, Health, and Safety (EHS) Guidelines for general Construction and Decommissioning as well as the EHS guideline for Water and Sanitation.

Overall by their nature, location, scale & scope, including the environmental and social context where the Nyamugasani WSS project will be situated, will have minimal adverse environmental and social impacts. Therefore, negative impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance. This therefore qualifies the project to be EA Category B.

The applicable World Bank environmental and social safeguard policies that will require the project to meet the requirements are summarized as in Table 9.

| Yes √ or | If applicable, how might it apply? | | | | | | |
|----------|--|--|--|--|--|--|--|
| No X | | | | | | | |
| | Environmental Assessment (OP/BP/GP 4.01) The Environmental Assessment (EA) Safeguard is to ensure that projects a environmentally and socially sustainable, and provide a basis for improved decision making. OP 4.01 evaluates a project's potential environmental risks and impacts in its ar of influence; examines project alternatives; identifies ways of improving project selection siting, planning, design, and implementation by preventing, minimizing, mitigating, compensating for adverse environmental impacts and enhancing positive impacts; and | | | | | | |
| | includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The proposed project will largely generate positive impacts contributing to public health, | | | | | | |
| V | economic growth, and environmental sustainability. OP 4.01 is triggered as the project may have potential negative environmental and social impacts through the construction and operational phases. Possible impacts during construction include; impacts on water bodies associated due to earthworks and wastewater generated from construction activities; emissions of particulate matter by earthworks and removal of vegetation cover; Occupational, Health, and Safety (OHS) risks; and social misdemeanour by workers. The impacts during construction phase will be temporary while works are carried out. During the operation phase, the potential risks include unpleasant odours and noise from the | | | | | | |
| | operation of sanitation facilities; inadequate sludge management and wastewater effluent discharges; possible impacts on surface and/or ground water due to leakages from and intrusion of storm water to the facilities (sewers, manholes, ponds, septic tanks); and impacts of water intake on environmental flows and aquatic ecosystems, including | | | | | | |

Table 9: Summary on Bank Policies and how they relate to Nyamugasani WSS Project

migratory fish species.

The anticipated negative impacts will be localized, site-specific and small to moderate in scale. All project adverse impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance. For instance, the treated effluents from wastewater facilities (ponds and faecal sludge treatment facilities) will not generate significant impacts, if the facilities are operated and maintained according to design standards. With respect to AC, the environmental management plan will include management measures for the removal, packaging, transportation and disposal of existing asbestos waste. Works and equipment will be designed based on technical studies to ensure safe yield from groundwater and surface water resources. The water and sanitation facilities are relatively small.

The Project is classified as Category B because it will not generate any potential large scale, significant and/or irreversible impacts, it is not located in environmentally sensitive areas, and impacts can be mitigated with relatively standard mitigation measures. Safeguards instruments: Compliance will be ensured through diligent application of Environmental and Social Management Framework (ESMF) and site specific Environmental and Social Impact Assessments (ESIAs)/Environmental and Social Management Plans (ESMPs) during implementation. The Project will follow the WB- EHS Guidelines for Water and Sanitation.

Natural Habitats (OP/BP 4.04)

While no significant negative impacts on natural habitats are anticipated by project works, the policy is triggered because most of the sanitation facility at the water treatment plant may discharge their effluent into wetlands if constructed close to the river and not well lined. In addition, the project will also involve catchment management and some of the investments may involve afforestation, reforestation and improvement of watersheds. Depending on the subprojects and potential negative impacts to the natural habitats (forests, wetlands, lakeshores, and riverbanks), these subprojects will include/encompass natural habitats assessment and mitigation under the given sub-project ESIA/ESMP to protect or preserve any flora & fauna species identified at risk of being affected. If a subproject can cause irreversible damages, it will be excluded.

Forests (OP/BP 4.36)

✓ OP 4.36 is triggered due to potential project impacts on health and quality of forests, especially in the catchment areas where the project will support afforestation, reforestation and improvement of watersheds. Compliance will be ensured through the site specific ESIAs/ESMPs that shall ensure inclusion of forests assessment and mitigation.

Pest Management (OP 4.09)

X The project will not involve or support the purchase, manufacture or use of pesticides. The Project will not lead to increased/changed use of pesticides.

Physical Cultural Resources (OP 4.11)

✓ The policy is triggered due to the possibility of chance finding of physical cultural resources during construction. Any potential physical cultural resources will be addressed by incorporating reporting and handling procedures as part of site specific ESIA and dealt with in the context of the ESMF. The ESMF has provided a generic Chance Finds Procedure that will guide handling accidental encounter of archaeological resources.

20

√

| | Involuntary Resettlement (OP/BP 4.12) |
|---|--|
| | The purpose of this policy is to avoid or minimize involuntary resettlement and, where this |
| | is not feasible, assist displaced persons in improving or at least restoring their livelihoods |
| | and standards of living in real terms relative to pre-displacement levels or to levels |
| | prevailing prior to the beginning of project implementation, whichever is higher. The key |
| | objectives of this operational policy are to: a. Avoid or minimize involuntary resettlement |
| | scenarios, where possible and examine all viable alternative project designs; b. Support |
| | affected persons in restoring/improving their former living standards, income generation |
| | and production capacities, or at least in restoring them; c. Encourage community |
| | involvement in planning and implementing resettlement actions, and provide assistance to |
| | affected people regardless of the legality of land tenure. The policy does not only cover |
| | physical displacement, but also any loss of land or other assets associated to the proposed |
| | actions resulting in: a. relocation or loss of shelter; b. loss of assets or access to assets; and |
| V | loss of income sources or means of livelihood, whether or not the affected person is to |
| | reallocate to a new area. |
| | The policy is therefore triggered because of the potential negative social impacts that |
| | might result from the need for land acquisition and/or the loss of access to economic |
| | assets and livelihoods due to integrated WRM and WSS activities. Nyamugasani Water |
| | Supply and Sanitation Project will require a permanent land take of 170.7438 acres and an |
| | Easement corridor of 164.4988 acres. A total number of 1657 PAPs will be affected by the |
| | proposed Nyamugasani Water Supply and Sanitation Project Both instruments will be |
| | disclosed in country and on the World Bank website by project's appraisal. For sub-projects |
| | covered under the RPF, these shall be subjected to social screening and where necessary |
| | their RAP shall be prepared and implemented before commencement of implementation |
| | of any such activities. |
| | Indigenous Peoples (OP 4.10) |
| Х | There are no areas occupied by indigenous people in the project area |
| | Safety of Dams (OP/BP 4.37) |
| | OP 4.37 is not triggered as the project will finance rehabilitation and construction of small |
| | dams (i.e. dams smaller than 15m, as per OP 4.37) identified through the catchment |
| Х | planning process under component 3, including small dams to prevent soil erosion and for |
| | flood protection. The Project does not support the construction or rehabilitation of large |
| | dams and subprojects do not include structures that will rely on the performance of an |
| | existing dam or dam under construction (DUC). |
| | Projects in Disputed Areas (OP/BP/GP 7.60) |
| х | |
| | OP 7.60 is not triggered as there are no known disputed areas in the project districts. If any, |
| | the project will not support any activities in disputed areas. |
| x | Projects on International Waterways (OP/BP/GP 7.50) |
| | This policy is not triggered since the water source is not an International Waterway. |
| | |

2.5.1 World Bank Policy on Disclosure of Information

The World Bank, through its Disclosure Policy BP 17.50, requires that all safeguard documents be disclosed in the respective countries as well as at the Bank's Info shop or Website prior to appraisal or for

Fast Tracking Initiative prior to Signing of the Grant Agreement. The Bank recognizes the right to information, and has information disclosure policies which generally contain the following elements: principles of disclosure; exceptions to disclosure; routine disclosure; and request driven disclosure. Disclosure of documents (including a summary of the project, and a summary of Environmental Assessment) should be in the local language, at a public place accessible to project-affected groups, local non-governmental organizations and other interested persons. In-country disclosure of information is the responsibility of the borrower, in this case of the project proponent through the steering committee or the individual institutions that will be implementing a project, in this case the MWE. Disclosure at InfoShop is the responsibility of the World Bank. Documents that need to be disclosed include:

- Integrated Safeguards Data Sheet;
- All Safeguard mitigation plans: (i). Environmental and Social Impact Assessments, and/or Environmental and Social Management Plans; and (ii). Resettlement Action Plan.

All documents should be made available to stakeholders well in advance of consultations and all public consultations should be completed and draft or final documents should be disclosed prior to the project appraisal. In addition, all final documents, including the results of the consultations should be disclosed for the record. For this ESIA, information disclosure was initiated with the stakeholder consultations and public meetings held in the project area of Kasese. The meetings provided an opportunity for stakeholders to provide comments and useful inputs to be taken into consideration when planning and implementing the proposed project.

As the ESIA has been prepared, it is proposed that the disclosure process be through continued interaction with stakeholders using contacts gathered during public meetings. The MoWE shall ensure the availability of the full ESIA in their Public Library and Website, including websites and offices of MWE, and participating Districts, where the public can have access and provide any comments.

2.6 Environmental Health and Safety Guidelines Specific to Water Supply and Sanitation Projects

The World Bank Group (WBG) Environmental Health and Safety (EHS) General Guidelines are recommended to be used by the project. This section provides an overview on how the general approach to be taken with regards to the management of EHS issues at the sub-project or project level. They shall be referred to and used to guide EHS issues in specific industry sectors, and they should be used together with the safeguard policies. These shall govern both workers' (occupational) safety and public safety. The applicability of the EHS Guidelines shall be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment in which site-specific factors are taken into account. Effective management of environmental, health, and safety (EHS) issues entails the inclusion of EHS considerations into corporate- and facility-level business processes through the following steps:

- Identifying project hazards and associated risks as early as possible;
- Involving EHS professionals, who have the experience, competence, and training necessary to assess and manage EHS impacts and risks, and carry out specialized environmental management functions;
- Understand the likelihood and magnitude of the risks;
- Prioritizing risk management strategies with the objective of achieving an overall reduction of risk to human health and the environment;
- Favouring strategies that eliminate the cause of the hazard at its source;
- Incorporating engineering and management controls to reduce or minimize the possibility and magnitude of undesired consequences;

- Preparing workers and nearby communities to respond to accidents;
- Improving EHS performance through a combination of ongoing monitoring of facility performance and effective accountability.

The following were considered when assessing the potential risks related to health, safety and security: Infrastructure and Equipment Safety; Hazardous Materials Safety; Environmental and Natural Resource Issues (such as floods/ landslides etc.); Community safety and exposure to project related risks; Emergency Preparedness and Response.

| Aspect | Relevancy to the proposed project |
|---|--|
| Environmental | |
| Air Emissions and Ambient Air Quality This guideline applies to facilities or projects that generate emissions to air at any stage of the project life-cycle. This guideline provides an approach to the management of significant sources of emissions, including specific guidance for assessment and monitoring of impacts. | This guideline is relevant because fugitive emissions are expected during the construction phase of this Project. These guidelines will be referenced for acceptable air quality levels during Project implementation, particularly for fugitive sources. |
| Wastewater and Ambient Water Quality | This Project is primarily about water abstraction, |
| This guideline applies to projects that have either direct or indirect discharge of process wastewater, wastewater from utility operations or storm water to the environment. These guidelines are also applicable to industrial discharges to sanitary sewers that discharge to the environment without any treatment. Projects with the potential to generate process wastewater, sanitary (domestic) sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety, or the environment. | treatment, supply and management. As the guidelines state, any wastewater discharge, even of uncontaminated will be managed properly before discharge. However, no wastewater will be generated due to the implementation of this project |
| Waste Management These guidelines apply to projects that generate, store, or handle any quantity of waste across a range of industry sectors. Solid (non-hazardous) wastes generally include any garbage, refuse. Examples of such waste include domestic trash and garbage; inert construction / demolition materials; refuse, such as metal scrap and empty containers (except those previously used to contain hazardous materials which should, in principle, be managed as a hazardous waste); and residual waste from industrial operations, such as boiler slag, clinker, and fly ash. | This Project will produce waste during the construction period. The operation and maintenance phase also have an insignificant element of waste management since the operation will only involve the water abstraction, treatment and supply. These guidelines will be referenced for principles of HSE regarding waste management during the life of this Project. |

Table 10: World Bank General EHS Guidelines relevant to this Project

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| Aspect | Relevancy to the proposed project |
|---|--|
| Hazardous waste shares the properties of a hazardous material (e.g. ignitability, corrosivity, reactivity, or toxicity), or other physical, chemical, or biological characteristics that may pose a potential risk to human health or the environment if improperly managed. | |
| Noise This guideline addresses impacts of noise beyond the property boundary of the facilities. Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception | The pump station is far away from residential areas and houses and it is not close to schools and health care institutions which are considered to be very sensitive receptors. Noise emissions shall be monitored against the WB's guidelines during construction, operation and maintenance: |
| Contaminated Land This guideline provides a summary of management approaches for land contamination due to anthropogenic releases of hazardous materials, wastes, or oil, including naturally occurring substances. Releases of these materials may be the result of historic or current site activities, including, but not limited to, accidents during their handling and storage, or due to their poor management or disposal. Contaminated lands may involve surficial soils or subsurface soils that, through leaching and transport, may affect groundwater, surface water, and adjacent sites. When contamination of land is suspected or confirmed during any project phase, the cause of the uncontrolled release should be identified and corrected to avoid further releases and associated adverse impacts | The Contractor(s) Will ensure that hazardous materials, wastes, or oil will not be discharged or released onto soils and land. All servicing and maintenance of construction vehicles such as trucks and equipment shall not be done on site. |
| Occupational Health and Safety | |
| Communication and Training This includes guidelines for OHS Training, Visitor Orientation, New task employee and contractor training, Area signage, labelling of equipment, communicate hazard codes, among others. Provisions should be made to provide OHS orientation training to all new employees to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellow employees. | Supervising Consultants and Contractors for the Project will have to ensure that OHS requirements for the Project are met in line with these guidelines |
| Physical Hazards | During the construction of the Nyamugasani Water Supply and Sanitation System; activities |

| Aspect | Relevancy to the proposed project |
|---|--|
| Physical hazards represent potential for accident or injury or illness due to repetitive exposure to mechanical action or work activity. Single exposure to physical hazards like falling off from construction buildings/higher heights, may result in a wide range of injuries, from minor and medical aid only, to disabling, catastrophic, and/or fatal. Multiple exposures over prolonged periods can result in disabling injuries of comparable significance and consequence. Sources of potential for such injury include rotating and moving equipment, noise, vibration, eye hazards, industrial vehicle driving and site traffic, ergonomics, repetitive motion, manual handling, among others. | such as dredging, equipment and machinery which generate noise and vibrations will be used. These operations will be guided by these guidelines. |
| Personal Protective Equipment (PPE) | Supervising Consultants and Contractors for the |
| Personal Protective Equipment (PPE) provides additional protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems. PPE is considered to be a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection. | will to ensure that PPE requirements for the Project are met in line with these guidelines. PPE will be provided (as required) for eye and face protection, head protection, hearing protection, foot protection, hand protection, respiratory protection, body/leg protection |
| Monitoring | Stringent monitoring of HSE aspects will be |
| Occupational health and safety monitoring programs should verify the effectiveness of prevention and control strategies. The selected indicators should be representative of the most significant occupational, health, and safety hazards, and the implementation of prevention and control strategies | crucial for the successful implementation of the Project, to have risks reduced to levels that are as low as reasonably practicable. |
| Community Health and Safety | |
| Water Quality and Availability Groundwater and surface water represent essential sources of drinking and irrigation water in developing countries, particularly in rural areas where piped water supply may be limited or unavailable and where available resources are collected by the consumer with little or no treatment. Project activities involving wastewater discharges, water extraction, diversion or impoundment should prevent adverse impacts to the quality and availability of groundwater and surface water resources. Project activities should not compromise the availability of water for personal hygiene needs and should take | In the project area, there's no potential for the Project to impact on water quality and availability. There are no other water pipes crossing or traversing near the proposed project area which could cause disruption during Project implementation to guarantee measures in line with these guidelines to be put in place. Any discharge of water sludge/semi-solid slurry from the sludge drying beds shall meet the standards for effluent before discharge into water or land as prescribed under Part II on Standards for Effluent in the National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020 (specifically as provided for |

| Aspect | Relevancy to the proposed project |
|---|---|
| account of potential future increases in demand | under Schedule 2 and Schedule 3). |
| Structural Safety of Project Infrastructure | This guideline will be referenced in line with the integrity of the structures and any hoarding |
| Hazards posed to the public while accessing project | installed. PPE will be provided to persons |
| facilities may include: Physical trauma associated with failure of building structures; Burns and smoke | accessing the project facilities. For all public roads and access roads used by the construction |
| inhalation from fires; Injuries suffered as a | activities, dust suppression using water will be |
| consequence of falls or contact with heavy equipment; | carried out by the Contractor(s). All visitors will |
| Respiratory distress from dust, fumes, or noxious odors; Exposure to hazardous materials; Reduction of | be inducted in EHS requirements before accessing any construction site/area. Safety |
| potential hazards is best accomplished during the | signs and safe systems of work will be |
| design phase when the structural design, layout and | developed for each workstation. |
| site modifications can be adapted more easily. | |
| Traffic Safety Traffic safety should be promoted by all project | Though the proposed sites are not near residential areas, this may pose a risk of accidents to residents especially from the trucks |
| personnel during displacement to and from the workplace, and during operation of project equipment | delivering construction materials to the site along the access roads. Accessibility to the |
| on public roads. Prevention and control of traffic related injuries and fatalities should include the | NWSS is along the Kasese community roads and work at the proposed site will disrupt traffic. |
| adoption of safety measures that are protective of | Delivery of materials and movement of |
| project workers and of road users, including those who | equipment for the Project will also impact traffic. |
| are most vulnerable to road traffic accidents. Road safety initiatives proportional to the scope and nature | This guideline will be referenced in line with traffic safety during Project implementation |
| of project activities. | |
| Disease Prevention | The risk of spread of communicable and vector- |
| Communicable diseases pose a significant public | borne diseases exists, particularly due to potential influx of Project workers and water |
| health threat worldwide. Health hazards typically | impoundment in some cases, as required during |
| associated with large development projects are those | construction. This guideline will be referenced in |
| relating to poor sanitation and living conditions, sexual transmission and vector-borne infections. | line with disease prevention in the Project communities. |
| Communicable diseases of most concern during the | communities. |
| construction phase due to labor mobility are sexually | |
| transmitted diseases (STDs), such as HIV/AIDS. | |
| Recognizing that no single measure is likely to be effective in the long term, successful initiatives | |
| typically involve a combination of behavioral and | |
| environmental modifications. | |
| Reducing the impact of vector-borne disease on the long-term health of workers is best accomplished | |
| through implementation of diverse interventions | |
| aimed at eliminating the factors that lead to disease. | |
| Emergency Preparedness and Response | On any construction site, there is a potential that risks will occur. It is important to have measures |
| All projects should have an Emergency Preparedness | in place to readily contain and respond to any |

| Aspect | Relevancy to the proposed project |
|--|--|
| and Response Plan that is commensurate with the risks of the facility and that includes the following basic elements: Administration (policy, purpose, distribution, definitions, etc.); Organization of emergency areas (command centers, medical stations, etc.); Roles and responsibilities; Communication systems; Emergency response procedures; Emergency resources; Training and updating; Checklists (role and action list and equipment checklist); Business Continuity and | risks when they occur. This guideline will be referenced in line with emergency preparedness and response. |
| Contingency. Construction and Decommissioning | |
| Environment | |
| Guidelines on prevention and control of community health and safety impacts that may occur during new project development, at the end of the project life- cycle, or due to expansion or modification of existing project facilities include: Noise and vibration, soil erosion, sediment | These impacts are applicable to this Project, and will be addressed in line with these specific guidelines |
| mobilization and d transport, air quality, solid waste, | |
| hazardous materials, wastewater discharges, and | |
| contaminated land. | |
| Occupational Health and Safety Guidelines are provided on aspects of OHS including over-exertion, slips and falls, work in heights, struck by objects, moving machinery, dust, confined spaces and excavations, and other site hazards. | These impacts are applicable to this Project, and will be addressed in line with these specific guidelines |
| Community Health and Safety | These impacts are applicable to this Project, and |
| Projects should implement risk management strategies to protect the community from physical, chemical, or other hazards associated with sites under construction and decommissioning. Risks may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards | will be addressed in line with these specific guidelines. |

2.7 Institutional Framework

Table 11: Institutional framework for the project

| Institution | Role | |
|-------------------|------|---|
| Ministry of Water | | Review and approve the ESIA report (ESIS) as the client/Developer |

| and Environment | before submission to NEMA Monitors and evaluates the development project to keep track of the performance, efficiency and effectiveness of its implementation Apply for Surface Water Abstraction Permits from DWRM. Compensate local Project Affected Persons (PAP) for any loss or negative effect of the project before implementing the project. Implement mitigation measures and actions to protect the environment and monitor implementation of proposed measures in the specific site- ESMPs. |
|--|--|
| Directorate of Water Resources Management (DWRM) | Issue water abstraction and wastewater discharge permits. Ensure monitoring of surface water resource, laboratory and field works and ultimately water pollution control |
| National Environment Management Authority (NEMA) | The Environmental Monitoring and Compliance Department of NEMA will be responsible for the review and approval of ESIAs, post-implementation audits and monitoring of approved projects. Although project sponsors have a responsibility for monitoring their own activities, NEMA carries out its own monitoring largely through District Environmental Officers and environmental inspectors at NEMA's head office/ Lead Agencies. Coordinate, inspect, supervise and monitor project activities to ensure that the environment and natural resources are not depleted but managed sustainably. |
| Ministry of Lands, Housing and Urban Development (MLHUD) | Through the Chief Government Valuer (CGV) in the Valuation Department, MLHUD is responsible for reviewing and approving the Valuation Report developed as part of this RAP. The valuation report is critical in ensuring timely payment of fair and adequate compensation as well ensure that the Project Construction and next steps commence in time. |
| Ministry of Tourism, Wildlife and Antiquities | In-charge of protecting and preserving the sites with remain of cultural or archaeological importance when identified during construction activities for conservation, preservation, restoration and salvage. |
| Uganda Wildlife Authority (UWA) | 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. |
| Directorate of Environment Affairs (DEA) | Coordinate, inspect, supervise and monitor the environment and natural resources. Ensure that environmental policies and laws are respected while implementing water resources related projects. |
| District Local Administration Structures (Kasese District Local Government) | Under the Government of Uganda decentralization policy, the delegated political guidance, policy formulation and legislative authority is vested in the directly elected Local Council V Chairman together with the Councillors. The administrative affairs of the sub county are handled by a Sub-County Chief, who is also the head of the subordinate civil servants. Local government structures are important for mobilising support |

| | for the project as well as monitoring its social-environmental impacts both during construction and operation phases. Facilitate and/or coordinate activities of the developer in their areas of jurisdiction. Mobilize local communities and key stakeholders to participate in EIA consultations and/or public hearings. |
|---|--|
| Ministry of Gender, Labour and Social Development (MGLSD) | The department of Occupational Health and Safety (OHS) is responsible for inspecting and registering the workplace and monitoring of conditions under which employees on the project are subjected. |

3 PROJECT DESCRIPTION

3.1 Location of the Proposed Project

The water supply area of the proposed Nyamugasani piped water supply system is located in seven Sub Counties of Kyondo, Muhokya, Munkunyu, Kisinga, Kyarumba, Lake Katwe and Nyakatonzi in Kasese District. The Nyamugasani Water Supply and Sanitation project area is located in Kasese District between latitudes 00 12' 21" S and 00 19' 05" N and longitudes 290 41' 56" E and 300 15' 51" E in Western Uganda. It is accessible by approximately 390km of tarmac road from Kampala via Fort Portal town. Phase I of the project to be funded under the IWMDP will cover infrastructure of the intake, raw water main, water treatment plant, transmission, and distribution to cover parts of Kyarumba, Kyondo, Kisinga and L. Katwe Sub Counties with an estimated population of 131,390 inhabitants and 25,247 households. The total population of the schools in the four Sub Counties in phase I is 30,598 children. It is anticipated that the project will benefit 44,531 people with portable water and 29,280 people with basic sanitation and hygiene improvement messages by end of the project in 2025: Figure 1 below presents the project areas.

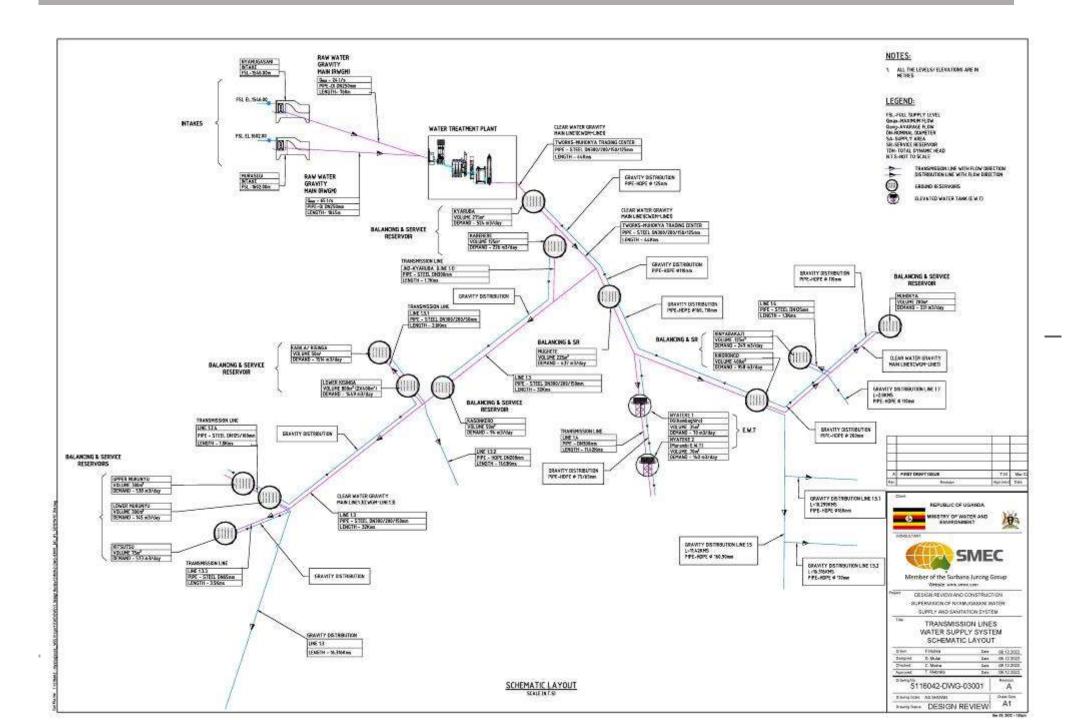


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-1: Map showing location of project area

3.2 **Project Description and Design**

The principal elements of the proposed Nyamugasani water supply system comprise: Two raw water intakes one across R. Nyamugasani downstream of the HEP 1 intake located at latitudes 00 09' 11.8" N and longitude 290 55' 33.28" E and R. Nyamuruseghe located at latitudes 00 10' 0.91" N and longitude 290 55' 48.28" E;. 2 separate raw water mains from the intakes described above, to the Water Treatment Plant whose location remains unchanged from the site presented in the 2016 design; A conventional water treatment plant of capacity 5588 m³ /day approximately 83 km of high pressure rated gravity transmission steel network including 2 break pressure tanks; and 168Km of uPVC/ HDPE distribution network including 13No Steel ground storage water tanks (size range 50-800 m3 and total storage capacity of 3025m3 and 36 No break pressure tanks.

3.2.1 Design Criteria and Standards

Based on the detailed Engineering Design Report (December 2022), the following design criteria and standards were followed. The design criteria adopted for the detailed design of the Water Supply System were based on the requirements stipulated in the Consultancy Services Terms of Reference and in accordance with various design standards of countries in the East African region as described in the following sections in this chapter.

The envisaged project infrastructure and facilities based on the design review carried include the following:

3.2.2 Water abstraction and Intake Works

The proposed abstraction and intake works for the raw water of Nyamugasani WSS will be from River 33 Nyamugasani and will have the following components:

Two types of intakes have been considered

- ♣ Intake 1: On the surface of the river, introduction of a grading to avoid the boulders and a draw off pipe at the base of the river
- 🖊 Intake 2: An Ogee type weir with upstream boulder trap taking into consideration necking location with upstream boulder trap.

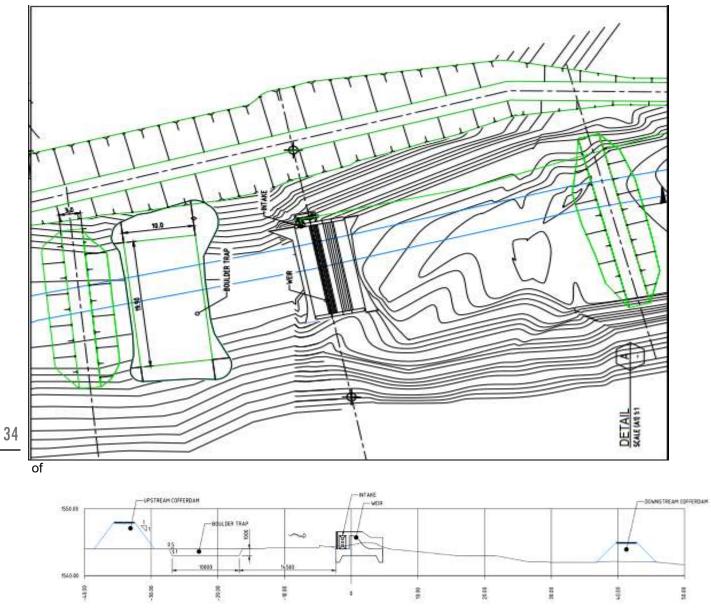


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-2: Nyamugasani and Nyamuruseghe Weir Proposal and diversion works



Plate 1: The proposed intake point of River Nyamugasani in Kyondo Sub County.



Plate 2: The proposed Intake point on River Nyamuruseghe in Kyarumba Sub County

Siting of weirs is governed by contour necking and typically uses this approach to minimize the length of the weir wall. In this regard the two proposed weirs are located at the coordinates shown in the table below

| Proposed River | Coordinate Reference system | Coordinates | Logic Underpinning Site Selection |
|----------------|--------------------------------|---|--|
| Nyamugasani | Arc 1960 UTM zone 36 N | Eastings-157749.076, Northings-16959.932 | The length of the weir at the initially proposed intake was 27m while at the new intake the length is 14 m |
| Nyamuruseghe | Arc 1960 UTM zone | Eastings-158191.43, | The terrain had a contour necking |

| Tahlo | 12. | Moir | Sitina | Underpinning Logic | |
|-------|-----|------|--------|---------------------|--|
| Tuble | 12. | vveu | Sung | Underprinning Logic | |

| Proposed River | Coordinate Reference system | Coordinates | Logic Underpinning Site Selection | | |
|----------------|--------------------------------|--------------------|---|--|--|
| | 36 N | Northings-18476.57 | distance at the weir location of 22 m which was deemed to be least achievable length and hence value engineering | | |

3.2.3 Sizing

Both weir walls have a height form the datum (lowest elevation at the river bed) of 2m. This height was selected as the weir walls were principally used to the head of water and was not ear marked to serve as storage. However, the additional 1 m height takes into consideration, sediment loads and boulders typically ferried in the run of the river.

The weir was design for a 1 in 100-year annual recurrence interval (ARI) flood event and the diversion channel was designed for a 1 in 25-year recurrence interval flood event.

3.2.4 Construction sequencing

During the construction, river flows along the rivers Nyamugasani and Nyamuruseghe will need to be rerouted to allow for construction of the weir and the intake chamber. Consequently, open diversion channels have been provided, which were design for 25-year flood annual recurrence interval (ARI). Further, upstream and downstream coffer dams have been provided at each of these sites to prevent back flow and minimise the need of dewatering during construction using pumps thus, the proposed construction sequencing will be followed.

- Construction of the diversion channel with a sluice gate to regulate the environmental flows even after construction
- Construction of the upstream coffer dams to obstruct the flows and direct to the diversion channel
- 4 Construction of downstream coffer dam to obstruct backwash as flow join the river channel
- River re-routing
- Construction of boulder tap and the weir will then follow
- Closing/opening of sluice gate as required post construction to facilitate environmental flow and licensing as may be required.

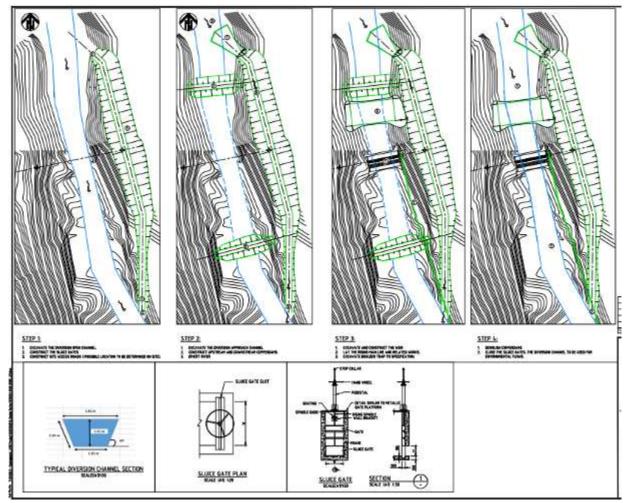


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-3: Proposed Weir Construction Sequencing

3.2.5 Ogee Weir Hydraulic Computation results

The Ogee intake weirs proposed for this project have been cited as follows and were analysed based on a 1 in 100 year ARI flood. The results showed that they would both be submerged at that flow. A summary of the dimensions proposed are presented in the table below

| Proposed | Coordinate | Proposed I | Weir | Weir | | |
|--------------|---------------------------|--------------|---------------|---------------|---------------|--|
| River | Reference system | Eastings (m) | Northings (m) | length (m) | height (m) | |
| Nyamugasani | Arc 1960 UTM zone 36 N | 825785.146 | 10016655.435 | 14 | 2 | |
| Nyamuruseghe | Arc 1960 UTM zone 36 N | 826227.000 | 10018172.000 | 22 | 2 | |

3.2.6 Diversion channel hydraulic results

The diversion channels for both rivers were designed for a 1 in 25 year ARI flood event. The most hydraulically trapezoidal channel. The summary results of this can be seen in the table below

| River | Designed Discharge (m3/s) | Top width, T (m) | Vertical depth, y (m) | Bottom width of channel & length of Side Slope, B (m) | Length (m) |
|--------------|---------------------------------|---------------------|--------------------------|--|------------|
| Nyamugasani | 17.4 - | 3.81 | 1.65 | 1.9 | 125 |
| Nyamuruseghe | 5.3 | 0.95 | 0.5 | 0.54 | 530 |

Table 14: Diversion Channels at intake sites

3.2.7 Raw Water Measurement

The raw water in the inlet channel will be measured using a thin plate rectangular weir installed in the Inlet Channel which is calibrated. The level of the water will be recorded daily from a graduated scale fixed upstream of the weir and the rate of flow determined from a graph for discharge over the weir.

3.2.8 Water Treatment Process Design

A new treatment plant has been designed at the Water Treatment site is to provide 5588 m³/day. The designed treatment plant will comprise of a full conventional treatment approach incorporating aeration, coagulation and flocculation, plain sedimentation, filtration and disinfection. Horizontal flow sedimentation is selected for settling because of its ability to handle turbidity shock loads and high turbidity that is typical of raw water from Nyamugasani River during rains. The Treatment Works has been designed to have 2No. parallel streams with two (2No.) flocculation basins, 4No. sedimentation tanks, 4 No. rapid sand filters and a clear water tank fitted with baffle walls to allow for plug flow hence maintaining the calcium hypochlorite concentration. Typically, calcium hypochlorite is deemed superior due to its residual chlorine content that constantly disinfects the pipe network up to the end user.

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The units provided are as follows: -

- An inlet Chamber and Inlet Channel. The channel incorporates a thin plate rectangular weir plate for flow Measurement of the raw water;
- ✤ Flocculation preceded by Chemical Dosing of Alum;
- Sedimentation Horizontal Flow Tanks, incorporating Lamella settlers towards the end of the tank;
- Filtration Rapid Gravity Sand Filters;
- Disinfection by Chlorination;
- Backwashing with air followed by water;
- Administration / Chemical Dosing Building, Pump-house and Chlorine Storage Building, Staff Housing, etc. and other Ancillary Works.

For all the structures at the treatment works site, anti-termite treatment will be carried out on final formation before the base slab and foundation are constructed.

3.2.9 Water Treatment Plant Sizing

The table below represents a summary of the designed water treatment plant. Although one treatment train is required, an extra train has been provided in case one half is decommissioned.

| Parameters | Design Review requirement | Remarks |
|--|---------------------------|--|
| Discharge/ Design capacity (m ³ /d) | 5588 | |
| Cascade Aeration | 6 steps provided | included to induce hydraulic jump and rapid mix of coagulant + removal of iron and manganese |

Table 15: Comparison between initial and review design of water treatment plant

| | | though rarely a problem surface water | in |
|--|---|---------------------------------------|----|
| Flow Measurement | Sharp crested rectangular weir | | |
| Inlet channel dimension | 0.5m breadth | | |
| | 0.6 m depth of flow | | |
| Flocculation Basin | | | |
| Inlet channel into flocculation basin | 0.5 breadth | | |
| | 0.6 depth of flow | | |
| Required number of flocculation basins | 1 | | |
| as per design | | | |
| width(m) | 10 | | |
| Length (m) | 10.25m | | |
| Width(m) of channel | 0.5 | | |
| Depth of flow(m) | 0.65 | | |
| Number of baffle walls | 15 | | |
| Sedimentation Tank | | | |
| Required Number | 1 | | |
| Number of Inlet channels | 1 | | |
| Length of inlet channel (m) | 10 | | |
| Width(m) | 0.5 | | |
| Depth(m) | 0.65 | | |
| Inlet Baffle walls Openings | 1 row x 40, pipe diameter 150mm | | |
| Sedimentation Tank Dimensions | | 39 | |
| length(m) | 30 | | |
| Width(m) | 10 | | |
| Depth Minimum (m) | 2.33 | | |
| Depth Maximum (m) | 2.94 | | |
| Detention time (hours) | 3 | | |
| Number of weir plate per tank | 4 | | |
| Number of launders per tank | 2 | | |
| Settling Water Channel after Sediment | ation | | |
| length(m) | 10 | | |
| Width(m) | 0.5 | | |
| Depth of flow(m) | 0.32 | | |
| Inlet Channel to the rapid sand filter | | | |
| Length (m) | 10m | | |
| Depth of flow (m) | 0.32m | | |
| Rapid Sand Filter | | | |
| Number of filters required | 1 | | |
| length(m) | 10 | | |
| Width(m) | 5.2 | | |
| Depth(m) | 3.55 | | |
| supporting bed | 4 layers with different layer thickness | | |
| Backwash Tank 1No. | | | |

| Capacity (m3) | 350 | |
|--------------------------------------|------|--|
| Elevation (m) | 12 | |
| Clear water tank | | |
| length(m) | 13 | |
| Width(m) | 13 | |
| Depth(m) | 1 | |
| baffle walls in the clear water tank | 2 | Introduced to ensure plug flow thereby allow for constant disinfectant concentration |
| Sludge Drying Beds | | |
| Number | 4 | |
| Length of each (m) | 20 | |
| Width (m) | 4 | |
| Height (m) | 1.83 | |

3.2.10Hydraulic Design

The treatment plant units described above have been arranged such that the entire treatment process is by gravity. As the water flows through the respective treatment units, head losses occur as the water flows down the plant under gravity. These losses have been calculated and a hydraulic profile of the water as it flows through the works has been prepared with a schematic hydraulic profile.

3.2.11Additional Water Treatment Plant Facilities

a) Laboratory Facilities

In the existing drawings for the administration building, a laboratory has not been provided, nor has a separate laboratory building been provided. It is important that a laboratory, with facilities to perform tests necessary to determine dosages required for the various chemicals used in the operation of the works, is provided, preferably within the administration building. The drawing for the administration building will therefore be revised as necessary; equipment will be provided to regularly check pH values, turbidity and residual chlorine in the treated water.



Plate 3: The proposed site for the Water treatment Plant in Kyarumba Town Council

b) Measurement of Residual Chlorine

The existing layout drawing does not show a means of collecting samples to measure residual chlorine in treated water before distribution to consumers. A separate layout drawing showing this (a tap that is connected to the main distribution main just after the Clear Water Tank) and other pipes is at the treatment works.

c) Staff Housing

2No. units of staff houses in one block has been provided at the Treatment Works Site. The floor area of each unit in the drawings is 65.6m² which is quite spacious; this has been reviewed so that there are 3No. units for the staff housing, each of a floor area of 45-50m², which is adequate for 2 operators and 1 laboratory technician.

3.2.12 Building Works

a) Administration Building

The Administration building in the existing drawings is a single storey building with a floor area of 71m². The building also consists of the operator's offices.



Plate 4: The proposed site for the Administrative Building in Kyarumba town Council

b) Chemical House

The chemical house in the existing drawings is a single storey building with a floor area of 210 m². The building consists of the following

- 4 Alum, Soda Ash and Chlorine dosing areas and store for these chemicals
- Shower and toilets

In the existing layout drawing of the treatment works, there is a chemical mixing room/store building, with a total floor area of 189.5m² adjacent to the administration building. The floor area provided for alum is adequate for slightly more than 2 weeks which is adequate since the location of the treatment works is not so remote that a longer duration for storage would be necessary. Further, provision of more storage

would require a larger store and therefore a larger building. An access door for loading/delivering the chemicals from outside will be provided.

c) Chemical and Dosing Rates

Dosage of alum is determined from Jar test as there is variation in turbidity, with the turbidity being highest during the rainy season during which more alum will be required

The dosage of Chlorine is normally 2 - 5 mg/l since, other than disinfection, chlorine is used up in oxidising other chemicals responsible for taste and odour such as ammonia and organic matter. The chlorine residual after 30 minutes contact time should be 0.2 -0.3 mg.l since as recommended in the Uganda. The chlorine residual should be periodically tested and the chlorine dosage adjusted accordingly. As the water flows further down the distribution system, the chlorine reduces and should also be periodically tested and if necessary, booster chlorination carried out.

3.2.13 Plant Electromechanical Design

a) Backwash Pump System

The head losses through the water piping between clear water tank Min. WL and back wash tank Max. WL is computed in the following table. The friction head loss in pipes is calculated by using Hazen Williams equations:

| | Reservoir Inlet water Level | 1537.5 | | | | | | | | | |
|----|-------------------------------------|----------|---------------|-------------|--|--------------|-----------------|---------------------|-----------------------------|-------------------------------|----------------------|
| 42 | Suction Wet Well Min Water Level | 1526.866 | | | | | | | | | |
| 12 | Maximum Static Head | 10.634 | | | | | | | | | |
| | Feature | Material | Length (m) | Dia. (m) | Hazzen William's Constant "C" | Flow m3/s | Velocity m/s | Friction Coeffi. | Sum Minor Loss "K" | Head Loss "Haizen W" | Minor Loss (m) |
| | Suction Manifold Pipe | GS | 5 | 0.2 | 120 | 0.030 | 0.95 | 0.0059 | 2.00 | 0.03 | 0.09 |
| | Suction Individual Pipe | GS | 3 | 0.2 | 120 | 0.030 | 0.95 | 0.0059 | 2.00 | 0.02 | 0.09 |
| | Discharge Manifold Pipe | GS | 5 | 0.15 | 120 | 0.030 | 1.70 | 0.0239 | 0.30 | 0.12 | 0.04 |
| | Discharge Individual Pipe | GS | 3 | 0.15 | 120 | 0.030 | 1.70 | 0.0239 | 5.84 | 0.07 | 0.86 |
| | Transmission Main Pipe | GRP | 110 | 0.2 | 120 | 0.030 | 0.95 | 0.0059 | 15.20 | 0.65 | 0.71 |
| | | | | | | | | | | 0.89 | 1.79 |
| | Total Pump Head | | | | | | | | | | |

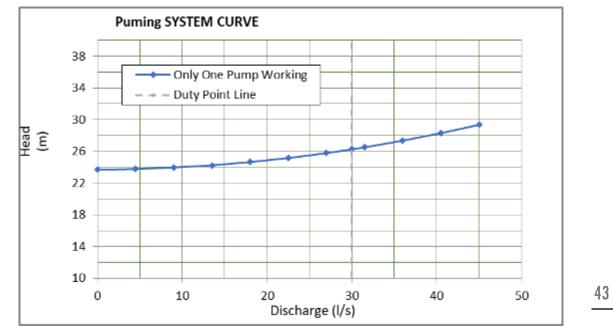
Table 16: Head loss through the water piping between clear water tank and Back wash tank

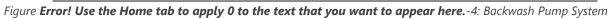
The following system head curves show: -Only one duty pump will working during normal filling of backwash tank.

| Percent of pump flow 0 [%] | 15 | 30 | 45 | 60 | 75 | 90 | 100 | 105 | 120 | 135 | 150 |
|----------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
|----------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|

Table 17: Backwash head Curve Computation Data

| Flow rate [l/s] | 0 | 4.5 | 9 | 13.5 | 18 | 22.5 | 27 | 30 | 31.5 | 36 | 40.5 | 45 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total pump head one | | | | | | | | | | | | |
| pump working [m] | 23.70 | 23.76 | 23.97 | 24.24 | 24.64 | 25.16 | 25.78 | 26.38 | 26.52 | 27.35 | 28.30 | 29.35 |





b) Power Requirements at the Treatment Works Site

The total load is the sum of the treatment plant administration block, street lighting, staff quarters and the gate house.

| Table 18: WTP Transformer Capacity | | | | | | | |
|--|-------------|--------------------|--|--|--|--|--|
| | Transformer | Generator Power | | | | | |
| WATER PUMPS | | | | | | | |
| Discharge m3/s | 0.030 | 0.030 | | | | | |
| Head, m. | 13.34 | 26.00 | | | | | |
| Typical starting factor for SS starting, Transformer | 1.70 | - | | | | | |
| Typical starting factor for SS starting, Generator | - | 2.50 | | | | | |
| Power factor considered | 0.85 | 0.85 | | | | | |
| Power required by pump motor - Pt, KW | 13.66 | 13.66 | | | | | |
| Selected pump motor, KW | 15.00 | 15.00 | | | | | |
| Total number of duty pumps, KW | 1 | 1 | | | | | |
| Total power required for 1 st pump starting, Kw | 25.50 | 37.50 | | | | | |
| Total power required for all duty pumps, Kw | 25.50 | 37.50 | | | | | |

3.2.14 Matters requiring attention during Operation

The following aspects require attention during operation

- Before the filter is put into operation, a test cup stirring test shall be performed on the raw water to be filtered to determine whether coagulants and disinfectants are used in the raw water, and the best coagulant variety and its suitable the dosing rate. This step is the most basic condition to ensure the normal operation of the filter. Without this prerequisite, the normal operation of the filter and the water quality requirements after filtration cannot be guaranteed.
- When the filter is initially invested and operated, first open the water inlet valve a little, so that the water inlet is about 10% of the normal water inlet, so that the water is distributed and slowly enters the filter until water flows out from the outlet pipe. Only then can the valve be opened, and according to the reading of the flow meter, the water inflow reaches the design flow, and the filter tank is put into normal operation.
- The adjustment of filter backwash intensity and backwash time is an important link to ensure the normal operation of the filter and the stability and effectiveness of the filter material layer. The backwashing strength and backwashing time must be calculated according to the turbidity of the raw water to calculate the intermittent time of the next flushing time as a regular flushing time. The general flushing time is 4-6 minutes. During normal operation, if it is found that the duration of backwashing intensity is too large, the valve is closed and the opening degree is reduced. On the contrary, when the backwashing process is too long, the pollutant content in the backwashing water is reduced, and the backwashing water is still unclear before the backwashing speed is fast, the opening degree of the valve should be increased until the duration required by the equipment is reached.
- When the backwash intensity is appropriate, the opening degree of the valve should be fixed to prevent the backwash intensity from changing.
- During normal filtration, the valve installed on the outlet pipe should be kept fully open, and the outlet valve should not be used to adjust the net water volume of the filter.
- **4**Repair and maintenance work
- **4**Suspend inspections every six months or one year.
- When the inspection is stopped, the water inlet and outlet valves should be closed first, and then the open valve should be opened to empty the water in the filter. Open the manhole cover and check the filter material layer to see if there is agglomeration. If agglomeration is found, the agglomerated filter material should be removed, and the opening of the valve should be appropriately increased to increase the strength of backwashing.
- Check whether the thickness of the filter material layer meets the design requirements. If the filter material is naturally lost or reduced by the water flow, the clean filter material should be supplemented. For example, the sand layer should be carried by the backwash water and escape more. When reducing the thickness of the sand layer, the opening degree of the valve should be appropriately reduced. After the inspection, close the manhole cover to make it leak-proof and close

the vent valve, and then operate according to the initial operation steps until it is put into normal operation.

3.2.15 Transmission and Distribution

a) Raw Water Gravity Mains

From the intake to the Water Treatment plant inlet, the hydraulic design of the raw water main employed Hazen Williams formula for the frictional head loss computation. A major challenge for this site was the undulating terrain however, pressure ratings of below 16 bars for the raw water mains were found for Nyamugasani. As two intakes are proposed, the table below represents each raw water main emanating from the respective intakes to the Water treatment plant. The two pipes flow independently into the water treatment plant due to pressure differentials that may induce back flow into the Nyamugasani line or totally close the check valves should it be placed.

| | | | Pipe | ework | |
|----------------|-------------------------------|-----------------------------|-----------------------------|------------------|---------------|
| Chainage | Designation | Nominal Diameter (DN) | Nominal Pressure (PN) | Pipe Material | Length (m) |
| 0+000 to 0+860 | Nyamugasani Intake to WTP | 200 | 16 | Steel | 860 |
| 0+000 to 2+140 | Nyamuruseghe Intake to WTP | 250 | 25 | Steel | 2140 |

 Table 19: Raw Water Gravity Main Pipeline Hydraulic Summary

b) Transmission and Distribution Pipe network

45

i. Water Demand Patterns

All primary and secondary distribution mains were designed for the peak hour demand of the peak day at the "ultimate" period, although consideration shall be given to duplicating the key primary, mains where economies of scale permit. Wherever practical the distribution system shall be looped, thus avoiding dead ends, when proposing improvements to the existing distribution systems

ii. Hydraulic Design of Pipe network

There are various ways and configurations used to distribute water to the community. For Nyamugasani WSS Project, a branched pattern with dead ends has been adopted. In this configuration, to the trunk line (primary feeders) mains (secondary feeders) are connected and to the mains, sub mains (small distribution mains) are joined for supplying water to the buildings. In pipes with dead-ends, the flow of water is always in the same direction, and water is supplied to an area by a single pipe. This area is referred to as the node.

The main advantages of this approach are

- Branching is a very simple method of water distribution
- 4 The design of such pipes is simple
- + The required dimensions of the pipes are economical

However, this configuration also has some disadvantages, namely:

- Sediments accumulate due to stagnation at the dead–end, occasionally causing tastes and odours if the pipe is not regularly flushed
- The area receiving water from the pipe under repair is without water until work is completed

Insufficient water pressure may occur when additional areas are connected to the water supply system

Within the network model and during construction the following requirements were adhered to

- Mains were divided into sections by valves so that any section may be taken out of operation for repairs
- Lead ends were avoided as much as possible
- Mains followed the general contours
- Pipes were above the hydraulic gradient line
- ↓ Minimum coverage under roads to be maintained to at least 0.1 m
- 4 Air valves will be placed at summits and washouts at depressions
- 4 Velocity of water within pipework was maintained at below 1.8 m/s to avoid corrosion
- Available head at end nodes was maintained at above 5 bars (approx. 50 kpa) for the entire network

c) Pipe Network Design

The transmission mains have been divided into bulk transmission, primary transmission, secondary transmission and tertiary transmission based on how the pipes bifurcate and divide flows from the clear water tank at the treatment plant. As the water demand reduced from 29,115 m3/d to 5,588 m3/d the transmission network needed to be entirely redesigned and was not therefore, a design review as most of the pipe diameters were to be overhauled. Consequently, the Tables below represents a summary finding for the clear water transmission main from the Water Treatment Plant to Muhokya and to Kitsusu.

The tables below show the hydraulic analysis of the high-pressure gravity transmission mains to the various reservoirs.

| Table 20: | Table 20:Summary of the Transmission Network | | |
|--------------|--|----------|--|
| Size (DN mm) | Length (m) | PN (bar) | |
| 300 | 12,169 | 25 | |
| 200 | 21,338 | 40 | |
| 200 | 974 | 20 | |
| 150 | 23,364 | 40 | |
| 125 | 6,700 | 40 | |
| 100 | 1,600 | 40 | |
| 80 | 3,140 | 40 | |
| 65 | 3,750 | 40 | |
| 65 | 100 | 25 | |
| 50 | 8,177 | 40 | |
| 50 | 1,600 | 16 | |
| Total | 82,912 | | |

Table 20:Summary of the Transmission Network

The entire transmission main network will have two (2) break pressure tanks.

d) Service Storage

The service storage was assumed to be 50% of the average day demand. Consequently, the following storage volumes are envisaged table below

| Site | Water Demand (m ³ /d) | Required Storage Capacity(m ³) | Designed Tank Capacity (m ³) |
|---------------|----------------------------------|---|---|
| Kyarumba | 524 | 262 | 275 |
| Kaberere | 226 | 113 | 125 |
| Lower Kisinga | 1449 | 724.5 | 800 |
| Upper Kisinga | 65 | 32.5 | 50 |
| Lower Mukunyu | 145 | 72.5 | 75 |
| Upper Mukunyu | 538 | 269 | 275 |
| Kitsutsu | 573 | 286.5 | 300 |
| Mughete | 437 | 218.5 | 225 |
| Kikorongo | 747 | 373.5 | 400 |
| Kinyabakazi | 249 | 124.5 | 125 |
| Muhokya | 331 | 165.5 | 200 |
| New tank | 211 | 105.5 | 125 |

Table 21: Provided Service Storage

e) Distribution Network

The distribution networks shall start from various reservoirs/ tanks. All corresponding hydraulic computations for the distribution network were determined as shown in the design report. The analysis showed that 36 break pressure tanks would be required for the distribution system.

I. Kyarumba Reservoir Distribution Network

The primary distribution network shall comprise about 6km and shall be supplied from a 275m³ ground reinforced concrete tank the table below summarises the network.

| Pipe Size (mm) | Length (m) | PN (bar) |
|----------------|------------|----------|
| OD 125 | 2,915 | 10 |
| OD 110 | 1,938 | 10 |
| OD 75 | 1,108 | 10 |
| Total | 5,961 | |

Table 22:Summary of Kyarumba Reservoir Distribution Network

II. Mughete Reservoir Distribution Network

The primary distribution network shall comprise about 11km and shall be supplied from a 225m³ elevated steel tank. The table below summarises the network.

| · · · · · · · · · · · · · · · · · · · | 5 | |
|---------------------------------------|------------|----------|
| Pipe Size (mm) | Length (m) | PN (bar) |
| OD 160 | 4,300 | 10 |
| OD 110 | 5,280 | 10 |
| OD 90 | 1,760 | 10 |
| Total | 11,340 | |

Table 23:Summary of Mughete Reservoir Distribution Network

III. Kikorongo Reservoir Distribution Network

The primary distribution network shall comprise about 63km and shall be supplied from a 400m3 ground reinforced concrete tank. The table below summarises the network.

| Pipe Size (mm) | Length (m) | PN (bar) |
|----------------|------------|----------|
| OD 200 | 5,580 | 10 |
| OD 160 | 19,780 | 10 |
| OD 110 | 25,701 | 10 |
| OD 90 | 6,380 | 10 |
| OD 75 | 1,424 | 10 |
| OD 40 | 3,920 | 10 |
| Total | 62,785 | |

Table 24:Summary of Kikorongo Reservoir Distribution Network

IV. Kinyabakazi Reservoir Distribution Network

The primary distribution network shall comprise about 14km and shall be supplied from a 125m³ ground reinforced concrete tank. The table below represents a summary of the hydraulic computations.

| 48 | Pipe Size (mm) | Length (m) | PN (bar) |
|----|----------------|------------|----------|
| | OD 110 | 10,097 | 10 |
| | OD 50 | 2,360 | 10 |
| | OD 40 | 1,120 | 10 |
| | Total | 13,577 | |

Table 25:Summary of Kinyabakazi Distribution Network

V. Muhokya Reservoir Distribution Network

The primary distribution network shall comprise about 5km of OD110mm uPVC pipes, PN10 and shall be supplied from the 200m³ ground reinforced concrete tank

VI. Nyateke (New Route) Reservoir Distribution Network

The primary distribution network shall comprise about 12km and shall be supplied from two elevated steel tanks of capacities 70m³ and 35m³. The table below summarises the network.

| Pipe Size (mm) | Length (m) | PN (bar) |
|----------------|------------|----------|
| OD 75 | 1,940 | 10 |
| OD 63 | 9,440 | 10 |
| TOTAL | 11,380 | |

Table 26: Summary of Nyateke (New Route) Reservoirs Distribution Network

VII. Kaberere and Kasonkero Reservoirs Distribution Network

The primary distribution network shall comprise about 10km and shall be supplied from a 125m³ ground reinforced concrete tank an elevated steel tank of capacity 100m³. The table below summarises the network.

| Pipe Size (mm) | Length (m) | PN (bar) |
|----------------|------------|----------|
| OD 110 | 3,149 | 10 |
| OD 90 | 2,640 | 10 |
| OD 75 | 4,020 | 10 |
| TOTAL | 9,809 | |

Table 27:Summary of Kaberere and Kasonkero Reservoirs Distribution Network

VIII. Kisinga Reservoirs Distribution Network

The primary distribution network shall comprise about 20km and shall be supplied from ground reinforced concrete tanks of capacities 800m³ and 50m³. The table below summarises the network.

| Pipe Size (mm) | Length (m) | PN (bar) | |
|----------------|------------|----------|----|
| OD 250 | 974 | 10 | |
| OD 200 | 1,600 | 10 | 49 |
| OD 160 | 6,660 | 10 | 47 |
| OD 125 | 3,220 | 10 | |
| OD 110 | 1,200 | 10 | |
| OD 90 | 3,000 | 10 | |
| OD 75 | 1,600 | 10 | |
| OD 63 | 1,580 | 10 | |
| TOTAL | 18,860 | |] |

Table 28:Summary of Kisinga Reservoirs Distribution Network

IX. Mukunyu and Kitsutsu Reservoirs Distribution Network

The primary distribution network shall comprise about 27km covering both upper and lower Mukunyu distribution areas and shall be supplied from three ground reinforced concrete tanks of capacities 300m³, 300m³ and 75m³. The table below summarises the network.

| Pipe Size (mm) | Length (m) | PN (bar) |
|----------------|------------|----------|
| OD 200 | 180 | 10 |
| OD 160 | 17,220 | 10 |
| OD 110 | 5,420 | 10 |
| OD 90 | 3,750 | 10 |
| TOTAL | 26,570 | |

Table 29:Summary of Mukunyu and Kitsustu Reservoirs Distribution Network

3.2.16Pipe materials

Pipe materials commonly used in Uganda include ductile iron (DI), steel, galvanized steel (GS), unplasticized polyvinyl-chloride (uPVC) and High-Density polyethylene (HDPE). The suitability of a given pipe type for a particular application is influenced by the following factors:

- Its availability on the market in respect of sizes and pressure classes.
- Its cost price and that of its associated values and fittings.
- 🖊 Susceptibility to corrosion, mechanical damage, ageing and other causes of material deterioration.
- Storage costs.
- Ease of transportation.

The design team recommended use of HDPE for piped of diameter of utmost OD 90 mm, while uPVC for larger diameters Nyamugasani piped water supply based on the above factors. The minimum piped pressure rating we have recommended is PN10 because pipes with a pressure rating of PN 6 have lower thickness and prone to damage although they can be used when the static pressure is less than 50m.

3.2.17 Standards

The materials that will be specified for implementation of the scheme shall meet the relevant ISO specifications especially imported otherwise the materials must meet the national standards of the country in which they are manufactured and shall not be lower than the corresponding BS specifications. The existing UNBS, BS, ISO standards and also new standards by the same institutions will also be taken 50 into account in the design of the water supply infrastructure.

The Civil Engineering standard method of measurement issued by the Institution of Civil Engineers, London, CESMM3, 1995 or an updated version CESMM4, 2012 shall be used as the standard for the preparation of bills of quantities in civil engineering work in Uganda unless a different method is stated and modified to suit local conditions.

3.3 **Environmental Flow Demand**

Environmental flows are prescribed in any project where diversion of flow from the natural course of the river is anticipated. Nyamugasani river flow has been diverted for hydropower production. Among the water abstraction options was the option of drawing water from two intake weirs i.e. one across river Nyamuruseghe and augmenting its supply from an intake weir along Nyamugasani River located downstream of the Hydro Electricity Power (HEP) 1 intake. HEP 2 intake is located downstream of the proposed Nyamugasani water supply intake and hence has no effect on Nyamugasani water supply. After verifying the surface water abstraction license on River Nyamugasani, it became necessary that 250 l/s of flow be maintained for the reach of the river between the HEP 1 intake and the proposed water supply intake on Nyamugasani River. However, this should be compared with E-flow requirements recommended by different methods which are discussed below.

3.3.1 Tennant Method

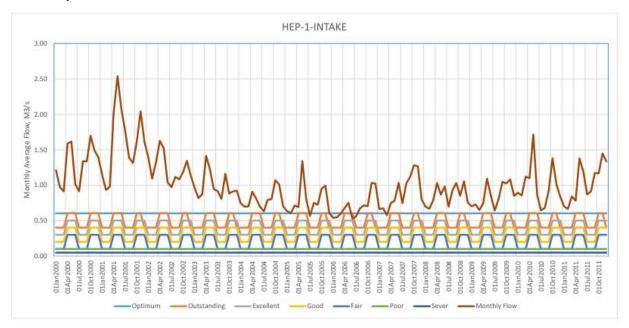
The Tennant Method developed by Tennant (1976) is the most common hydrological method applied worldwide and has been used by at least 25 countries (Tharme 2003). This method is based on empirical relationship between the specified percent of the MAR (Mean Annual Runoff) and the prescribed condition of the river. The Tennant Method uses a percentage of the MAR for two different 6-month periods to define conditions of flow related to fishery, wildlife, recreational and environmental resources.

| Description of Flows | Recommended base flow regimes (percent of Mean Annual Runoff | |
|---------------------------------|--|---------------------------------|
| | Dry season (Jan – Mar; Jul – Sep) | Wet Season (Apr – Jun; Oct-Dec) |
| Flushing or Maximum | 200% | 200% |
| Optimum Range ³ | 60-100% | 60-100% |
| Outstanding | 40% | 60% |
| Excellent | 30% | 50% |
| Good | 20% | 40% |
| Fair or degrading | 10% | 30% |
| Poor or minimum | 10% | 10% |
| Severe degradation ⁴ | <10% | <10% |

| Table 30: Tennant Method 197 | 76 | |
|------------------------------|----|--|
|------------------------------|----|--|

The MAR of Nyamugasani River at HEP-1-Intake is estimate to be 1.005 m³/s (or 1005 l/s or 86,832 m³/day). The MAR of the incremental catchment between HEP-1 intake and WS Intake is 0.055 m³/s (or 55 l/s or 4,752 m³/day). This should not be confused with exploitable flow used for planning which was set at 1-day Q95 dry season flow (433 l/s at HEP-1 intake and 24 l/s for the incremental catchment between HEP-1 Intake and WS Intake) which represents the flow recommended for abstraction from the Nyamugasani River.

The re analysed E flows are indicated below:



3 60% is considered for this analysis

4 5% is considered for this analysis

Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-5: E-Flow Recommendation at HEP-1 Intake (Tennant Method)

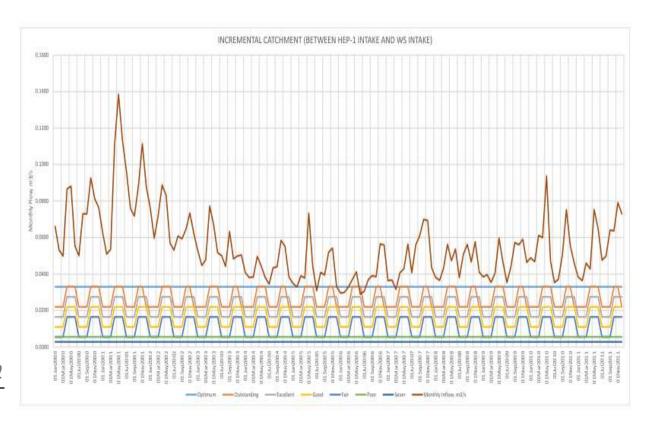


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-6: E-Flow Recommendation at WS Intake Incremental Catchment

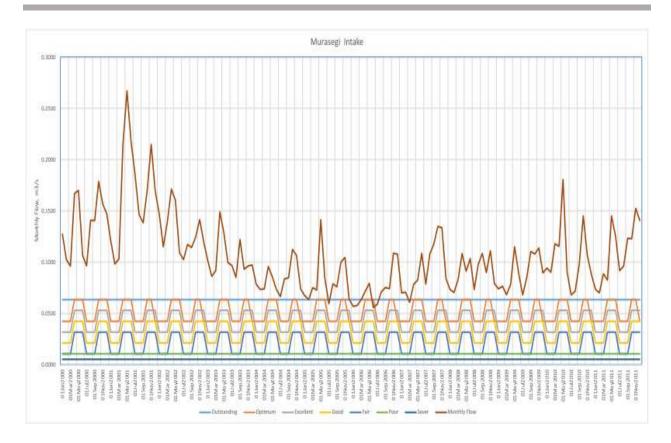


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-7: E-Flow Recommendation at Nyamuruseghe (Murasegi) Intake (Tennant Method)

3.3.2 Tessman Method

MMF > MAF

S No

1

2

3

Tessman (1980) considers natural variations in flow on a monthly basis to determine flow thresholds. The Tessman rule recommends minimum flow guidelines which require the flow to vary each month. The flow for each month is determined by considering the following rule.

| 0. | Flow Regime Mean Monthly Flow (Mmf) | Recommended Environmental Flow (Ef) |
|----|-------------------------------------|-------------------------------------|
| | MMF < 40% Mean annual flow (MAF) | MMF |
| | 40% MAF < MMF < 100% MAF | 40% of MAF |

Table 31: Tessman Method

40% of MMF

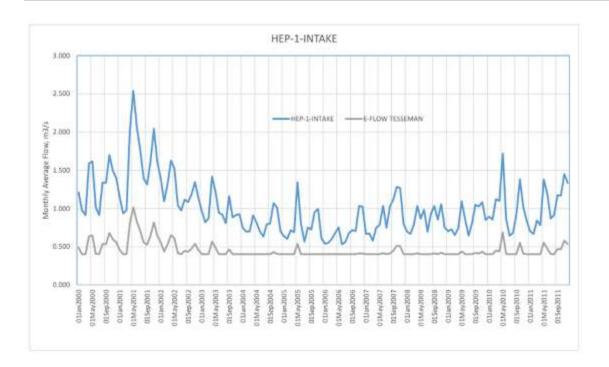
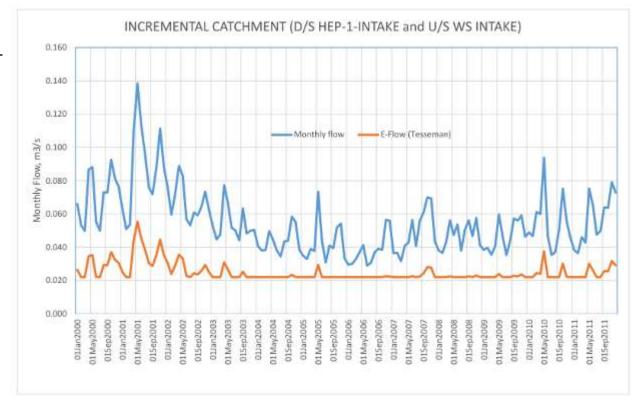
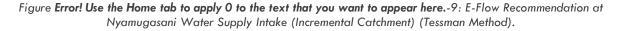


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-8: E-Flow Recommendation at HEP-1 Intake (Tessman Method)



54



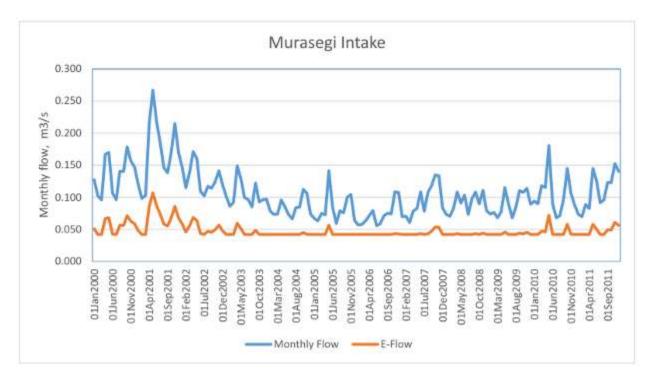


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-10: E-Flow Recommendation at Nyamuruseghe (Murasegi) Intake (Tessman Method)

3.4 Water Supply and Demand Analysis

Based on previous analysis of water availability and water demand, it is proposed that Nyamugasani can supply 2,074 m³/day which is 100% of the dry season yield of the catchment (1-day Q95) lying between the HEP-1 intake and the WS intake. Nyamuruseghe (Murasegi) catchment can supply 3,542 m³/day which is lower than the 1-day Q95 flow estimated at 3,862 m³/day.

The water supply and demand analysis has been verified using the Water Evaluation and Planning (WEAP) model to cover all ranges of flows (wet season, mean flow season and dry season). WEAP was operated on daily mean flows and picks the days of failure to meet demands and reports is as reliability. Moreover, WEAP model assists in understanding the effect of the water supply project on the existing HEP scheme.

3.5 WEAP Water Allocation Model

The water allocation model was built on the framework provided by WEAP. WEAP is basically a node and link model. The Water Evaluation and Planning System (WEAP) developed by the Stockholm Environment Institute Boston Center (Tellus Institute) is a water balance software program that was designed to assist water management decision makers in evaluating water policies and developing sustainable water resource management plans. WEAP operates on basic principles of water balance accounting and links water supplies from rivers, reservoirs, and aquifers with water demands, in an integrated system. WEAP is

a policy-oriented software model that uses water balance accounting to simulate user-constructed scenarios. The program is designed to assist water management decision makers through a user-friendly, menu-driven, graphical user interface. WEAP can simulate issues including; sectoral demand analyses, water conservation, water rights, allocation priorities, groundwater withdrawal and recharge, stream flow simulation, reservoir operations, hydropower generation, and pollution tracking (fully mixed, limited decay). WEAP includes a financial analysis module that given appropriate data on costs, benefits, planning period, and an interest rate can calculate a net present value for a cost-benefit analysis. Groundwater supplies can be included in the WEAP model by specifying a storage capacity, a maximum withdrawal rate, and the rate of recharge. Minimum monthly instream flows can be specified.

The current WEAP model of Nyamugasani consists of seven water supply demand nodes, two environmental flow requirement nodes on the various rivers/streams, three reaches/rivers as water sources, and three diversions representing intakes and seven transmission lines water sources for diverting flow to the points of use from the diversion nodes. The demand nodes are connected to the water sources by means of transmission lines. Moreover, the two mini runoff hydropower plants are included in the model and data on head is obtained from published reports on the web. The synthetic stream flow time series obtained by regionalization approach are supplied as head flow to the reaches/rivers. The schematics of the WEAP model is depicted in figure 11.

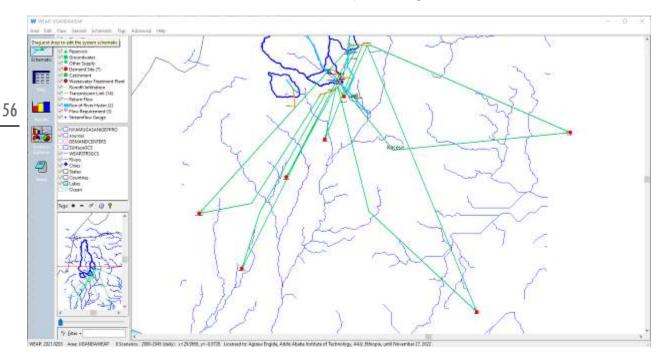


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-11: WEAP Model (Supply and Demand Analysis)

The water balance at each intake is summarized in the table hereunder (based on mean flows). The yield at each intake site is summarized as well. The demand arises from water supply and environmental flow to be allocated. A range of E-flow recommendations are proposed hereunder. The sum of the water supply demand and E-flow should be balanced by the mean flow. The reliability of these sources in meeting the water demand are then ensured to be above 95%.

The flow allocation results at Nyamugasani River are reproduced in table 32. Table 33 shows comparison of E-flow allocation with E-flow requirements. The table shows annual mean flows for the year 2045 (end of design year and year when the demand will be at its maximum). Flows are allocated based on universally accepted norms where domestic water supply is assigned the highest priority and hydropower production is assigned the least priority. E-flow allocation is assigned a priority lower than domestic water supply even though it should be assigned the same priority as the domestic water supply. However, the objective of the E-flow allocation to maintain a minimum of 250 l/s and this could be realized with the assignment of priority adopted in this project.

The flow allocation modelling ensured that the 24 l/s required to meet the domestic water supply demand is achieved with a reliability more than 95%. The **flow allocation results at Nyamugasani River are reproduced in table 32.** The flow allocation model also met the E-flow requirements which should not fall below the minimum threshold of 250 l/s as shown in table 33.

| E-Flow Category Tennant (l/s) | | | | | | | Tessman | |
|---|---------|-------------|-----------|------|------|------|---------|-----|
| | Optimum | Outstanding | Excellent | Good | Poor | Fair | Severe | l/s |
| HEP-1 Inflow | 258 | 370 | 452 | 538 | 578 | 538 | 538 | 444 |
| Flow downstream of HEP-1 Intake flow | 595 | 483 | 401 | 325 | 275 | 250 | 250 | 409 |
| Water Supply from intervening catchment between HEP-1 intake and WS Intake Nyamugasani | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |

Table 32: Flow Allocation for the Year 2045 at Nyamuqasani River (Litres/s)

| E-Flow Category | Tennant (l/s | Tennant (l/s) | | | | | | Tessman |
|---|--------------|---------------|-----------|------|------|------|--------|---------|
| | Optimum | Outstanding | Excellent | Good | Poor | Fair | Severe | l/s |
| Flow downstream of HEP-1 Intake flow | 595 | 483 | 401 | 325 | 275 | 250 | 250 | 409 |
| E-Flow Required | 516 | 400 | 300 | 250 | 250 | 250 | 250 | 400 |

| Table 33: Comparison of E-Flow | Allocation with E-Flow Recommendation | (Nyamugasani River) |
|--------------------------------|---------------------------------------|---------------------|
|--------------------------------|---------------------------------------|---------------------|

The flow allocation results at Murasegi River are reproduced in table 34 and table 35. The table shows annual mean flows for the year 2045 (end of design year and year when the demand will be at its maximum). Flows are allocated based on universally accepted norms where domestic water supply is assigned the highest priority and hydropower production is assigned the least priority. E-flow allocation is assigned a priority lower than domestic water supply even though it should be assigned the same priority as the domestic water supply.

The flow allocation modelling ensured that the 41 l/s (Table 34) required to meet the domestic water supply demand is achieved with a reliability more than 95%. The flow allocation model also met the E-flow requirements for all scenarios of E-flow prescription except "optimum" and "outstanding" cases as shown in table 35.

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Table 34: Flow Allocation for the Year 2045 at Nyamuruseghe (Murasegi) River (Litres/s)

| E-Flow Category | Tennant (l/s) | | | | | | Tessman | |
|------------------------------|---------------|-------------|-----------|------|------|------|---------|-----|
| | Optimum | Outstanding | Excellent | Good | Poor | Fair | Severe | l/s |
| Inflow from catchment runoff | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Water Supply to | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| Nyamugasani WS | | | | | | | | |
| Flow downstream of Intake | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |

| E-Flow Category | | | | Tennant (l/s) | | | | | | Tessman | |
|------------------------|------------|----|---------|---------------|-----------|------|------|------|--------|---------|----|
| | | | Optimum | Outstanding | Excellent | Good | Poor | Fair | Severe | l/s | |
| Flows | downstream | of | the | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Nyamugasani WSS Intake | | | | | | | | | | | |
| E-Flow Required | | | 60 | 51 | 42 | 32 | 11 | 21 | 5 | 43 | |

Table 35: Comparison of E-Flow Allocation with E-Flow Requirements

a) Conclusion

The flow allocation modelling Nyamugasani River ensured that the 24 I/s required to meet the domestic water supply demand is achieved with a reliability more than 95%. The flow allocation model also met the E-flow requirements for Nyamugasani which should not fall below the minimum threshold of 250 I/s.

The flow allocation modelling for Nyamuruseghe River ensured that the 41 l/s required to meet the domestic water supply demand is achieved with a reliability more than 95%. The flow allocation model also met the E-flow requirements for all scenarios of E-flow prescribed.

3.6 Construction Activities

a) Project Phases

- Mobilization Phase This phase will involve mobilization of the construction human resource, equipment, construction materials, erection of temporary worker's camp and storage yard. The location of the project temporary camp will be agreed upon with the local leadership, landowners and contractor.
- Construction Phase All project activities under this phase are supposed to be carried along the tracks, route and access paths within the boundaries of the identified project sites without disturbing or obstructing the neighbors and businesses. To ensure this, the contractors will seal off the site perimeter with corrugated iron sheets or other suitable material during project implementation. In case of trenches, proper barricade have to be applied to warn and protect the people of impending dangers of falling into open pits and trenches. Upon completion of preliminary activities and on-site investigations, actual construction of the project components and facilities will start which will involve:
 - Setting out to demarcate rights of way, work areas, clearing limits. Access paths, detours, bypasses and protective fences or barricades should all be in place before construction begins.
 - Excavation of trenches for water pipe lines;
 - Trench sheeting and bracing to protect collapsible trench side walls;
 - Placing concrete to bases of foundations;
 - Laying of mains water pipes; and
 - Backfilling, disposal of overburden and surface restoration to at least match the condition that existed prior to the water works construction.
- Demobilization Phase Demobilization phase will involve clearing of the project site of all construction and unwanted material. The disposal of any unwanted material will be done by the contractor. The waste materials may include packaging, wood, steel crates, cardboard, wrapping materials, construction debris, boxes, sacks, drums, cans and chemical containers, etc. Damaged areas will need to be restored before commissioning the project. Upon completion of the contractor's obligations, the contractor will hand over the project to MWE, the client.
- *Operation Phase* This will involve employment of operators both skilled and unskilled, operation of the water supply system, maintenance of the facilities put in place, etc.

b) Construction Method

The actual choice of construction method and resources will be the Contractor's responsibility as dictated by the site conditions, productivity and construction schedule. The choice has a bearing on the cost implication. In all construction activities safety of operations is paramount. It entails carrying out of construction activities and operation of equipment by experienced personnel under supervision of experienced and qualified staff and use of well serviced construction equipment in good working condition. Safety on site will be managed by close supervision of the contractor's Health & Safety Officer

and the Engineer's construction Supervision staff of the site activities with regard to the working environment in accordance with the applicable Environment, Safety, Health and Social Safeguard Policy.

c) Plants and Equipment

Because of the nature of the construction activities that will be undertaken, a number of plants and equipment will be used to execute the assignment by the contractor or the sub-contractor(s) and these will include among the following: Graders, Vibrators /Rollers, Water Trucks, Bulldozers, Front End Loader, Vehicles, Containers, Excavators, Water Pumps, Mechanical Tool Boxes, Civil Plate Compactors, Dump truck, Concrete Mixer, Crane and Compactor.

d) Earthworks

The earthworks including site clearance, general filling and excavation, and trenching can be carried out either by manual labor or mechanical equipment where large quantities are involved.

e) Concrete works

Concrete production is expected to be by the use of concrete mixers and/or manual production for the small works and where use of a mixer may be impractical.

f) Structural Steel

The lifting of heavy structural steel sections will be by cranes. The steel sections will be joined by either bolts or welding.

g) Reinforcement Steel fixing

Various sizes of reinforcement steel bars will be cut to required lengths and bent to design shape either manually or by machines and will be placed and fixed for the works by manual labour.

h) Masonry

All masonry work is to be by manual labor using the necessary hand tools.

i) Pipe laying

Pipe laying is expected to be carried out by manual labor using the necessary hand tools and pipe lifting equipment for the heavy pipes.

j) Electro-Mechanical Installations

All electro-mechanical installations are to be carried by manual labor using the necessary hand tools and mechanical lifting equipment.

k) Implementation Schedule

The main objective is to determine a total duration of the project, which equals a "critical path" of events that determine the total duration. The anticipated implementation schedule is as per Table 36.

| Activity | Duration (Months) | | | |
|--------------------------------|-------------------|--|--|--|
| Tendering Process | | | | |
| Tender Evaluation | 4 | | | |
| Contract Negotiation and Award | | | | |

Table 36: Implementation schedule

| Construction of Works | 20 |
|--------------------------|----|
| Defects Liability Period | 12 |
| Total | 36 |

I) Estimated Number of Workers

The contractor is expected to employ about 100 workers on the site both skilled and unskilled. However, this number may keep on fluctuating depending on the need and availability of resources.

3.7 Quality Assurance

It is the responsibility of the supervising consultant to ensure that the desired quality of work is achieved. The materials supplied for the works should not deviate from those specified. At each stage during the construction process, samples of materials have to be taken to the Materials Laboratory for testing to ensure conformance to the specifications.

3.8 Environmental and Social Considerations

The potential impact of the water supply scheme infrastructure on the landscape and ecology were considered, this was mainly from the field studies. These factors have been subsequently addressed within the interactive process of environmental assessment and the findings presented in this ESIA report.

- Noise and proximity of housing: The proposed water scheme infrastructure was judged to lie sufficiently distant from dwellings and settlements; that adequate separation distances could be achieved to avoid noise nuisance during both the construction and operation phase given the nature of the development. In addition, apart from the vehicle movements, the noise in this kind of project is minimal.
- Site Topography: The project areas especially for the intake is located on a lower altitude compared to the end users. More so the main reservoir will be located on a high altitude compared to end water users.
- Land ownership: The proposed site for the intake and other water infrastructure was secured by DWD and Kasese District Local Government. The transmission lines will pass along road reserves but where peoples land will be affected, local leaders and the local communities have been engaged. Resettlement Action plan (RAP) was conducted for survey, valuation and subsequent compensation for those whose property will be affected during the construction especially the transmission lines and for some of the water infrastructures. They are no resettlement issues.
- Community Opinion: Water supply systems elsewhere in Uganda have not attracted local concern and resentment among the local residents. Likewise, in the case of the Nyamugasani Water Supply System, the development would not have much significant negative impact on the dwelling and settlements. The communities consulted welcomed the proposed project.

3.9 Technical and Design Considerations

There is a wide range of construction and furnishing materials which can be sourced locally for example sand, aggregates, bricks, etc. During construction, certified equipment and modern technology e.g. Water pipes, Storage Reservoirs, metal bars and fittings that meet the Uganda National Bureau of Standards (UNBS) requirements. Implementing the Water Supply System according to approved designs will be a priority as it will lead to the provision of improved quality and quantity of water supplied, reduced morbidity and increased productivity of households; and increased enrolment of children in educational institutions, better livelihood opportunities and induced development and employment opportunities.

Therefore, it will be paramount that the client and the Operator ensure that the Water Scheme has the following in place:

- The sites are recommended for fencing in order to prevent contamination of the source and for the safety of hydraulic structures and installations for each of the project components.
- Well-designed drainage system at the Water offices
- Consideration of noise and traffic generated by the trucks to and from the site during the construction, solid waste management itself at the site both during construction and operation (especially at the offices premises)
- Security mechanisms including fire safety mechanisms and security guard at all the water infrastructure facilities
- There is a potential of utilising solar powered pumps and reference can be made about the proposed energy sources of energy for the water works.
- Well-designed access route from the main road.

4 ESIA METHODOLOGY

4.1 Introduction

This section outlines the methodology that was used to assess the environmental and social baseline and to identify, predict & assess the environmental and social impacts of the project on each relevant environmental component. It also covers the methodology for the identification of mitigation and monitoring measures that was recommended to address these impacts and identification of relevant stakeholders. The methodology consists of a review of Uganda's institutional arrangements, regulations and policies. Environmental and social impacts of the proposed project will be predicted in relation to environmental and social receptors and natural resources while comparing prevailing pre-project conditions and post-project situations.

The requirement for environmental impact assessment in Uganda is set out by the *National Environment Act No. 5 of 2019* and the *Environmental and Social Impact Assessment Regulations of 2020*. This process will be guided by the Environmental Impact Assessment (EIA) Guidelines (NEMA, 1997) and the process is schematically presented in Figure 12.

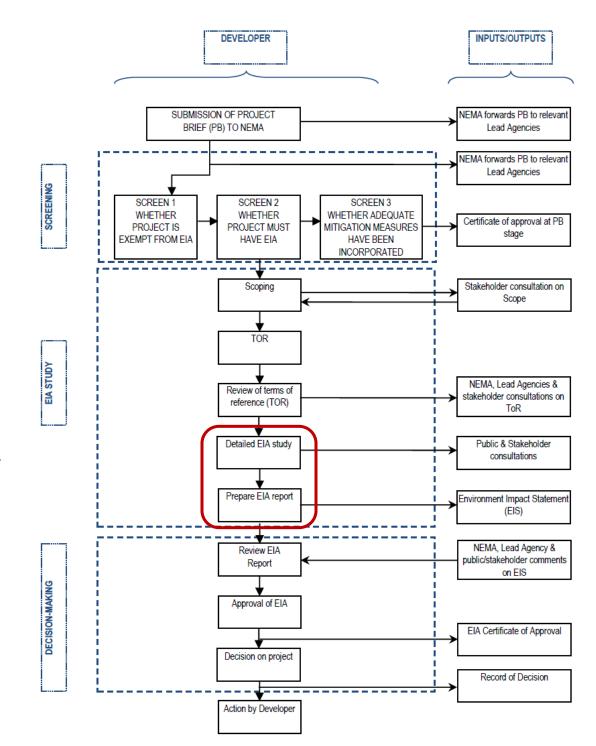


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-12: ESIA process that will be adopted as provided for under the Laws of Uganda

4.2 Physical Environment Survey

Baseline ambient noise levels, air quality and water quality were measured, not only to inform construction contractors about the pre-construction conditions existing at proposed sites, but also the first annual environmental audit. These were determined through the following actions:

4.2.1 Ambient Noise Assessment

Baseline noise measurements were undertaken at locations around the proposed construction sites with potential receptors such as local communities and institutions around the water abstraction point, proposed site for construction of water treatment plant etc. Measurements of ambient noise levels were carried out using a precision integrating sound level meter, with an active range of 0-130 decibels (dB) and complying with IEC 651 and ANSI S4 standards. A Casella CEL-621C digital noise logger was set to record for a sample period of 10 minutes at each of the selected locations. The assessment procedure involved recording the LA_{MAX} and LA_{MIN} decibel levels. Measurement points were recorded using a Global Positioning System (GPS) receiver and the noise sources together with the ambient environment at each location noted. The obtained results were compared against the *National Environment (Noise Standards and Control) Regulations, 2003.* The regulations require that persons to be exposed to occupational noise exceeding 85 dBA for 8 hours in a day should be provided with requisite hearing protection.

4.2.2 Air Quality Assessment

Baseline air quality was measured using Digital MultigasRAE Meter for air composition (Oxygen, VOC and COx), Casella Microdust Pro Digital meter (PM_{2.5} concentrations) and a Ibrid MX 6 Portable Multi Gas Monitor (SOx, NOx). Measurement points or locations were selected basing on presence of potential receptors (such as construction sites for water treatment etc.) and an averaging period of 8 hours was used. For gaseous emissions.

- The equipment was powered on and left in measuring mode for the first two minutes to allow zeroing and self-calibration. This will be followed by 10 minutes of measurement to allow digital readings to stabilize before they could be recorded.
- Measurements were conducted at each of the selected points to determine whether there would <u>65</u> be any gaseous emissions detected.
- Values for Carbon monoxide (CO), Oxygen (O₂), Volatile Organic Compounds (VOCs), Sulfur oxides (SOx) and Nitrogen Oxides (NOx) were recorded.

For particulate matter.

- The equipment was allowed for two minutes for zeroing down and thereafter, it captured the samples for 5 minutes with an interval of 10 seconds.
- For every sampled point, a GPS coordinate was recorded.

4.2.3 Water Quality

In situ water quality measurements were recorded at the proposed water abstraction points. In situ water quality sampling is the measurement of physical and chemical parameters in a water body at the time of sampling. A multi-parameter water quality instrument (Multi-probe Hach HQ40d) was used for in situ measurements and the following parameters were assessed i.e. dissolved oxygen (DO), temperature, potential of hydrogen (pH), electrical conductivity (EC) and turbidity. In situ measurements were done because the measured parameters change rapidly (e.g. temperature) and the data was required to aid the interpretation of other water quality results.

Water samples for physical, chemical and bacteriological quality were further collected at the source of raw water. Water samples were transported in a cooling box on ice to the laboratory for analysis. The water samples were analysed at the Directorate of Government Analytical Laboratory, Ministry of Internal Affairs, Wandegeya and the Test Results of the Water Quality Analysis are presented in this ESIA report. Metal ions were quantified from an acidified sample, at respective wavelengths, using Atomic Adsorption Spectrometry technique, Shimadzu 6300. A five-point calibration curve was used to get the concentration

of each metal ion. Nitrates, phosphates, sulphates, chlorides and ammonia were determined by UV-VIZ Spectrometry technique, Shimadzu, 1601 at respective absorption wavelengths. Coliforms and E. coli were determined by Membrane Filtration technique at 37°C and 44°C respectively. All determinations were done in duplicate. The tests were measured in conformity to US EAS 12: 2014 Specification of natural Potable Water and in conformity to Uganda's National Standards for Potable Water, which are within World Health Organisation (WHO) standards.

4.3 **Biological Environment Survey**

4.3.1 Flora Assessment

Transect walks were taken along the banks of River Nyamugasani and Nyamuruseghe; routes proposed for the pipelines, water storage tanks and records were made of the vegetation along the stretch. While some plant species were identified on site, specimens of others were collected and taken for confirmation at the Makerere University Herbarium. Additional information was obtained through consultation with communities on the local names, use and importance of some plant species. An inventory of the impacted vegetation was taken. The International Union for Conservation of Nature's Red List of Threatened Species (IUCN 2022) was utilized for categorization of species. Some of the tools that were used included: Plant press, Secateurs, Ivy tags, Measuring tape, Diameter tape and camera.

4.3.2 Fauna Assessment

4.3.2.1 Birds

Surveys were conducted along the areas planned for the water supply and sanitation systems. Bird species 66 occurrences was surveyed through point count surveys using observations, hearing and consultations during which all species detected and encountered were recorded. Great emphasis was placed on species of conservation importance. Species identification was based on Stevenson and Fanshawe (2002) while some species were categorised according to IUCN (2022). Some of the tools that were used included: Binocular and camera.

4.3.2.2 **Butterflies**

Random sweeping using sweep net was done (biodiversity rapid assessment) and it involved a transect walk through the areas recording all butterfly species encountered on wings. Sample specimens were taken for most of the species, except for those whose identification could be easily confirmed in the field. Opportunistic observations were included to help build the species list. Each of the butterfly species was assigned to one of the ecological categories (Akite, 2008). Some of the tools that were used include: insect net and camera.

4.3.2.3 Herpetiles

Both reptiles and amphibians were surveyed using Visual Encounter Survey (VES) method (Rodda et al., 2007). Visual Encounter Surveys were conducted by observation while walking through sites proposed for the project for a prescribed period of time, visually searching systematically along transects for animals. VES involved a search on the ground, trees and grasslands. Herpetiles were surveyed during the day from 08:00 am to 07:30 pm (Spawls et al., 2006). Some of the tools that were used include: A camera and snake stick.

4.4 **Aquatic Survey/Assessments**

Establishments made along, inside, or near a river or its catchments have a variety of effects, including changes in water flow, physic-chemical, and biological condition, such as vegetation, both micro and macrophytes, and fauna, such as fish and invertebrates' populations. Information on the invertebrates and fish ecological conditions along rivers Nyamuruseghe and Nyamugasani in Kasese district was undertaken between 7th and 10th November 2022. Field samples and site observations were undertaken at **three** major locations namely Upstream, Middle (mid-section), and downstream (further upstream) along the separate rivers.

The overall objectives of the aquatic ecology study were to determine the baseline status of macroinvertebrates and fisheries biodiversity in the section of the rivers and document the aquatic biodiversity tentatively to be affected by the proposed project. A sampling site was identified in each zone, where GPS coordinates were recorded for these sites. Aquatic ecology studies at these sites included general characterization of the river environment, invertebrates, and fish sampling.

| River Nyamuru | seghe | | |
|---------------|--|---|---|
| Sampled | Upstream | Mid-section | Downstream |
| location | | | |
| GPS | 00º09'24.062''N | 00º09'22.599''N | 00º09'18.416''N |
| coordinates | 29 ⁰ 55'46.223''E | 29 ⁰ 55'46.679''E | 29 ⁰ 55'45.336''E |
| Description | Narrow and shallow stream of clear running water about 0.35m deep and 4m width (Plate1). Forested edge with grass creepers and cultivation of Eucalyptus, banana and fruits trees (avocado and jackfruit). | River width was approx. 5m, depth about 0.3m. In the valley close to the shoreline the vegetation was dominated by the creepers (<i>Ipomea</i> spp.) but also, cultivation of bananas and <i>Eucalyptus</i> | River width was approx. 5m, depth about 0.3m; depth about 0.13m. riverbed with submerged pebbles and boulders. At the shoreline were creeping herbaceous vegetation and spaced trees. In the valley were banana plantation. On the top of the banks were planted trees mainly <i>Eucalyptus</i> trees. Substrate : pebbles |
| | Substrate : boulders and pebbles | Substrate: pebbles | |
| River Nyamuga | sani | | • |
| GPS | 00º09'02.386''N | 00º09'00.210''N | 00º08'58.328''N |
| coordinates | 29 ⁰ 55'34.877''E | 29 ⁰ 55'35.172''E | 29 ⁰ 55'37.729''E |
| Description | River width approx. 6m. Substrate : boulders | River width approx. 6-7m, worked just at the edge, high | River width approx. 7m. Cultivation of Coffee mangos, jackfruits. |
| | and pebbles. No sand, steep excavated banks | excavated banks | Substrate: boulders more of pebbles. |

Table 37: Site location (longitude/latitude) Description at the proposed project areas, November 2022.



Plate 5: Typical upstream site on River Nyamuruseghe

4.4.1 Macro-invertebrates

Working in waders and heavy-duty hand gloves, A single pole kick net was used to collect the benthic macroinvertebrates (Plate 6) Two points were sampled from each site and the collected samples were added together to maximize on chances of the rare taxa. The two Hands in heavy-duty gloves could be used to scrub on the substrates/ rocks in order to dislodge organism clinging to the substrates where foot might not work well. The kicking was done for close two to three minutes. The samples from the individual sites were placed in separate polyethene Ziploc bags, labelled and preserved with 5% formalin solution to be taken to the Laboratory for analysis.



Plate 6: Sampling benthic macroinvertebrates using a single pole kick net on River Nyamuruseghe, November 2022

In the Lab, each sample was rinsed clean of the preservative with tap water and placed on a spacious white flat-bottomed tray and just enough water added to spread it. Essentially all the benthic macroinvertebrates were then sorted out using forceps and placed into sample bottles containing appropriate label and ethanol (70%). Individual samples were later rinsed with water, placed on smaller trays. The different benthic macroinvertebrates from each sample were isolated to separate Petri dishes, identified with the help of dissecting microscope and taxonomic manuals (Merritt and Cummins, 1984; Pennak, 1953; Day et al., 2003, and de Moor, 2003) to mainly genera level. Individuals of each taxon were counted and recorded. The individual counts of macroinvertebrates were expressed as individuals per

square meter (ind. m⁻²). Results from each site were presented in the table (**Table 43**). A family Biotic Index (FBI) was calculated from:

 $FBI = (\sum t^*x)/n$; where t = tolerance value, x = number of individuals within the taxon and n = total number of organisms in the sample) to have an idea about the water quality status.

4.4.2 Fish

Fish sampling was done using a HALLTECH HT- 2000 Battery Backpack electrofisher with a 2 m long handheld anode (47 cm diameter, net mounted; approx. 50 -950V, 5 -250 Hz and Maximum power of 2kW) (Plate 3). Sampling included a wide variety of macro-habitats such as marginal vegetation, behind rock boulders, in pools and riffles etc. At each sampling site, electrofishing was done along approximately 100 -150 m of the river channel, within about 20 – 30 minutes. The caught fish were identified using Greenwood (1966) and in some instances the fishes if stunned and not caught but identified were also recorded.



Plate 7: Sampling for fish a HALLTECH HT-2000 Battery Backpack electrofisher on River Nyamuruseghe, November 2022

Biometric data collection was based on standard operating procedures from LVFO (2007). Total fish length (TL) was measured to the nearest mm. Individual weights of fish were determined to the nearest 0.1g using a digital scale (model CS-10KWP-IP65). Fish species composition and relative abundance were calculated from the catch statistics. Generally, the macroinvertebrates and fish biodiversity, abundance and distribution were compared to existing studies within the same rivers and those with similar characteristic within the Mt. Rwenzori region.

4.5 Social Environment Survey

4.5.1 Stakeholder Identification and Analysis

A rigorous stakeholder analysis was carried out prior to the commencement and during the consultation process. This activity enabled the consultants to identify all the key entities- individuals, groups and communities, with a stake or those likely to be affected or to affect the proposed project in any way. Key stakeholders were identified at the national, regional, District, Sub County and community level through interviewing experts, brainstorming and document review. Stakeholder identification and engagement is

an on-going process that requires regular review and updating. Therefore, the stakeholder list was updated from time-to-time.

The ESIA team collected and analysed data and held consultations with various stakeholders and other interested and affected parties involved, to ensure that all existing data and information relevant to the assignment was obtained. The ESIA team undertook site survey to determine the area of influence and gathered information under several key areas such as:

- Socio-economic conditions in the surrounding communities such as health and infrastructure,
- Current land use in the proposed project sites.

Participatory stakeholder identification was used in identifying and analysing the key stakeholders, including planning for their participation. Therefore, it was the starting point of the participatory processes and provided the foundation for the design of subsequent stakeholder activities throughout this study. Identified stakeholders are summarised in Table 38 together with the method of engagement:

| | Category | Identified stakeholders | Method of | Role |
|---|----------|---|------------------------------------|---|
| | | | engagement | |
| 0 | National | National Environment Management Authority; Ministry of Gender, Labour and Social Development (MGLSD) among others | Key Informant Interviews (KIIs) | -NEMA is be responsible for the review and approval of ESIAs, post-implementation audits and monitoring of approved projects. -Coordinate, inspect, supervise and monitor project activities to ensure that the environment and natural resources are not depleted but managed sustainably. -MGLSD under department of Occupational Health and Safety (OHS) is responsible for inspecting and registering the workplace and monitoring of conditions under which employees on the project are subjected. |
| | Regional | Regional offices of the Ministry of Water and Environment including: Rural Water and Sanitation Regional Centres (RWSRCs), Umbrella Authorities (UAs), NEMA, Water Management Zones (WMZs) etc | Klls | Construction supervision including the implementation of the proposed ESMP and implementation of the WSPP. |
| | District | District Local Government of Kasese. Specifically, the following offices of Water, Natural Resources, Planning, Health, Production and Community Development and the political wing | KIIs | Mobilize support for the project. Monitor social-environmental impacts both during construction and operation phases. |

Table 38: Categorization of Stakeholders to be engaged during ESIA

| | including the Chairperson LC V and Councillors representing the beneficially areas etc | | |
|------------|--|--|---|
| Sub County | Sub county Chief, Community Development Officer, LC III Chairpersons etc | Focused Group Discussions (FGDs and KIIs | Mobilize local communities and key stakeholders to participate in EIA consultations and/or public hearings. |
| Community | Local Council I, Landlords of sites where the water infrastructure will be constructed | FGDs and KIIs | -Develop construction (works) schedules in their respective areas. -Participate in the scheduled meeting regarding the project activities and progress -Identify mitigation measures of the environmental and social issues -Monitor the progress of the project activities Input in the planning and identification of water and sanitation facilities. |

4.5.2 Sampling and Selection of Respondents

The sampling process was primarily purposive. The ESIA targeted particular individuals, groups and communities that have a stake in the proposed project. As thus, only such entities as identified in the stake holder analysis were selected to participate in the consultation process. Key informants at various levels and from different specialties, right from the community were also purposively selected to contribute their views on the impact of the project. This widened the perspectives on the projects, enrich the data collected and ultimately provided deep insights about the knowledge and attitudes of the various stakeholders towards the project.

Socio-economic surveys were conducted to define impacts and to provide a monitoring baseline following an initial desktop data review. Effective resettlement planning entails conducting a displaced persons' census and an inventory of affected land and assets at the household, enterprise, and community levels. The data was collected via a mixed-method approach incorporating both quantitative and qualitative assessments, as well as an assessment of available secondary resources. Quantitative surveys were conducted for all PAHs.

A total of 255 households were surveyed as part of socio-economic study. The vast majority 87.84% of the survey respondents were the head of their household. Perspectives of both genders were captured and represented, with 75.69% male and 24.31% female respondents in addition to gender-specific Focus Groups (FGs) and Key Informant Interviews (KIIs).

Qualitative data was gathered to provide supporting details for the quantitative data collection surveys. Qualitative data collection was based on KIIs, FGs, and participatory methodologies including village transect walks. Household socio-economic surveys was undertaken alongside the cadastral and asset surveys. The land and asset component measured and described fixed assets for each household including land holdings, land type, buildings, crops, and trees. This information was collected to inform

compensation agreements and to assist in resettlement impact assessments. Details of the household survey are presented in the RAP and Evaluation Report.

4.5.3 Study Methods

Stakeholder analysis sought to answer the following fundamental questions: Who are the key stakeholders (primary/secondary)? What are the interests of these stakeholders? How have they been and or will be affected (positively/negatively)? Which stakeholders are most important for the success of the study? How will various stakeholder groups participate throughout the study? The following methods will be used for the social environment survey.

An interview guide was used for both KIIs and FGDs to elicit both baseline information and key concerns/issues from the selected key informants. KIIs and FGDs also aimed at information feedback, education and communication (IEC) to both the interested and affected stakeholders/ community and the following questions were utilized for ESIA among others:

- i. How will the proposed project for water supply and sanitation benefit the targeted communities?
- ii. How can the anticipated positive impacts and or benefits be enhanced?
- iii. Do you feel the proposed project is likely to have risks and or impacts on the environment and the population? If yes, how will the proposed project impact negatively on the following aspects:
 - Physical environment (geology and soils, hydrology and water resources (quantity and quality, visual and aesthetic quality, air quality, noise etc.)
 - Biological environment (vegetation and wild animals)
 - Social environment (land use, population, housing, employment, transportation and traffic, public services, utilities, public health and safety, cultural resources etc.)

iv. Can you propose possible mitigation measures that can be put in place to ensure that the anticipated negative impacts are either avoided, minimized and mitigated from causing unintended harm to the environment or people?

| No | Date of | Stakeholders | Location (Villages Engaged) | Attendance | | | | | |
|-------|----------------------------------|--|------------------------------|------------|------------|-----------|--|--|--|
| • | engagement | Engaged | | Male | Femal e | Tot al | | | |
| Distr | District Inception Consultations | | | | | | | | |
| 1 | 14.10.2022 | District Leaders | Kasese District Headquarters | 12 | 04 | 16 | | | |
| Subo | county Consulta | tions | | | | | | | |
| 2 | 17.10.2022 | Subcounty Leaders and Opinion Leaders | Kyarumba Subcounty | 05 | 01 | 06 | | | |
| 3 | 17.10.2022 | Subcounty Leaders and Opinion Leaders | Kyarumba Tow Council | 07 | 04 | 11 | | | |
| 4 | 17.10.2022 | Subcounty Leaders | Kyondo Subcounty | 05 | 03 | 08 | | | |

Table 39: Schedule of stakeholder engagements

| No | Date of | Stakeholders | Location (Villages Engaged) | Attendance | | |
|-----|------------------------|--|--|------------|------------|-----------|
| • | engagement | Engaged | | Male | Femal e | Tot al |
| | | and Opinion Leaders | | | | |
| 5 | 19.10.2022 | Subcounty Leaders and Opinion Leaders | Kisinga Subcounty Hall | 10 | 02 | 12 |
| 6 | 19.10.2022 | Subcounty Leaders and Opinion Leaders | Kisinga Town Council Hall | 08 | 04 | 12 |
| 7 | 20.10.2022 | Subcounty Leaders and Opinion Leaders | Munkunyu Subcounty Hall | 12 | 15 | 27 |
| 8 | 21.10.2022 | Subcounty Leaders and Opinion Leaders | Nyakatonzi Subcounty Hall | 11 | 04 | 15 |
| 9 | 21.10.2022 | Subcounty Leaders and Opinion Leaders | Kinyamaseke Town Council | 08 | 02 | 10 |
| 10 | 31.10.2022 | Subcounty Leaders and Opinion Leaders | Muhokya Town Council | 09 | 03 | 12 |
| 11 | 31.10.2022 | Subcounty Leaders and Opinion Leaders | Kahokya Subcounty Hall | 19 | 05 | 24 |
| 12 | 07.11.2022 | Subcounty Leaders and Opinion Leaders | Kitabu Subcounty Hall | 07 | 01 | 09 |
| Com | munity/ Lower | Level Consultations | | | | |
| 13 | 17.10.2022 | Leaders and Community | Mughanza Village Kyarumba Subcounty | 33 | 23 | 56 |
| 14 | 17.10.2022 | Leaders and Community | Kyondo Subcounty (Kasithu, Musasa, Kasokero, Kaghorwe, Kinyabisiki, Burumbika) | 12 | 24 | 36 |
| 15 | 17.10.2022 | Leaders and Community | Kabughabugha (Kibathi, Bwethe, Kabughabugha) | 14 | 17 | 31 |
| 16 | 18.10.2022 | Leaders and Community | Musasa Trading Centre (Musasa, Kasithu, Bwethe, Kinyabisiki) | 41 | 10 | 51 |
| 17 | 18.10.2022 Leaders and | | Kisinga Trading Centre (Kisinga cell, Kataleba, Karwemera, Kayembe, Kakunyu) | 32 | 07 | 39 |

| No | Date of | Stakeholders | Location (Villages Engaged) | Attendance | | |
|----|------------|--------------------------|--|------------|------------|-----------|
| • | engagement | Engaged | | Male | Femal e | Tot al |
| 18 | 18.10.2022 | Leaders and Community | Kaberere Trading Centre (Kinyabisiki, Kaghorwe, Kaberere) | 35 | 08 | 43 |
| 19 | 19.10.2022 | Leaders and Community | Kasithu Parish 07 | | 09 | 16 |
| 20 | 20.10.2022 | Leaders and Community | Kawembe Trading Centre (Kisanga) | 15 | 02 | 17 |
| 21 | 20.10.2022 | Leaders and Community | Kyalhughuthu Trading Centre | 16 | 06 | 22 |
| 22 | 27.10.2022 | Leaders and Community | Mughanza Village. | 11 | 11 | 22 |
| 23 | 30.10.2022 | Leaders and Community | Kasemire Trading Centre (Kasemire) | 08 | 12 | 20 |
| 24 | 30.10.2022 | Leaders and Community | Nsenyi Trading Centre | 31 | 12 | 43 |
| 25 | 31.10.2022 | Leaders and Community | Mughete Trading Centre | 41 | 08 | 49 |
| 26 | 31.10.2022 | Leaders and Community | Kirambairo Trading Centre | 43 | 03 | 46 |
| 27 | 31.10.2022 | Leaders and Community | Kinyateke Trading Centre | 56 | 18 | 74 |
| 28 | 31.10.2022 | Leaders and Community | Kahokya Trading Center | 46 | 08 | 54 |
| 29 | 31.10.2022 | Leaders and Community | Kibisire Trading Center | 11 | 02 | 13 |
| 30 | 01.11.2022 | Leaders and Community | Karujumba I Trading Centre | 07 | 04 | 11 |
| 31 | 01.11.2022 | Leaders and Community | Katerela Trading Centre (Kanyabusogha) | 37 | 37 10 | |
| 32 | 01.11.2022 | Leaders and Community | Kabirizi Trading Centre | 39 | 45 | 84 |

| No | Date of | Stakeholders | Location (Villages Engaged) | Attendance | | | |
|----|------------|---|------------------------------------|------------|------------|-----------|--|
| • | engagement | Engaged | | Male | Femal e | Tot al | |
| 33 | 01.11.2022 | Leaders and Community | Kighenge Trading Centre | 38 | 07 | 45 | |
| 34 | 01.11.2022 | Leaders and Community | 5 | | 06 | 29 | |
| 35 | 02.11.2022 | .11.2022 Leaders and Kagandho I Cell Community | | 07 | 00 | 07 | |
| 36 | 02.11.2022 | Leaders and Community | Kamughobe Trading Centre | 33 | 25 | 58 | |
| 37 | 02.11.2022 | Leaders and Community | Kajwenge Trading Centre | 33 | 03 | 36 | |
| 38 | 03.11.2022 | Leaders and Community | Kirembo | 16 | 06 | 22 | |
| 39 | 04.11.2022 | Leaders and Community | Nkunyu I Trading Centre | 42 | 43 | 85 | |
| 40 | 04.11.2022 | Leaders and Community | Balinandi Trading Centre (Kisithu) | 67 | 51 | 118 | |
| 41 | 07.11.2022 | Leaders and Community | Bwanika Trading Centre | 10 | 02 | 12 | |
| 42 | 08.11.2022 | Leaders and Community | Nyakatonzi | 10 | 03 | 13 | |
| 43 | 09.11.2022 | Key Informative Interview | Katunguru | 01 | 00 | 01 | |
| 44 | 09.11.2022 | Key Informative Interview | Kasenyi Landing Site | 01 | 00 | 01 | |
| 45 | 09.11.2022 | Key Informative Interview | Kasenyi Landing Site | 00 | 01 | 01 | |
| 46 | 09.11.2022 | Leaders and Community | Hamukungu | 25 | 06 | 31 | |
| 47 | 09.11.2022 | Leaders and Community | Kasubi Kibati | 14 | 08 | 22 | |
| 48 | 09.11.2022 | Leaders and | Mwaro Village- Kasenyi | 37 | 12 | 49 | |

| No | Date of | Stakeholders | Location (Villages Engaged) | Attendance | | |
|----|------------|------------------------------|-----------------------------|------------|------------|-----------|
| • | engagement | Engaged | | Male | Femal e | Tot al |
| | | Community | | | | |
| 49 | 10.11.2022 | Leaders and Community | Kahendero Landing Site | 30 | 09 | 39 |
| 50 | 11.11.2022 | FGD Cattle Keepers | Nyakatonzi Trading Centre | 15 | 00 | 15 |
| 51 | 11.11.2022 | FGD Business Women | Kilambairo Trading Centre | 01 | 12 | 13 |
| 52 | 31.10.2022 | Key informative interview | Lake Katwe Primary Sch. | 01 | 00 | 01 |
| 53 | 31.10.2022 | Key informative interview | Muhokya Town Council | 00 | 01 | 1 |
| 54 | 11.11.2022 | Key informative interview | Kasese Municipality | 01 | 00 | 1 |
| 55 | 14.11.2022 | Key informative interview | Karudec Offices | 01 | 00 | 1 |
| 56 | 31.10.2022 | Key informative interview | Subcounty Offices | 01 | 00 | 1 |
| 57 | 01.11.2022 | Key informative interview | Kabirizi Trading Center | 01 | 00 | 1 |
| 58 | 13.11.2022 | Leaders and Community | Munkunyu Subcounty | 98 | 33 | 131 |

4.5.3.1 Document Review

These included: existing data, existing environmental data, existing reports/documents, pre- and postimplementation of management/construction decisions, EIA reports (ESIA study done in the year 2017) and ESMPs in place. Examples of these documents include: Kasese District Development Plan 2021/22, District State of Environment Report, Engineering Design Report for Nyamugasani Water Supply and Sanitation System (July. 2022) etc.

4.5.3.2 Key Informant Interviews

Key Informant Interviews (KIIs) were held with civil servants (e.g. Chief Accounting Officer, District Natural Resources Officer, District Environment Officer, District Community Development Officer, District Water

Officer, Sub County Chiefs etc.), political leaders (LC V Chairperson, LC III Chairperson) and representatives of the management structures who are responsible for environmental management activities on various levels (e.g. the Village Natural Resources Management Committees). Key informants were interviewed and selected on the basis of their roles as leaders, specialized knowledge and experience on the subject under study.

4.5.3.3 Focus Group Discussions

Focus Group Discussions (FGDs) were held with stakeholders at Sub County, Parish and Village levels. FGDs were used as a qualitative approach to gain an in-depth understanding of social issues. The method aimed at obtaining data from a purposely selected group of individuals on the proposed project activities. Groups of people with the same social, economic and/gender characteristic were clustered together (with between 8-12 members each) and a guided discussion was held with these groups with the ultimate goal of eliciting community baseline information regarding the project development, impacts and issues of concern and the mitigation measures.



Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-13: Meeting with Kyarumba Town Council leaders

4.5.3.4 Transect Walks

Transect walks were carried around to gather more information through observation regarding the social and economic activities taking place, impact extents and also stimulating informal interaction with the community members and their experiences that helped in understanding the community dynamics in the project areas. A camera was used to take pictures of interest within the project areas that are presented in this report.



Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-14: Some of the economic activities in Kyarumba Subcounty

4.6 Impact Assessment and Evaluation

Based on the project details and the baseline environmental and social status, potential impacts as a result of the construction, operation and decommissioning of the proposed project activities have been identified. An impacts analysis criteria that takes into account the magnitude or intensity of impacts based on project activities and sensitivities in the project area that was identified in the environmental and social baseline. Impact characteristics considered are described in Table 39 and include:

- Type of impact, where direct or indirect
- Nature where positive or negative
- Duration of impact
- Intensity of impact
- Likelihood of impact occurring
- Spatial extent of area of impact
- Sensitivity of receptor of impact

The first six parameters give a sense of magnitude of impact, which together with sensitivity; result in an overall severity of impact.

| Criteria | Description |
|----------------|---|
| Type of Impact | Direct - An impact that appears immediately as a result of an activity of the project. For example, the loss of vegetation is a direct impact of site clearing. The direct impacts would be experienced mainly during the construction process, and include effects on the physical environment, health and safety of the construction workers. Indirect - An impact that is related to the project but that arises from an activity of the project at a secondary level. For example, the demand for supplies and services may cause indirect impacts on the local economy by increasing indirect employment opportunities. |
| Nature | PositiveNegative |
| Duration | The lifetime of the impact; this is measured in the context of the life-time of the proposed development. Whether the Impact will be: Intermittent – not occurring at all times. Temporary-only for a short period. Short term - the impact will either disappear with mitigation or will be mitigated |

Table 40: Impact Assessment and Evaluation

| r | | - |
|--------------------------------|---|---|
| | through natural process in a span shorter than the construction phase. | |
| | Medium term - the impact will last for the period of the construction phase, | |
| | thereafter it will be entirely negated. | |
| | Long term - the impact will continue or last for the entire operational life of the | |
| | development, but will be mitigated by direct human action or by natural processes | |
| | thereafter | |
| | Permanent | |
| Intensity | • Whether or not the intensity (magnitude) of the impact would be high, medium, low | |
| | or negligible (no impact). An attempt to quantify the impacts of components on the | |
| | affected environment will be described as using following definitions: | |
| | Negligible | |
| | Low - where impact alters the affected environment in such a way that natural | |
| | processes of functions are not affected in any significant way. | |
| | Moderate - where the affected environment is altered, however, function and | |
| | process continue, albeit in a modified manner. | |
| | High - where function or process of the environment is seriously altered and | |
| | disturbed to the extent where it temporarily or permanently ceases. | |
| Spatial Extent | The physical and spatial size of the impact; a description of whether the impact | 1 |
| | would occur on a scale described as follows: | |
| | Site - whether the impact will be within limited locale of the project site / study area | |
| | affecting the whole or measurable portion of the area. | |
| | Local - whether the impact will affect the environment or communities along the | |
| | border of the study area or in the extended area adjacent to the site or perhaps | |
| | outside the immediate environment. | |
| | Regional - whether the impact extends beyond the study area affecting areas on a | 7 |
| | regional scale. | - |
| Likelihood | The probability or likelihood of the impacts actually occurring. The impact may occur | - |
| Likeimood | for any length of time during the life cycle of the activity, and not at any given time. | |
| = | | 1 |
| | The probability that a certain impact will occur on scale described below: | |
| | oncertain insumerent information to determine its probability. Decause the | 1 |
| | precautionary principle is followed, this increases the significance of the impact. | |
| | improbable the impact is unintery to occur. | |
| | Probable - the impact could possibly happen, and mitigation planning should be undertaken | 1 |
| | undertaken. | 1 |
| | Highly probable - it is most likely that the impact will occur at some or other stage | |
| | of the development. | 1 |
| | Certain - the impact will take place regardless of any prevention plans, and only | |
| | mitigatory actions can be relied on to contain the effect. | - |
| Sensitivity | Degree of change effected on natural processes or people's livelihoods; the | |
| | sensitivity of the receptor of the impact to change | |
| | Very low | |
| | Low | |
| | Moderate | |
| | High | 1 |

Table 40 below presents a quantitative format for ranking impacts based on parameters above, summarised as magnitude and sensitivity.

Table 41: Quantitative Rating of Impacts

| Significance | | | Sensitivity | | | | |
|--------------|----------|---|-------------|----------|----------|----------|--|
| | | | Very low | Low | Medium | High | |
| | | | 1 | 2 | 3 | 4 | |
| | Vorylow | 1 | 1 | 2 | 3 | 4 | |
| | Very low | I | Negligible | Minor | Minor | Minor | |
| de | | 2 | 2 | 4 | 6 | 8 | |
| litu | Low | | Minor | Minor | Moderate | Moderate | |
| Magnitude | Medium | 2 | 3 | 6 | 9 | 12 | |
| Ě | wealum | 3 | Minor | Moderate | Moderate | Moderate | |
| | High | 4 | 4 | 8 | 12 | 16 | |
| | High | 4 | Minor | Moderate | Moderate | Severe | |

4.7 Identifying Mitigation Measures and ESMP Preparation

Possible mitigation measures considering all the project implementation phases have been identified and described in detail. Measures and actions to address negative impacts have followed the risk management hierarchy of avoidance and prevent, minimization, mitigation or restore and compensation. Measures proposed are in compliance with the Ugandan legislation and those of the World Bank Operational Policies.

The ESMP is well defined with performance indicators, targets and acceptable criteria that can be tracked over defined periods, with estimates of the resources and responsibilities for implementation. The ESMP format is flexible to ensure the integration of project specific mitigating, enhancing and monitoring requirements. The ESMP's scope and level of details is proportional to the number and complexity of the measures required to ensure the project's environmental and social sustainability. The following components constitute the minimal contents of an ESMP that were considered:

- a) Objectives of the ESMP This section specify what the ESMP aims to bring the project into compliance with applicable national environmental and social legal requirements and the Bank's safeguards policies and procedures. The other objective of the ESMP is to outline the mitigating/ enhancing, monitoring, consultative and institutional measures required to prevent, minimize, mitigate or compensate for adverse environmental and social impacts, or to enhance the project beneficial impacts. It also addresses capacity building requirements.
- b) *Context the ESMP* briefly describes project activities and major environmental and social components that will likely be affected positively or negatively by the project. It describes and analyses the physical, biological and human conditions prevailing in the project area, highlighting relevant environmental and social issues among others.
- c) *Beneficial and Adverse Impacts* This section focuses on beneficial impacts that can be enhanced to improve the project environmental and social performance as well as on adverse impacts that require mitigation measures to be minimized or compensated.
- d) Enhancement/Mitigation Measures and Complementary Initiatives This section proposes feasible and cost effective measures to address the impacts previously defined, in order to accrue project benefits through enhancement measures or to reduce potentially adverse environmental and social impacts to acceptable levels (mitigation measures).

- e) *Environmental and Social Monitoring Program* A monitoring program aims to ensure that mitigation and enhancement measures are implemented, that they generate intended results and that they are modified, ceased or replaced when inappropriate.
- f) Responsibilities and Institutional Arrangements The implementation of enhancement and mitigation measures and the completion of the monitoring program require to clearly establish responsibilities among the various organizations involved in project implementation and operation. The ESMP proposes support to the organizations that may have insufficient capacities to fulfill their obligations. This support could be provided through various means including technical assistance, training and/or procurement.
- g) *Estimated Cost* This section estimates the capital and recurrent cost associated with the various proposed measures (enhancement and mitigation), the monitoring program, consultations, complementary initiatives and institutional arrangements.

Table 41 provides a summary template for Monitoring Requirements.

| Phasing | Mitigation Measure | Parameters to be Monitored | Location | Measurements | Frequency | Responsibilities | Cost |
|------------------------------|-----------------------|----------------------------|----------|--------------|-----------|------------------|------|
| Pre-Construction Phase | | | | | | | |
| Construction Phase | | | | | | | |
| Operation and Maintenance | | | | | | | |
| Phase | | | | | | | |

Table 42: Summary Template for Monitoring Requirements

A monitoring program aims at ensuring that mitigation and enhancement measures are implemented, that they generate intended results and that they are modified, ceased or replaced when inappropriate. Further, it allows assessing compliance with national environmental and social policies and standards. A monitoring program include two parts:

- a) *Surveillance activities* The surveillance aims to ensure that the proposed mitigation and enhancement measures are effectively implemented during the construction phase.
- b) *Monitoring activities* These activities consist in measuring and evaluating the project impacts on some environmental and social components of concern and to implement remedial measures, if necessary.

The program defines as clearly as possible the indicators to be used to monitor the mitigation and enhancement measures that need to be assessed during project implementation and/or operation. The monitoring program also provides technical details on monitoring activities such as methods to be used, sampling locations, frequency of measurements, detection limits, and definition of thresholds that will signal the need for corrective actions. The process for establishing a monitoring programme consist of the following actions:

- Specific management and monitoring objectives;
- Identification of the scope of monitoring;
- Recommend appropriate monitoring environmental and social aspects and technology;
- Specify how the information collected should be used in decision-making;

- Define the spatial boundaries and select map scales and sites for observation, measurement or sampling;
- Select key indicators for direct measurement, observation or sampling;
- Define how the data will be analysed and interpreted and how it should be presented in monitoring reports;
- Define the precision and accuracy required in the data;
- Consider compatibility of data to be collected with historical data and with related contemporary data;
- Set minimum requirements for monitoring

5 BASELINE CONDITIONS

5.1 Physical Environment

5.1.1 Topography

Kasese district is unique with almost all kinds of topography. It has a diversity of contrasting physical features which range from flat lowlands through undulating hills to the snow-capped Rwenzori Mountains. The volcanic rise gently from 900 to a maximum of 1,300 m a.s.l. The terrain at the proposed sites for the intake points is steep and access is difficult in some parts of the crater area but in others especially the land for transmission and distribution lines is generally flat and easily accessible. The area is characterised by a number of craters some of which have crater lakes and the rest are dry and covered with grassland and forests.



Plate 8: Topographical view of the project area

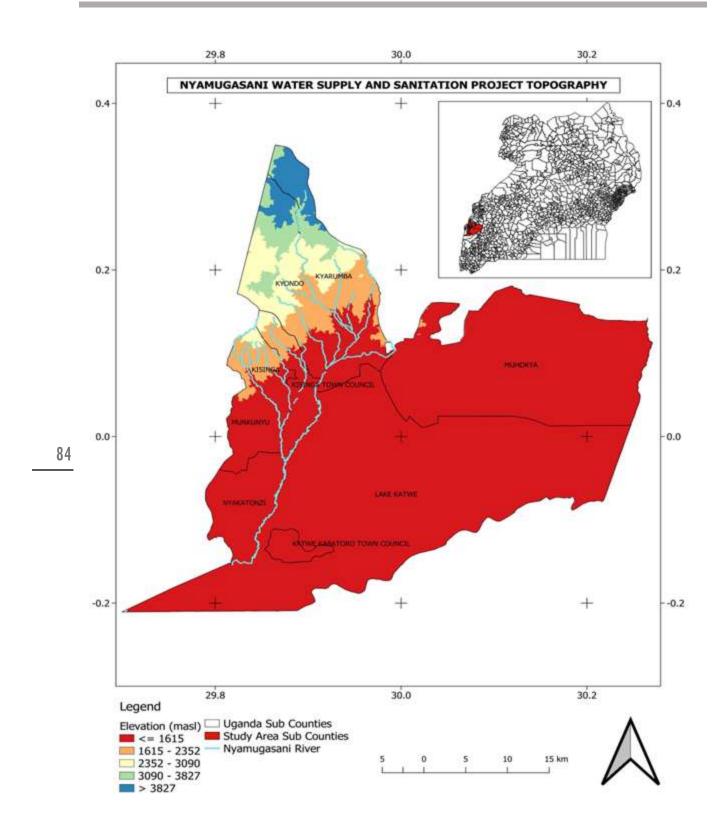


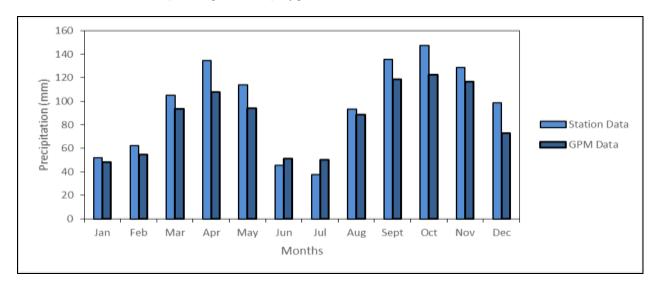
Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-15: Map of the Study Area Topography

5.1.2 Climate

The District experiences bimodal rainfall pattern. The first rains are short and occur during March-May and the longer rains from August-November. Annual rainfall ranges from 900mm-1600mm, and is greatly influenced by altitude. Alongside, there exists wide temperature variations influenced by altitude from rather high temperatures at the plains to as below as zero at the summit. The temperature ranges between 22 and 30°C. However, the rainfall partners have greatly changed.

The highest project area elevation shall be at the intake site along the slopes of Mt. Rwenzori and the lowest elevation in the southern part, which lies in the western rift valley, is 883m along the shores of Lake Katwe. The topography ranges from flat low lands in the south and rises through undulating hills towards the snow-capped Rwenzori Mountain in the northern part.

The only climate station close to the project area is located at Kasese. Both rainfall and evaporation are observed at this station. Data on climatic variables such as maximum temperature, minimum temperature, wind speed etc. are not available. CLIMWAT database was consulted. The data (long-term monthly mean values. of the Kasese station) were extracted and are presented in *the figure 12* below. The relevance of Global Precipitation Measurement (GPM) database has been assessed in order to check if they could be used to represent the climate of R. Nyamugasani WSC. This has been done (i) looking at the correlation between GPM rainfall and rainfall from different stations, (ii) comparing average monthly rainfall of GPM and all the rainfall stations located in the corresponding Theisen polygon, and (iii) comparing the data GPM data series and data series from some of the stations.



The graph below shows a comparison of mean monthly rainfall measured at Nyabirongo station, with rainfall data for the corresponding Theisen polygon, from the GPM database.

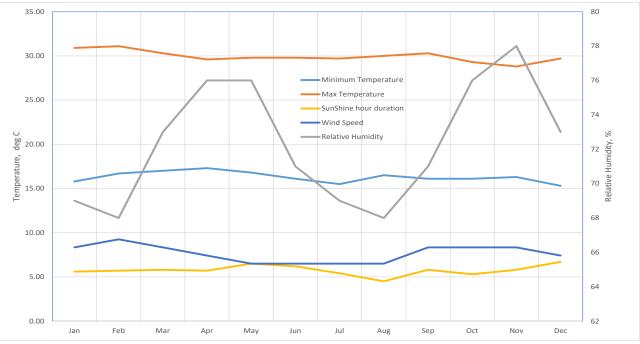


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-16: Comparison of data measured at station and GPM data (monthly rainfall, R. Nyamugasani WSC)

Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-17: Monthly Variation of Climatic Variables at Kasese Station

86 From the figure 15 above the variation of relative humidity is remarkably significant compared to the variation of the rest of the climatic parameters. This may have an impact on the seasonal variation of water demand.

In order to assess which of the two weather satellite products (Geostationary Operational Environmental and polar-orbit) best represents the rainfall on the catchment, two checks have been performed. First, the correlations between monthly rainfall at different station and from the two databases have been compared, and correlation with Global Precipitation Measurement proved to be the best see the figure below.

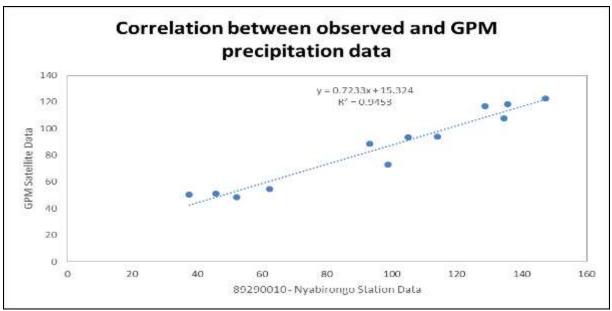


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-18: Correlation between rainfall measured at station and rainfall from GPM datasets.

Rainfall data from GPM seems fairly consistent with rainfall measured at stations with a coefficient of determination (R^2) of 0.945. They can therefore be used to represent the rainfall of the catchment in subsequent analysis. Therefore, data from GPM seem better related with observed data and was chosen to gap fill Nyabirongo station for this study.

5.1.3 Geology and Soils

Uganda is underlain by some of the world's oldest rocks that have been modified by geological processes. These rocks are overlain by predominantly ferrallitic – and to a lesser extent ferruginous soils as the most widely distributed soil type. Western Uganda is dominated by Ferallitic soils.

The soil of the project area is composed of Ferralsols, Phaeozems, Luvisols and Andosols. The sand fraction percentage varies from 33% to 55% while the clay fraction varies from 13% to 49%. The dominant soil type ranges from clay to loam. The soils are moderately drained (*Soil Data from Harmonized World Soil Database, FAO*).

The geology of Kasese district is characterised by surficial deposits, and the Rwenzori Mountains whose geology is dominated by gneisses and in some places granites and quartizites along the Kikorongo - Kasese road. The geology of the project area is dominated by explosion craters, ejected pyroclastics, tuffs with abundant granite and gneissic rocks from the basement. The volcanic rocks, composed mainly of pyroclastics and utramafic xenoliths, are deposited on the extensive Pleistocene lacustrine and fluvial Kaiso beds and in some places directly on Precambrian rocks. The deposit is greyish, generally coarse grained and calcareous.

There are a number of mineral resources in Kasese that include; Copper (Kilembe Mines), Cobalt, Cement (Hima), and Limestone (Muhokya). The soils in the project area are generally Sandy Clay loams, Clay loams Sandy Clay soil material, grey sands and peat over rock.

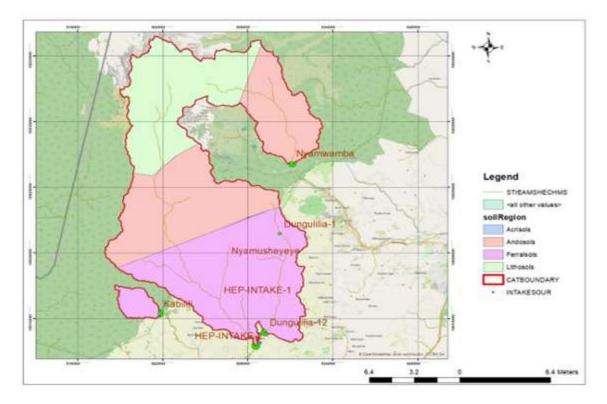
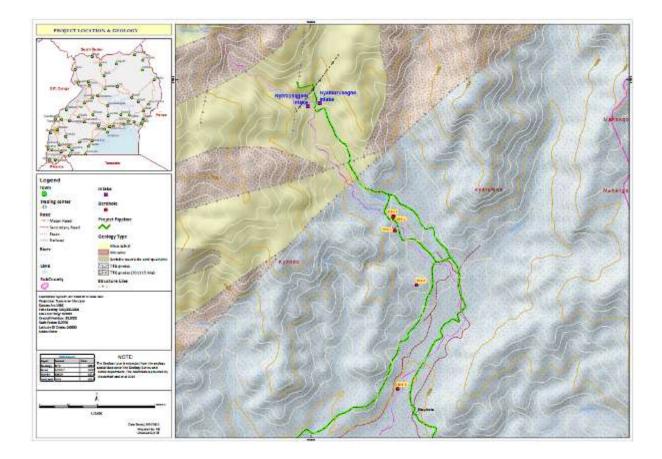


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-19: Soils Map of the project area (Source HWSD, FAO)



Plate 9: Some of the rocks at the proposed intake point within the project area



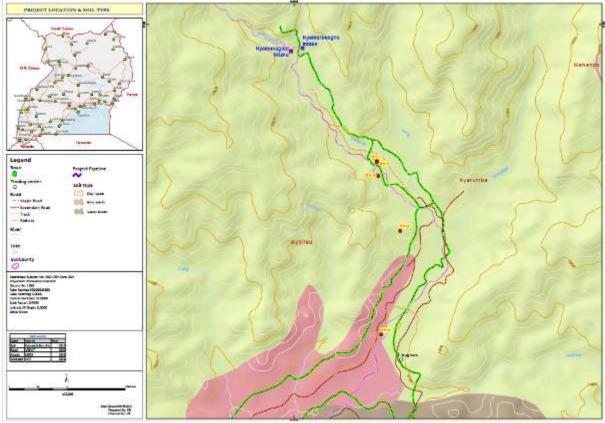


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-20: Map showing the Geology of the Project area of Nyamugasani

Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-21: The Soil Map of the Project area of Nyamugasani

5.1.4 Water Resources

a) Protected Well/Spring

In Mukunyu, Kyondo, Kyarumba, Kisinga, Muhokya and Lake Katwe sub-counties, protected well and springs cater for 30%, 22%, 6%, 31% and 17% of the demands respectively. Protected well and spring need little or no treatment. If these sources are still functional, the intakes should be identified and will be accounted for the in demand-supply analysis.

b) Boreholes

Boreholes also form an important source of domestic water supply. In Mukunyu 32% of the demand is met through the development of groundwater using boreholes. In Kyarumba, boreholes cover 5% of the domestic water supply-demand whereas 95% of the demands are met through boreholes in Nyakatonzi. Lake Kitwe sub-county derives 30% of its domestic water supply source using boreholes. These existing coverages of the water supply shall be added to the water resources assessment if they are still in operation.

c) River/Lakes

A network of rivers and lakes that cut across the seven sub-counties form the main source of domestic supply. Lakes, streams and rivers provide the majority of people at landing sites, trading canters and villages with the necessary water supply for various purposes. The streams are closer to the homes but dry up and people travel long distances to the rivers. For instance, the majority of people in Kayema, Kalonge and Kihungu parishes (Kyarumba) travel long distances to Rivers Nyamugasani, Nyamuruseghe and Dunguluha. Nyamuruseghe and Dunguluha are all tributaries of Nyamugasani river and they join Nyamugasani river downstream of the two proposed intakes and water treatment plant. All four parishes in Kyondo depend on streams or rivers for their water. Over three quarters of the population in Kisinga use rivers such as Rwembya, Nyamugasani, Nyakatsa, Mihasa, Kajwenge and Kanyampala. Half of the households in Mukunyu depend on streams and Rivers Bukangala and Kanyampala. Other households use the Kanyampala channel. All these rivers drain into Lake Edward, which is downstream of the project area.

Of these sources, Dunguluha is assessed in this study. However, abstraction from these rivers may affect the dry season flow at Nyamugasani and the flows may need to be naturalized.



Plate 10: River Nyamugasani through an Eucalyptus woodlot in Kyarumba Sub County

5.1.5 Land-Use and Land Cover Assessment

Kasese District has total land size of 3,389 sq kms, and about 63% of this land (1834.6 sq.km) is occupied by conservation areas. The principle land use includes residential agricultural use. Arable land is about 1,555 Sq Km. Average land holding per household stands at 1 acre, with about 71% of the farmers being subsistence. Other major land use practices in Kasese District include mining, forestry and woodlands, construction and range and pasture.

Besides climatic data, the land use and land cover (LULC) have also a significant role in determining the hydrologic processes for R. Nyamugasani WSC. Catchment land use/ land cover distribution for 2021 was assessed with highest and lowest occupancy ascribed to Forestland (Rwenzori Mountain National Park) at 91% and Water at 1% of total catchment area respectively. While for R. Nyamuruseghe, land use/ land cover distribution for 2021 was assessed with highest and lowest occupancy ascribed to Forestland (Rwenzori Mountain National Park) at 85% and Water at 0.1% of total catchment area respectively.



Plate 11: Typical forested landscape within the water source catchment



Plate 12: Typical Agricultural landscape within the water source catchment

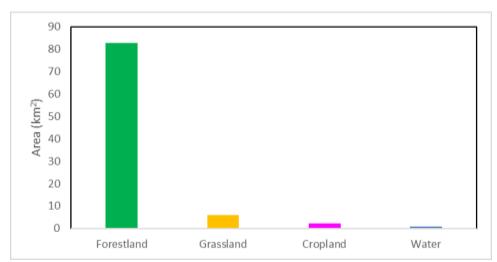


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-22: Land use Distribution in R. Nyamugasani Water Source catchment

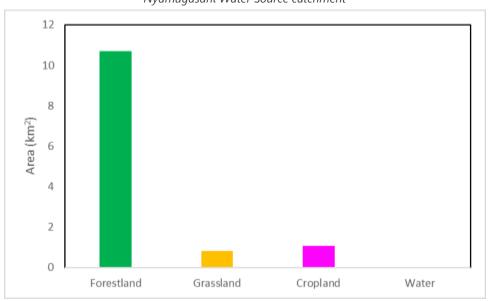


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-23: Land use Distribution in R. Nyamuruseghe Water Source catchment

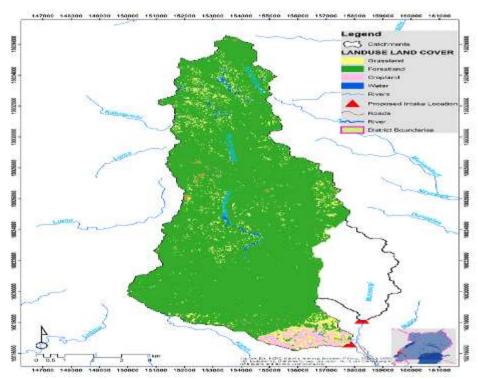


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-24: Land use Landcover map for R. Nyamugasani WSC

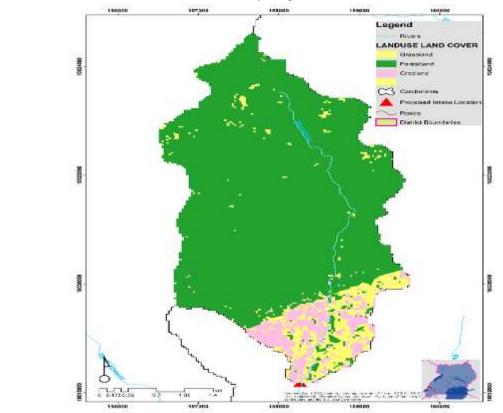


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-25: Land use Landcover map for R. Nyamuruseghe WSC

5.1.6 Water Quality Analysis

Water quality tests (physical, biological and chemical) were carried out in August 2022 and analysed at the NWSC Central laboratory in Bugolobi for the proposed abstraction along River Nyamugasani and Nyamuruseghe during the detailed engineering design stage (Detail Engineering Design Report, 2022). The proposed water source was subjected to water quality tests in order to establish the suitability for domestic use. Both onsite and laboratory water quality assessment was conducted; some of the key onsite water quality parameters tested include Electrical conductivity, Salinity and Dissolved oxygen, while the laboratory tests include Colour, Turbidity, Total suspended solids, alkalinity and chemical composition.

During ESIA stage, in situ water quality measurements were recorded at the two proposed water abstraction points. Raw water samples were collected at the proposed water abstraction points and delivered to the Government Analytical Laboratory in Wandegeya, Kampala for analysis. **Annex 4** presents the analysis report against the Uganda Standard for Potable Water **US 12: 2014**

Table 42 below presents a summary of a comparison of the water quality analysis results for the samples that were collected during site visits by the ESIA team in November 2022 from the proposed uptake/abstraction points with those that were taken in August 2022 during the detailed Engineering designs. The variation in Total Dissolved Solids (TDS) can be attributed to the different seasons when the sampling was done i.e. the ESIA stage sampling was carried out during the intensified rainy season/after a heavy down pour while the design stage was carried out a rain storm. This had the advantage of sampling for the possible worst physical quality parameters. Primary sources for TDS in receiving waters are attributed to increased agricultural runoff and residential (urban) runoff, clay-rich mountain waters, and leaching of soil contamination.

| Parameters | Results | Results | | | | | | |
|--------------------------------|--------------|------------|--------------|-------------|----------------|--|--|--|
| | NYAMU | JRUSEGHE | NYAM | NYAMUGASANI | | | | |
| | Design Stage | ESIA Stage | Design Stage | ESIA Stage | | | | |
| рН | 7.48 | 8.2 | 7.63 | 7.8 | 5.5 – 9.5 | | | |
| Colour (TCU) | 7.3 | 14 | 65 | 8 | 50 Max | | | |
| Conductivity (µs/cm) | 89.3 | 283 | 58.5 | 267 | 2500 Max | | | |
| Total Dissolved Solids, (mg/l) | 57.152 | 1287 | 37.44 | 1198 | 1500 Max | | | |
| Total Suspended Solids, (mg/L) | 10 | 54 | 7 | 23 | Not Detectable | | | |
| Total Hardness, CaCO₃ (mg/L) | 40.504 | 82 | 5.6 | 56 | 600 Max | | | |
| Turbidity, NTU (mg/L) | 8.48 | 32 | 0.87 | 18 | 25 Max | | | |
| Arsenic (mg/L) | - | 0.01 | - | 0.01 | 0.01 Max | | | |
| Calcium (mg/L) | - | 47.8 | - | 33.6 | 150 Max | | | |
| Copper (mg/L) | - | 2.2 | - | 1.8 | 1.0 Max | | | |
| Iron, Total (mg/L) | 0.185 | 5.8 | 0.025 | 4.7 | 0.3 Max | | | |
| Lead (mg/L) | - | 1.2 | - | 0.01 | 0.01 Max | | | |
| Magnesium (mg/L) | 6.34 | 38.5 | 9.97 | 44.7 | 100 Max | | | |
| Mercury (mg/l) | - | 0.001 | - | 0.001 | 0.001 Max | | | |
| Sodium (mg/L) | - | 32.2 | - | 28.7 | 200 Max | | | |
| Zinc (mg/L) | - | 2.2 | - | 1.8 | 5.0 Max | | | |
| Ammonia (NH ₃) | - | 1.2 | - | 1.2 | 0.5 Max | | | |
| Chlorides (mg/L) | 5.0 | 298 | 8.0 | 247 | 250 Max | | | |
| Fluoride (mg/L) | 0.0 | 1.2 | 0.0 | 1.2 | 1.5 Max | | | |
| Nitrates (mg/L) | 0.21 | 12.5 | 0.15 | 9.8 | 45 Max | | | |
| Phosphates, Total (mg/L) | - | 4.8 | - | 3.2 | 2.2 Max | | | |
| Sulphates (mg/L) | 0.0 | 267 | 0.0 | 246 | 400 Max | | | |
| Total coliforms (cfu/100ml) | 2 | 12 | 0 | 8 | Absent | | | |

Table 43: Water quality analysis during both the Design stage and ESIA process

| E. coli (cfu/100ml) | 2 | 4 | 0 | 1 | Absent |
|---------------------|---|---|---|---|--------|

From the analysis done, the following parameters were found to be within acceptable limits for potable water: pH, EC, Hardness, Total Dissolved Solids (TDS), Arsenic, Cadmium, Calcium, Chromium, Copper, Lead, Magnesium, Mercury, zinc, Sodium, Chlorides, Fluorides, Nitrates and Sulphates. The Sample also had undetectable levels of TSS. The water generally has low nitrate, chloride and fluoride concentrations falling within the recommended standards; therefore, no health risk is anticipated with the observed levels in the water.

On the other hand, the following parameters exceeded national standards for drinking water: TSS, Turbidity (for Nyamuruseghe), Fe (Total), Lead (for Nyamuruseghe), Ammonia, Phosphates, Total Coliforms and E-coli.

Sampling for the raw water quality analysis was a one-off after a rain storm. This had the advantage of sampling for the possible worst physical quality parameters i.e. TSS, turbidity and partly colour. It must be noted that seasonal variations in the raw water quality will continue to take place during the life of the proposed water source.

Generally, the water samples from the proposed intake point do not met the national drinking water standards. As such, water from River Nyamugasani and Nyamuruseghe is not suitable for direct consumption and would therefore need conventional treatment (aeration, coagulation, sedimentation, filtration and disinfection) and boiling to make it suitable for that primary purpose. In that regard, a conventional water treatment system is the suitable option given the eminent seasonal variations in the raw water quality. Further still, based on experience, most of the nation's surface water sources can best be treated by the conventional water treatment works, with the proposed source not being exceptional.

5.1.7 Noise Levels

There are no cases of noise pollution at the proposed intakes. Thus, the project site indicates a generally pristine environment with respect to ambient noise. However, as would be expected due to the increased human activities and construction activities noise levels are likely to increase. Noise levels recorded at selected locations within the proposed project area are presented in Table 43 below.

| Project Component | Location | Longitude | LA _{min} dB | LA _{max} dB | LA _{Eq} dB | Comments (source of the noise and background noise |
|--------------------------------------|-----------|-----------|-------------------------|-------------------------|------------------------|---|
| Nyamusagani Intake | 0.149442 | 29.927595 | 50.1 | 52.0 | 51.05 | River Water flow, twittering birds, Swishing tree leaves and consultants' conversations |
| Nyamuruseghe Intake | 0.149926 | 29.929420 | 53.4 | 55.4 | 54.4 | River Water flow, twittering birds, Swishing tree leaves and consultants' conversations |
| Water Treatment Plant (TP01) | 0.147326 | 29.929310 | 33.1 | 35.5 | 34.3 | Swishing tree leaves, twittering birds and human conversations |
| Water Treatment Plant (TP02) | 0.146997 | 29.929098 | 41.2 | 44.5 | 42.9 | Swishing tree leaves, twittering birds and human conversations |
| Muhokya Reservoir | 0.106350 | 30.024340 | 30 | 39 | 34.5 | Swishing tree leaves, twittering birds and human conversations |
| Kinyabakazi - Kahendero Reservoir | 0.071130 | 30.02782 | 31.9 | 32.3 | 32.1 | Swishing tree leaves, twittering birds and human conversations |
| Kikorongo Reservoir | 0.010590 | 29.96024 | 32 | 35 | 33.5 | Swishing tree leaves, twittering birds and human conversations |
| Kabila-Kisinga Reservoir | 0.09544 | 29.8903 | 30 | 35 | 32.5 | Swishing tree leaves, twittering birds and human conversations |
| Kabila-Kisinga Reservoir | 0.08319 | 29.89692 | 25 | 30 | 27.5 | Swishing tree leaves, twittering birds and human conversations |
| New Route Reservoir 1 | 0.07783 | 29.95504 | 35 | 40 | 37.5 | Swishing tree leaves, twittering birds and human conversations |
| New Route Reservoir 2 | 0.05031 | 29.96522 | 33 | 39 | 36 | Swishing tree leaves, twittering birds and human conversations |
| Mughete Kabirizi Reservoir | 0.1128223 | 29.94811 | 30 | 35 | 32.5 | Swishing tree leaves, twittering birds and human conversations |
| Kaberere Musasa Reservoir | 0.132666 | 29.939855 | 34 | 39 | 36.5 | Swishing tree leaves, twittering birds and human conversations |
| WTP to Kyarumba Reservoir | 0.140334 | 29.934311 | 25 | 32 | 28.5 | Swishing tree leaves, twittering birds and human |

Table 44: Noise levels measured at the proposed project sites.

| | | | | | | conversations |
|----------------------------|----------|-----------|----------------|----|------|--|
| Kyondo Reservoir | 0.075475 | 29.929098 | 39 | 45 | 42 | Swishing tree leaves, twittering birds and human |
| | 0.073473 | 29.929090 | 29 | 45 | 42 | conversations |
| Kitsutsu Mukunyu Reservoir | 0.010020 | 20.017020 | 40 | 10 | 40 | Swishing tree leaves, twittering birds and human |
| | 0.019828 | 29.817830 | 17830 40 46 43 | | 43 | conversations |
| Mukunyu Kanyampanga | | | | | | Swishing tree leaves, twittering birds and human |
| Reservoir at Subcounty | 0.023990 | 29.841967 | 30 | 35 | 32.5 | conversations |
| Headquarters | 0.023330 | 23.011307 | | | | |
| Mukunyu Kanyampanga | 0.026260 | 20.026020 | 25 | 40 | 27 5 | Swishing tree leaves, twittering birds and human |
| Reservoir | 0.026360 | 29.836820 | 35 | 40 | 37.5 | conversations |

The levels are based on land use Category D (Residential plus Industry or small scale production and commerce) for which daytime and night limits are 60 and 50 dBA, respectively according to the National Environment (Noise Standards and Control) Regulations 2003. All measurements were conducted during daytime.

5.1.8 Air Quality

100 The ambient air quality is assumed to be good as there are no major industrial sources of air emissions. The primary sources of air emissions in the area are automobiles (vehicles and motor cycles). Fugitive dust is attributed to vehicular movements along loose surface/murram roads, which dust levels, are exacerbated during dry, sunny and windy periods. Air quality measurements indicated a reasonably clean environment with respect to air quality as presented in Table 44 below.

| Area | Location | Longitude | O 2 (%) | CO (ppm) | VOC (ppm) | ΡΜ _{2.5} (μg/m³) | Air pollutant |
|--|----------|-----------|----------------|-------------|--------------|------------------------------|-----------------------|
| NEMA (Draft Air Quality Standard for Ambient Air) | | | 19.5- 23.5 | 9.0 | 15 | 25 | |
| IFC, 2007 Standard | | | | | | 25 | |
| Nyamusagani Intake | 0.149442 | 29.927595 | 20.1 | 0 | 0 | Ave-0.009 Max-0.015 | Dust elevated by wind |
| Nyamuruseghe Intake | 0.149926 | 29.929420 | 21.1 | 0 | 0 | Ave-0.009 Max-0.015 | Dust elevated by wind |
| Water Treatment Plant (TP01) | 0.147326 | 29.929310 | 20.9 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind |

Table 45: Results of air quality measurements taken in the project area

| Water Treatment Plant (TP02) | 0.146997 | 29.929098 | 21.1 | 0 | 0 | Ave-0.009 Max-0.015 | Dust elevated by wind | |
|--|-----------|-----------|------|---|---|------------------------|-----------------------|-----|
| Muhokya Reservoir | 0.106350 | 30.024340 | 20.9 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Kinyabakazi - Kahendero Reservoir | 0.071130 | 30.02782 | 19.0 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Kikorongo Reservoir | 0.010590 | 29.96024 | 19.0 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Kabila-Kisinga Reservoir | 0.09544 | 29.8903 | 20.5 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Kabila-Kisinga Reservoir | 0.08319 | 29.89692 | 20.8 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| New Route Reservoir 1 | 0.07783 | 29.95504 | 20.4 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| New Route Reservoir 2 | 0.05031 | 29.96522 | 21.0 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Mughete Kabirizi Reservoir | 0.1128223 | 29.94811 | 20.4 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | 101 |
| Kaberere Musasa Reservoir | 0.132666 | 29.939855 | 20.9 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | 101 |
| WTP to Kyarumba Reservoir | 0.140334 | 29.934311 | 19.0 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Kyondo Reservoir | 0.075475 | 29.929098 | 20.9 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Kitsutsu Mukunyu Reservoir | 0.019828 | 29.817830 | 19.0 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Mukunyu Kanyampanga Reservoir at Subcounty Headquarters | 0.023990 | 29.841967 | 21.8 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |
| Mukunyu Kanyampanga Reservoir | 0.026360 | 29.836820 | 19.8 | 0 | 0 | Ave-0.001 Max-0.005 | Dust elevated by wind | |

All the assessed parameters were within the within permissible values in accordance with the NEMA (Draft Air Quality Standard for Ambient Air) and IFC, 2007 Standard. There were no detectable levels of NO, NO₂, CO, H₂S, Cl₂, ClO₂ and SO₂ at all measurement locations.

5.2 Biological Environment

5.2.1 Flora

a) Flora at the Proposed Intake Points

The project area comprises Montane grassland and modified woodland. The woodland has been mostly modified for agriculture. The project area is characterised by grass savannas with abundant *Andropogon distachyus, Cenchrus validus, Exotheca abyssinica* and *Hyparrhenia cymbaria* have developed at altitudes of 2000-3000metres. The most productive grasses are *Pennisetum clandestinum* and *P. purpureum* followed by *Setaria sphacelata* on the foothills of the Ruwenzori Mountain. The *P. clandestinum* grasslands have a natural clover *Trifolium semipilosum* which is very compatible with the grass.

Both proposed intake points are located on Nyamugasani and Nyamuruseghe Rivers which are characterised with different types of vegetation ranging from the foothills where farming activities and settlement are taking place up to an altitude of 4600 metres above sea level, the vegetation characteristics are described below:

Farm lands and settlement areas; (below 1800 metres). The foothills are heavily tilled and crops such as Coffee, Theobroma cacao and Vanilla are grown for cash and food crops such as Musa spp, legumes and yams are grown in the valleys. A few indigenous and exotic tree species can be seen in the farmlands and extends up to the boundaries of the Rwenzori Mountain National Park and these species include; Spathodea campanulata, Markhamia lutea, Terminalia brownii, Fucus natalensis, Maesopsis eminii, Entada abyssinica, Maesa lanceolata, Prunus africana, Bersama abyssinica, Trema orientalis, Sapium ellipticum, Vernonia amygdalina, Vangueria apiculata, Albizia coriaria, Pasea amaericana, Artocarpus heterophyllus and Cordia africana.



Plate 13: Farm lands with trees, crops and settlement along the foot hills of Mount Rwenzori extending to the boundaries of Rwenzori Mountains National Park in Kyarumba sub county.

The Montane Forest; This zone lies between 1800 – 2500 metres above sea level and characterised with medium sizable trees which have less dense canopies such as Prunus africana, Podocarpus latifolius, Prema angolensis, Sapium (Shirakiospsis) ellipticum, Stereospermum kunthianum, Strombosia scheffleri, Symphonia globulifera, Ensete ventricosum, Tree ferns and many other species.



The Montane Forest with different tree species lying between 1800-2500 metres above sea Plate 14: level in Rwenzori Mountains National Park.

- Bamboo Zone; The zone lies between 2500 3000 metres above sea level and steep rocks which are covered with lichens and mosses. The ground is covered with a thick layer of bamboo leaves and some understorey plants including Acanthus spp, Mimulopsis elliotii being the common species and the valleys have got swampy vegetation such as Lobelia gibberoa and Giant heathers, Philippia johnstonii and Erica kingaensis are growing on narrow ridges. Some tree species can as well be found in this zone 103 and they include; Hagenia abyssinica, Podocarpus milanjianus, Dombeya torrida, Afrocrania volkensii, Maesa lanceolata and Dracaena afromontana.
- Heather zone; The zone lies between 3000 to 4000 metres above sea level and characterised of poor soils with rocky and boggy places which make it conducive for heather forests to occupy the larger area. The tree stems are all covered with thick mosses and Lichens and the common plants are the Coral pink ground orchid, Disa stairsii, Red and Mauve balsam, Impatiens runsorrensis and a mixed woodland consisting of small shrubby trees with Rhodondendron like leaves, some Groundsel and Lobellias are as well found in small amounts at the beginning of the zone.
- Alpine Zone; The area lies at an altitude of 4000- 4500 metres above sea level and is characterized with swampy vegetation consisting of Giant grondsels, Torch lobelia, Lobelia wollastosnii and a thick tangled growth of the everlasting *Helichrysum stuhlumani*. The bogs and lake verges are occupied by Carex tussocks and Heathers grow in the lower part of the zone. Short grasses and Mosses grow on the rocks. The altitude above 4500 metres is characterized by bare rocks which are covered with glaciers during the rainy season.

b) Forests and Protected Areas

Forests and protected areas play incredible roles by providing livelihood support to the local people (inhabitants) with products and services such as food, shelter, medicine, and income. These forests/ protected areas as well play a myriad function which include air filtration, reduction in global warming, provision of habitats, maintenance of the climate, prevention of soil erosion, flood control, and many

others and this means that the poor exploitation of forest resources therefore results in negative environmental consequences to man and other living organisms.

The project area has no central forest reserve but endowed with Rwenzori Mountain National Park (RMNP) with an area of 118 KM² lying inside Nyamugasani catchment out of the 995 KM² of the total protected reserve area. However, all the project components including both intake points and the transmission and distribution lines are outside of the Rwenzori Mountain National Park. The only relationship between the project and Rwenzori Mountain National Park is that both River Nyamugasani and Nyamuruseghe originate from this park. Both intakes on Nyamugasani and Nyamuruseghe are over 5 km away from the park boundaries. There are areas where the water distribution network will run close (about 1 Km away) to Queen Elizabeth National Park (QENP), because there are communities living near the park boundaries; however, no pipelines will pass through the national park. Both RMNP and QENP are managed under the jurisdiction of Uganda Wildlife Authority (UWA) and is known for protecting some of Africa's most spectacular mountain scenery known as the largest and most significant highland water catchment in East Africa and contributing some big volumes of water to the Nile having been the source of about 6 major rivers including Nyamugasani. The reserve as well protects glaciers, valleys, waterfalls, endemic flora such as the *Giant lobelias*, the heaths, Afro-alpine vegetation, *Giant candelabra* and *Dendrosenecious* which grow from altitude of 1,600m up to 5,109m above sea level.

During the ESIA, it was observed that some parts of this protected area are threatened by several degradation activities which include wildfire, hunting/ poaching, landslides, agriculture expansion on forest edges, logging and wood harvesting. All these degradation activities have imposed indirect negative effects on both the livelihood of the inhabitants (Bakonjo) but as well the natural resources such as habitat shifting/ alteration due to increased temperatures, reducing glaciers, extinction of some species and increase in floods and landslides in the area.

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The private forests on the steep hills of upper Nyamugasani have all been cleared by the inhabitants to grow crops like Vanilla, Coffee, Cocoa and food crops but as well utilize the trees for fuel wood and construction materials for homes, this has left the steep slopes with less vegetation cover and weakened soil structure prone to soil erosion and landslides which cause soil fertility loss, river siltation and blockage and destruction of people's properties including houses and crops and sometimes loss of lives when bigger landslides occur. On the other hand, the forests along the buffer zones of river Nyamugasani and its tributaries have as well been replaced with Eucalyptus growing and crop farming activities causing severe river bank damage and siltation.

A few indigenous tree species were observed scattered in farm lands and river banks, most of these species are harvested for firewood, medicine and other cultural/ socio values by inhabitants, these include; *Spathodea campanulata, Markhamia lutea, Terminalia brownii, Fucus natalensis, Maesopsis eminii, Entada abyssinica, Maesa lanceolata, Prunus africana, Bersama abyssinica, Trema orientalis, Sapium ellipticum, Vernonia amygdalina, Vangueria apiculata, Albizia coriaria and Cordia africana* were very common.



Plate 15: Most hilly areas surrounding RMNP have been intensively cultivated to the top in the areas of Muhokya, Kyondo, Kisinga and Kyarumba

5.2.2 Fauna at the Proposed Intake Points

Birds are useful indicators of ecological disturbance and ecosystem health and were incorporated in this ecological assessment. This is because they are highly diverse and inhabit a range of habitats and conditions, widely studied with a fairly settled taxonomy, sensitive to environmental change and economically important. Data presented herein is incidence data only showing species encountered in different places/habitats, with an indication of their habitat associations. Emphasis was majorly placed on conservation status, indicator species and the habitat change impacts especially in critical areas. Though most of the natural habitat in different places was altered by human action (mainly crop cultivation), it is 105 likely that extended periods of field surveys spanning the different seasons might turn up several more species than have been recorded in the current survey. The table below presents bird species encounters within the catchment and habitat specialization. No species of conservation concern under IUCN Red List Category were recorded.

| No. | Common name | Specific name | Ecological type |
|-----|-----------------------|------------------------|-----------------|
| 1. | Black-necked weaver | Ploceus nigricollis | f |
| 2. | Spectacled weaver | Ploceus ocularis | f |
| 3. | Slender-billed weaver | Ploceus pelzelni | fW |
| 4. | Long-crested eagle | Lophaetus occipitalis | f |
| 5. | Hamerkop | Scopus umbretta | W |
| 6. | African pied wagtail | Motacilla aguimp | w |
| 7. | Black-headed heron | Ardea melanocephala | w |
| 8. | Cattle egret | Bubulcus ibis | W |
| 9. | Black-headed weaver | Ploceus cucullatus | |
| 10. | Hadada | Bostrychia hagedash | w |
| 11. | Glossy ibis | Plegadis falcinellus | W |
| 12. | African white-backed | Gyps africanus | |
| 13. | African hawk eagle | Hieraaetus spilogaster | |
| 14. | Ring-necked dove | Streptopelia capicola | f |

Table 46: Bird Species Encountered around the intake points proposed and their catchments

| 15. | Red-eyed dove | Streptopelia semitorquata | f |
|-----|---------------------------|----------------------------|-----|
| 16. | Fish eagle | Haliaeetus vocifer | W |
| 17. | Black kite | Milvus migrans | A |
| 18. | Grey kestrel | Falco ardosiaceus | |
| 19. | Red-necked spurfowl | Francolinus afer | |
| 20. | Crested francolin | Francolinus sephaena | |
| 21. | Helmeted guineafowl | Numida meleagris | |
| 22. | Black crake | Limnocorax flavirostra | W |
| 23. | Black-bellied bustard | Eupodotis melanogaster | |
| 24. | Crowned plover | Vanellus coronatus | |
| 25. | Wattled plover | Vanellus senegallus | W |
| 26. | Green pigeon | Teron australis | F |
| 27. | Red-headed lovebird | Agapornis pullaria | f |
| 28. | Brown parrot | Poicephalus meyeri | |
| 29. | Ross' turaco | Musophaga rossae | F |
| 30. | African cuckoo | Cuculus gularis | A |
| 31. | Gabon nightjar | Caprimulgus fossii | |
| 32. | Little swift | Apus affinis | |
| 33. | Speckled mousebird | Colius striatus | |
| 34. | Blue-naped mousebird | Urocolius macrourus | |
| 35. | Pied kingfisher | Ceryle rudis | W |
| 36. | Lilac-breasted roller | Coracius caudata | |
| 37. | Broad-billed roller | Eurystomus glaucurus | Afw |
| 38. | Green wood hoopoe | Phoeniculus purpureus | |
| 39. | Grey hornbill | Tockus nasutus | |
| 40. | Spotted-flanked barbet | Lybius lacrymosus | |
| 41. | Yellow-fronted tinkerbird | Pogoniulus chrysoconus | f |
| 42. | Paradise flycatcher | Terpsiphone viridis | f |
| 43. | Plain -backed pipit | Anthus leucophrys | |
| 44. | Yellow-throated longclaw | Macronyx croceus | |
| 45. | Black-headed gonolek | Laniarius barbarus | f |
| 46. | Tropical boubou | Laniarius ferrugineus | f |
| 47. | Grey-capped warbler | Eminia lepida | fw |
| 48. | Tawny-flanked prinia | Prinia subflava | fw |
| 49. | Common fiscal | Lanius collaris | |
| 50. | Grey-backed fiscal | Lanius excubitorius | Afw |
| 51. | Helmet shrike | Prionops plumata | f |
| 52. | Violet-backed starling | Cinnyricinclus leucogaster | Af |
| 53. | Wattled starling | Creatophora cinerea | |
| 54. | Splendid glossy starling | Lamproturnis splendidus | F |

| 55. | Yellow-billed oxpecker | Buphagus africanus | |
|-----|--------------------------|-------------------------|----|
| 56. | Mariqua sunbird | Nectarinia mariquensis | |
| 57. | Scarlet-chested sunbird | Nectarinia senegalensis | f |
| 58. | Green-headed sunbird | Nectarinia verticalus | F |
| 59. | Yellow white-eye | Zosterops senegalensis | f |
| 60. | Waxbill | Estrilda astrild | W |
| 61. | Black flycatcher | Melaenornis edolioides | |
| 62. | Lead-coloured | Myioparus plumbeus | f |
| 63. | Yellow-fronted canary | Serinus mozambicus | |
| 64. | Nubian woodpecker | Campethera nubica | |
| 65. | Cardinal woodpecker | Dendropicos fuscescens | |
| 66. | Black-headed oriole | Oriolus larvatus | f |
| 67. | Pied crow | Corvus albus | |
| 68. | African penduline tit | Remiz caroli | f |
| 69. | Black-lored babbler | Turdoides melanops | |
| 70. | Black cuckoo shrike | Campephaga flava | Af |
| 71. | Common bulbul | Pycnonotus barbatus | f |
| 72. | African thrush | Turdus pelios | f |
| 73. | Winding cisticola | Cisticola galactotes | w |
| 74. | White-throated bee-eater | Merops albicollis | Af |
| 75. | Little bee-eater | Merops pusillus | |
| 76. | Madagascar bee-eater | Merops superciliosus | A |

A - Afro tropical migrant (a species migrating with in Africa), P - Palearctic migrant (a species which breeds in Europe or Asia), FF - forest specialists (species of typical forests interiors), F - Forest generalists (species less specialized also occur in small patches of forests), G – Grassland species, f - Forests visitors, W - Water bird specialists (normally restricted to wetlands or open waters), w - Water bird non specialists (often found near water).

Amphibians are ecologically important, being predators of insects, some of which are pests to crops or vectors of disease. Amphibians are also now recognized as sensitive environmental indicators thus, am impact on their habitat is reflected by a change in abundance and diversity in a short time. Amphibians in the area included: Common Reed Frog (*Hyperolius viridiflavus*), Crowned Bullfrog (*Hoplobatrachus occipitalis*) and African Common Toad (*Bufo gutturalis*). Other species reported but not recorded included: Waterlily reed frog (*Hyperolius pusillus*) and Marbled Snout-burrower (*Hemisus marmoratus*). The IUCN conservation status of all the species is Least Concern (LC), meaning that the species are not endangered or threatened to extinction in the wild (IUCN 2022).

Reptile species identified are all of Least Concern under the IUCN RedList (IUCN 2022) included: *Hemidactylus brookii, Agama africana* and *Chamaeleo gracilis* were some of the reptiles observed within catchment area. Other reptiles mentioned by the communities to exist within the catchment area included: *Python sebae, Varanus niloticus* and *Dispholidus typus*. However, these were not observed during the survey.

Large mammal species that were observed included: Vervet monkey (*Cercopithecus aethiops*) and Olive baboon (*Papio Anubis*). Other species reported by the local communities included: Warthog (*Phacochoerus*), Bushpig (*Potamochoerus Porcus*), Elephants (*Loxodonta cyclotis*), Giant forest hog (*Hylochoerus meinertzhageni*), Ruwenzori red duiker (*Cephalophus rubidus*), bushbucks (*Tragelaphus scriptus*), Rwenzori colobus monkey (*colobus angolenis ruwenzorii*) and Leopard (*Panthera pardus*) but are hardly seen. Primates such as blue monkeys, Angola colobus monkey, black-and-white colobus monkeys and Chimpanzees. Mammal species of conservation concern include the Rwenzori duiker (*Cephalophus rubidus*), forest elephants (*Loxodonta cyclotis*), eastern chimpanzees (*Pan troglodytes schweinfurthii*), Ruwenzori colobus (*Colobus angolensis ruwenzorii*) and L'Hoest's monkey (*Cercopithecus l'hoesti*). Some small mammals were recorded within the Intake proposed site areas and these included: African common dormouse (*Graphiurus murinus*), Common thicket rat (*Grammomys dolichurus*), Common striped grass rat (*Lemniscomys striatus*) and Tiny musk shrew (*Crocidura fuscomurina*). All the four species are labelled Least Concern (LC) under IUCN Red List and their main habitat are forest edges, woodlands and cultivated areas (IUCN 2022).

Some of the identified invertebrates included: Thread tail Dragonfly (*Ellatoneura sp*), Red Busker Dragonfly (*Urothermis assignata*), Yellow Wings Locust (*Oedaleus sp.*), Masson Wasps (*Delta emarginatum*), Paper Wasp (*Belonogaster dubia*) and Small Green Dung Beetle (*Gymnopleurus humanus*).

5.2.3 Flora along the transmission and Distribution Mains and the Water Treatment Plant site

The Montane Forest; This zone lies between 1800 – 2500 metres above sea level and characterised with medium sizable trees which have less dense canopies such as Prunus africana, Podocarpus latifolius, Prema angolensis, Sapium (Shirakiospsis) ellipticum, Stereospermum kunthianum, Strombosia scheffleri, Symphonia globulifera, Ensete ventricosum, Tree ferns and many other species.

- Bamboo Zone; The Transmission and Distribution area highest altitude is 2890m above sea level which lies in the Bamboo zone of RMNP (2500 3000 metres above sea level) and this zone is characterised with steep rocks which are covered with lichens and mosses. The ground is covered with a thick layer of bamboo leaves and some understorey plants including Acanthus spp, Mimulopsis elliotii being the common species and the valleys have got swampy vegetation such as *Lobelia gibberoa* and Giant heathers, *Philippia johnstonii* and *Erica kingaensis* are growing on narrow ridges. Some tree species can as well be found in this zone and they include; *Hagenia abyssinica, Podocarpus milanjianus, Dombeya torrida, Afrocrania volkensii, Maesa lanceolata and Dracaena afromontana*.
- Wetland areas and river banks: The wetlands and riverbanks have been encroached for cultivation of crops such as Banana (*Musa spp*), legumes such as *Phaseolus vulgaris*, *Cajanus cajan* and other crops like *Xanthosoma sagittifolium*, *Saccharum officinarum*. A few wetland species are still existing in much boggy areas and these include *Phragmites austrailis*, *Cyperus papyrus*, *Juncus africanum* and trees such as *Polysciaus fulva*, *Figs*, *Bridelia micrantha*, *Neoboutonia macrocalyx*, *Beilschmiedia ugandensis*, and many others were identified.
- Farm lands and settlement areas; The foothills are heavily tilled and crops such as Coffee, Theobroma cacao and Vanilla are grown for cash and food crops such as *Musa spp*, legumes and yams are grown in the ridges and valleys. A few indigenous and exotic tree species can be seen in the farmlands and extends from the boundaries of the Rwenzori Mountain National Park up to and these species include; *Spathodea campanulata, Markhamia lutea, Terminalia brownii, Fucus natalensis, Maesopsis eminii, Entada abyssinica, Maesa lanceolata, Prunus africana, Bersama abyssinica, Trema orientalis, Sapium ellipticum, Vernonia amygdalina, Polysciaus fulva Vangueria apiculata, Albizia*

coriaria, Pasea amaericana, Artocarpus heterophyllus and Cordia africana. As the project catchment area extends towards the gentle flat areas around Queen Elizabeth National Park, savanna vegetation species with thickets, bushy shrubs and relatively short trees which spread along the riverine and pasturelands and these include; Lantana camara, Tephrosia spp, Acacia spp, Albizia coriaria, Khaya anthotheca, Khaya senegalensis, Spathodea campanulata, Milicia excelsa, Hoslundia opposita, Acanthus spinosus, Sesbania sesbani, and many others.

5.2.1 Forests and Protected Areas along the transmission and Distribution Mains and the Water Treatment Plant site

- There are no central forest reserves along the transmission & Distribution Mains and at the Water treatment site and forests on private land have as well been cleared for cultivation of crops to feed the growing population. However, the area is endowed with two small sections of protected areas which include Rwenzori Mountain National Park with an area of 49 KM² lying inside the sub catchment and Queen Elizabeth National Park with a total area of 27.25 KM² lying inside the sub catchment.
- During the ESIA, it was noticed that the edges of the RMNP face a challenge of degradation from the local inhabitants who cut down trees for charcoal, fuel wood, set forest on fire during honey harvesting and scaring away the wild animals which encroach on their crops. QENP has minor encroachment since the boundary of the park within this sub catchment has been fenced off using electric fence which limits people from encroaching into the park but as well protect people's crops from wild animals such as elephants, Vervet monkeys and Baboons.



Plate 16: The forest vegetation on one of the hills near the Nyamugasani Hydro power plant within the transmission and Distribution areas



Plate 17: Most lowland areas within the Nyamugasani middle catchment have been intensively cultivated up the River banks of Nyamugasani and its tributaries in the areas of Kyondo, Kisinga, Kyarumba and Nyakatonzi

5.2.2 Fauna along the transmission and Distribution mains and the WTP site

Data presented herein is incidence data only showing species encountered in different places/habitats, with an indication of their habitat associations. Emphasis was majorly placed on conservation status, indicator species and the habitat change impacts especially in critical areas. Though most of the natural habitat in different places was altered by human action (mainly crop cultivation), it is likely that extended periods of field surveys spanning the different seasons might turn up several more species than have been recorded in the current survey. The table below presents bird species encounters within the catchment and habitat specialization. No species of conservation concern under IUCN Red List Category were recorded.

| No. | Common name | Specific name | Ecological type |
|-----|-----------------------|------------------------|-----------------|
| 1. | Hamerkop | Scopus umbretta | W |
| 2. | African pied wagtail | Motacilla aguimp | W |
| 3. | Black-headed heron | Ardea melanocephala | W |
| 4. | Cattle egret | Bubulcus ibis | w |
| 5. | Black-headed weaver | Ploceus cucullatus | |
| 6. | Black-necked weaver | Ploceus nigricollis | f |
| 7. | Spectacled weaver | Ploceus ocularis | f |
| 8. | Slender-billed weaver | Ploceus pelzelni | fW |
| 9. | Hadada | Bostrychia hagedash | w |
| 10. | Glossy ibis | Plegadis falcinellus | W |
| 11. | African white-backed | Gyps africanus | |
| 12. | African hawk eagle | Hieraaetus spilogaster | |
| 13. | Long-crested eagle | Lophaetus occipitalis | f |
| 14. | Fish eagle | Haliaeetus vocifer | W |
| 15. | Black kite | Milvus migrans | А |

Table 47: Bird Species Encountered within the project areas along Transmission and Distribution mains

| 16. | Grey kestrel | Falco ardosiaceus | |
|-----|--------------------------|----------------------------|-----|
| 17. | Red-necked spurfowl | Francolinus afer | |
| 18. | Crested francolin | Francolinus sephaena | |
| 19. | Helmeted guineafowl | Numida meleagris | |
| 20. | Black crake | Limnocorax flavirostra | W |
| 21. | Black-bellied bustard | Eupodotis melanogaster | |
| 22. | Crowned plover | Vanellus coronatus | |
| 23. | Wattled plover | Vanellus senegallus | W |
| 24. | Ring-necked dove | Streptopelia capicola | f |
| 25. | Red-eyed dove | Streptopelia semitorquata | f |
| 26. | Green pigeon | Teron australis | F |
| 27. | Red-headed lovebird | Agapornis pullaria | f |
| 28. | Brown parrot | Poicephalus meyeri | |
| 29. | Ross' turaco | Musophaga rossae | F |
| 30. | African cuckoo | Cuculus gularis | A |
| 31. | Gabon nightjar | Caprimulgus fossii | |
| 32. | Pied kingfisher | Ceryle rudis | W |
| 33. | Lilac-breasted roller | Coracius caudata | |
| 34. | Broad-billed roller | Eurystomus glaucurus | Afw |
| 35. | Green wood hoopoe | Phoeniculus purpureus | |
| 36. | Grey hornbill | Tockus nasutus | |
| 37. | Spotted-flanked barbet | Lybius lacrymosus | |
| 38. | Paradise flycatcher | Terpsiphone viridis | f |
| 39. | Plain -backed pipit | Anthus leucophrys | |
| 40. | Yellow-throated longclaw | Macronyx croceus | |
| 41. | Black-headed gonolek | Laniarius barbarus | f |
| 42. | Tropical boubou | Laniarius ferrugineus | f |
| 43. | Grey-capped warbler | Eminia lepida | fw |
| 44. | Tawny-flanked prinia | Prinia subflava | fw |
| 45. | Black-headed tchagra | Tchagra senegala | |
| 46. | Common fiscal | Lanius collaris | |
| 47. | Grey-backed fiscal | Lanius excubitorius | Afw |
| 48. | Helmet shrike | Prionops plumata | f |
| 49. | Violet-backed starling | Cinnyricinclus leucogaster | Af |
| 50. | Wattled starling | Creatophora cinerea | |
| 51. | Splendid glossy starling | Lamproturnis splendidus | F |
| 52. | Yellow-billed oxpecker | Buphagus africanus | |
| 53. | Mariqua sunbird | Nectarinia mariquensis | |
| 54. | Scarlet-chested sunbird | Nectarinia senegalensis | f |
| 55. | Yellow white-eye | Zosterops senegalensis | f |

| Waxbill Estrilda astrild | | w |
|--------------------------|---|---|
| Black flycatcher | Melaenornis edolioides | |
| Lead-coloured | Myioparus plumbeus | f |
| Yellow-fronted canary | Serinus mozambicus | |
| Nubian woodpecker | Campethera nubica | |
| Cardinal woodpecker | Dendropicos fuscescens | |
| Black-headed oriole | Oriolus larvatus | f |
| Pied crow | Corvus albus | |
| African penduline tit | Remiz caroli | f |
| Black-lored babbler | Turdoides melanops | |
| Black cuckoo shrike | Campephaga flava | Af |
| Common bulbul | Pycnonotus barbatus | f |
| African thrush | Turdus pelios | f |
| Winding cisticola | Cisticola galactotes | w |
| White-throated bee-eater | Merops albicollis | Af |
| Little bee-eater | Merops pusillus | |
| | Black flycatcherLead-colouredYellow-fronted canaryNubian woodpeckerCardinal woodpeckerBlack-headed oriolePied crowAfrican penduline titBlack-lored babblerBlack cuckoo shrikeCommon bulbulAfrican thrushWinding cisticolaWhite-throated bee-eater | Black flycatcherMelaenornis edolioidesLead-colouredMyioparus plumbeusYellow-fronted canarySerinus mozambicusNubian woodpeckerCampethera nubicaCardinal woodpeckerDendropicos fuscescensBlack-headed orioleOriolus larvatusPied crowCorvus albusAfrican penduline titRemiz caroliBlack-lored babblerTurdoides melanopsBlack cuckoo shrikeCampephaga flavaCommon bulbulPycnonotus barbatusAfrican thrushTurdus peliosWinding cisticolaCisticola galactotesWhite-throated bee-eaterMerops albicollis |

A - Afro tropical migrant (a species migrating with in Africa), P - Palearctic migrant (a species which breeds in Europe or Asia), FF - forest specialists (species of typical forests interiors), F - Forest generalists (species less specialized also occur in small patches of forests), G – Grassland species, f - Forests visitors, W - Water bird specialists (normally restricted to wetlands or open waters), w - Water bird non specialists (often found near water).

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Large mammal species that were observed included: Vervet monkey (*Cercopithecus aethiops*) and Olive baboon (*Papio Anubis*). Other species reported by the local communities included: Warthog (*Phacochoerus*), Bushpig (*Potamochoerus Porcus*), Banded mongoose (*Mungos mungo*), Hippopotamus (Hippopotamus amphibious), Waterbuck (*Kobus ellipsiprymnus*), Common duiker (*Sylvicapra grimmia*), African Elephant (*Loxodonta africana*) and African buffalo (*Syncerus caffer*).

Some small mammals were recorded within the catchment area and these included: African common dormouse (*Graphiurus murinus*), Common thicket rat (*Grammomys dolichurus*), Common striped grass rat

(*Lemniscomys striatus*) and Tiny musk shrew (*Crocidura fuscomurina*). All the four species are labelled Least Concern (LC) under IUCN Red List and their main habitat are forest edges, woodlands and cultivated areas (IUCN 2022).

Two families of the butterfly species were identified within the catchment area i.e. Nymphalidae family (*Danaus chrysippus, Junonia hierta, Bematistes aganice species*) and Pieridae family (*Colotis evenina, Belenois creona, Eronia leda, Catopsila florella and Eurema hecabe species*). None of the species is threatened and are known to have wider breeding ranges. Their common habitants are wetlands, cultivated areas and grasslands and their ecological classification is open habitat species, rapid colonizer of fields, towns, and road verges.

Some of the identified invertebrates included: Thread tail Dragonfly (*Ellatoneura sp*), Red Busker Dragonfly (*Urothermis assignata*), Yellow Wings Locust (*Oedaleus sp.*), Masson Wasps (*Delta emarginatum*), Paper Wasp (*Belonogaster dubia*), Small Green Dung Beetle (*Gymnopleurus humanus*) and Common Cockroach (*Deropeltis erythrocephala*).

5.3 Aquatic Assessment

5.3.1 Macroinvertebrates

* Ephemeroptera, Plecoptera and Trichoptera (EPT) and Total Taxa Indices

A total of 23 taxa were recovered comprising of: Caenis, Baetidea, Acanthiops, Afronurus, Euthraulus, Neoperla, Cheumatopsyche, Hydropsyche, Lepidostoma, Chimarra, Alpogastra, Aeshna, Chironomidae, Simulium, Tipula, Limonia, limnophila, Antocha, Atherix, and Cyphon, Elmidae, Planaria and Plesiopora). These 23 taxa belong to six insect orders: Ephemeroptera (mayflies), Plecoptera (stoneflies), Trchoptera (Caddis flies), Odonata (dragonflies) and Diptera (True two-winged flies) Coleoptera (Beetles) and the flat worms, the order Tricladida (Planaria) and round worms, the class Oligochaeta (aquatic earthworms) represented by one order, Plesiopora (**Table 47**). The benthic macroinvertebrates community was dominated by Diptera contributing about 61% and 70% of the total numerical abundance in the Nyamuruseghe and Nyamugasani sites respectively. The order was majorly constituted by the genus Simulium. The latter further dominated the individual taxa at 51% and 70% in the respective areas. The concern here is, the fear for the river blindness which the simulids are vectors of river blindness. The second large group was the Ephemeroptera constituted particularly by the Baetids. The taxon (Baetidae) composed 17.7 and 23.5% of the total numerical abundance **(Table 47).** In addition, they were also widely distributed in all the sampled sites (**Table 48).**

The Ephemeroptera, Plecoptera and Trichoptera (EPT) indices two areas were respectively 9 and 6. Both indices suggest fair water quality with fairly substantial likelihood of pollution (Mandaville, 2002). The results reveal biodiversity indices of 5.18 and 5.42 in Rivers Nyamuruseghe and Nyamugasani water project areas respectively. Notwithstanding, the two indices further propose better for conditions for the Nyamuruseghe site than for Nyamugasani. The better conditions could still be reflected by the higher taxa richness conditions recorded in the respective project areas.

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The caddis flies, *Hydropsyche* and *Lepidostoma* were also relatively abundant, but the former was concentrated only in the Nyamuruseghe sites. This could be due to nature of the river (Nyamuruseghe) being quite forested unlike the Nyamugasani area. Earlier reports by Twongo et al, (2018) recorded taxa of 22 and suggested the good conditions attributed to natural, vegetative nature particularly upstream. Like it is for the similar systems, e.g., River Rwimi (Rwimi shpp monitoring reports), no mollusks were registered in the samples. Therefore, no suspicion of Bilharzia disease that is transmitted by some snail species *Biomphalaria* and *Bulinus* (Mandahl-Barth, 1957; Adriko et al., 2013; Candia et al., 2015).

| Recorded taxa | | Occurrence | | Contribution (%) | | |
|---------------|---------------|-----------------------|----------------------|-----------------------|----------------------|--|
| Class | Lower taxa | River Nyamuruseghe | River Nyamugasani | River Nyamuruseghe | River Nyamugasani | |
| | Caenis | \checkmark | \checkmark | 0.7 | 1.1 | |
| | Baetidae | \checkmark | \checkmark | 17.7 | 23.5 | |
| Ephemeroptera | Acanthiops | \checkmark | \checkmark | 1.1 | 0.3 | |
| | Afronurus | \checkmark | \checkmark | 4.2 | 1.0 | |
| | Eutraulus | | \checkmark | | 0.1 | |
| Plecoptera | Neoperla | \checkmark | | 0.4 | | |
| | Alpogastra | | | 0.1 | | |
| Odonata | Aeshna | | | 1.2 | | |
| Diptera | Chironominae | | \checkmark | 4.8 | 0.6 | |

Table 48: Occurrence, distribution and composition of the benthic macroinvertebrates in the Rivers Nyamuruseghe and Nyamugasani area, November 2022

| Recorded taxa | | Occurrence | | Contribution (%) | | |
|---------------|----------------|-----------------------|----------------------|-----------------------|----------------------|--|
| Class | Lower taxa | River Nyamuruseghe | River Nyamugasani | River Nyamuruseghe | River Nyamugasani | |
| | Simulium | \checkmark | \checkmark | 55.1 | 70.5 | |
| | Tipula | \checkmark | | 0.5 | | |
| | Limonia | | \checkmark | | 0.1 | |
| | Limnophila | \checkmark | | 0.1 | | |
| | Antocha | | \checkmark | | 0.1 | |
| | Atherix | \checkmark | \checkmark | 0.1 | 0.1 | |
| Trichoptera | Cheumatopsyche | \checkmark | | 0.5 | | |
| | Hydropsyche | \checkmark | | 8.3 | | |
| | Lepidostoma | \checkmark | \checkmark | 3.3 | 1.7 | |
| | Chimarra | \checkmark | | 0.8 | | |
| Coloomtono | Cyphon | | \checkmark | | 0.9 | |
| Coleoptera | Elmidae | \checkmark | | 0.7 | | |
| Turbellaria | Planaria | \checkmark | \checkmark | 0.1 | 0.1 | |
| Oligochaeta | Plesiopora | \checkmark | | 0.1 | | |
| Total count | | 735 | 1051 | | | |
| Number of | | | | | | |
| taxa | | 19 | 13 | | | |
| FBI | | 5.18 | 5.42 | | | |

| Recorded taxa | | Sampled sites | | | | | | |
|------------------------|----------------|----------------|-------------|------------|---------------|-------------|------------|--|
| Higher taxa Lower taxa | | R Nyamuruseghe | | | R Nyamugasani | | | |
| | | Upstream | Mid-section | Downstream | Upstream | Mid-section | Downstream | |
| Ephemeroptera | Caenis | 1 | 2 | 2 | 5 | 7 | 0 | |
| | Baetis | 79 | 26 | 25 | 103 | 92 | 52 | |
| | Acanthiops | 0 | 0 | 8 | 0 | 2 | 1 | |
| | Afronurus | 28 | 1 | 2 | 6 | 4 | 0 | |
| | Eutraulus | 0 | 0 | 0 | 0 | 0 | 1 | |
| Plecoptera | Neoperla | 2 | 1 | 0 | 0 | 0 | 0 | |
| Odonata | Alpogastra | 1 | 0 | 0 | 0 | 0 | 0 | |
| | Aeshna | 8 | 0 | 1 | 0 | 0 | 0 | |
| Diptera | Chironominae | 7 | 4 | 24 | 1 | 5 | 0 | |
| | Simulium. | 22 | 203 | 180 | 300 | 148 | 293 | |
| 116 | Tipula | 1 | 0 | 3 | 0 | 0 | 0 | |
| | Limonia | 0 | 0 | 0 | 0 | 0 | 1 | |
| | Limnophila | 0 | 1 | 0 | 0 | 0 | 0 | |
| | Antocha | 0 | 0 | 0 | 0 | 0 | 1 | |
| | Atherix | 1 | 0 | 0 | 0 | 1 | 0 | |
| Trichoptera | Cheumatopsyche | 4 | 0 | 0 | 0 | 0 | 0 | |
| | Hydropsyche | 21 | 29 | 11 | 0 | 0 | 0 | |
| | Lepidostoma | 2 | 5 | 17 | 0 | 18 | 0 | |
| | Chimarra | 1 | 4 | 1 | 0 | 0 | 0 | |
| Coleoptera | Cyphon | 0 | 0 | 0 | 0 | 6 | 3 | |
| | Elmidae | 0 | 2 | 3 | 0 | 0 | 0 | |
| Turbellaria | Planaria | 0 | 0 | 1 | 0 | 1 | 0 | |
| Annelida | Oligochaeta | 0 | 0 | 1 | 0 | 0 | 0 | |

Table 49: Benthic macroinvertebrates taxa and counts recorded in the different sampled sites in Rivers Nyamuruseghe and Nyamugasani areas, November 2022

Some photographs of the organisms registered in the samples are shown (**Plate 16**). Important to note that all the recorded taxa in this segment of the river have cosmopolitan distribution and have been observed elsewhere in the river systems within and out the region like all the regional rivers e.g. Rivers Rwimi, Sindila/ Ndugutu and Kyambura (SHPH monitoring report) and in the R. Aturukuku in Eastern region of Uganda (**Ochieng** et al., 2021). The benthic community is further comprised by taxa of least concern in accordance with the IUCN red list of threatened species (IUCN, 2020).

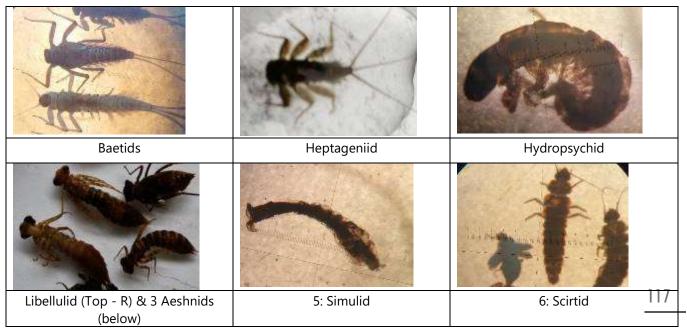


Plate 18: Some of the benthic macroinvertebrate taxa recorded in R. Nyamuruseghe and Nyamugasani area, November 2022

The benthic macroinvertebrate community observed in the project area comprised of the common groups found also in other systems within and out the region and were dominated by the mayflies (Ephemeroptera) and blackflies (Simulidae). The community composition, FBI values suggest fair water quality in both proposed areas, but quite better in Nyamuruseghe area than Nyamugasani. In addition, no mollusc was found in the project area, the river conditions around appear not favourable for the organisms, therefore suggesting unlikelihood of bilharzia outbreak. However, the presence of *Simulium* spp. in the Project area, call for attention of all stakeholders within surveillance programs for the river blindness outbreak. Although the macroinvertebrates recorded are of Least Concern in the IUCN Red List, ecological sustainability, where possible, Planting of vegetation after the construction to deal with the problem of soil erosion, will be very important to minimise nutrient enrichment to the rivers.

5.3.2 Fishes

Fish species composition, abundance, and distribution

The taxa composition and numerical abundance of fish species River Nyamugasani and Nyamuruseghe are summarized in **Table 48**. A total of 5 fish species, 5 genera and 4 families were recorded from the sampling locations

The family Cyprinidae were the most diverse genera and the fish species recorded were typical riverine species. The catch was dominated by the mountain Marbled catfish Amphilius jacksonii "*Ensonzi*" which were followed by the cyprinid *Labeobarbus ruwenzorii* "*Enzungule*". The distribution and habitat range of Labeobarbus ruwenzorii was similar to earlier reports and studies by Twongo et al. (2018). This fish prefers and utilizes specialized habitats – rocky and fast flowing water environment and thus its deemed confined to the rivers in the Mount Rwenzori region (Greenwood, 1966) and the local elders confirmed that Labeobarbus ruwenzorii is resident in rivers Rwimi, Lhubiriha, Sebwe, Nyamwamba and Mubuku.

In terms of numbers, a survey by Twongo et al. (2018) within the same reach of rivers, the diversity and abundance of fish recorded were within the same range given high efficiency of the sampling gear – electrofisher and adequate habits sampled. Particularly, in the earlier sampling in 2018 by Twongo et al. (2018) in River Nyamuruseghe, a tributary of River Nyamugasani recovered 45 fish. This comprised of *Amphilius jacksonii* (11 fish), *Clarias liocpehlaus* (18 fish), *Labeobarbus ruwenzorii* (7 fish), *Aplocheilichthys eduardensis* (2 fish) and *Barbus jacksonii* (7 fish). The fish species from this river is like that of Nyamugasani especially the zones of project areas.

Given the nature of the specialized distribution of the fish species, attention must be put in place to avoid changing the specialised habitat structures (rocks with fast flowing water) in rivers Nyamugasani and Nyamuruseghe. Additionally, deposition of debris from construction works might impair water quality and consequently fisheries diversity. It's important to note that Labeobarbus ruwenzorii is found only in Uganda, its natural habitat is rivers in Mt Rwenzori. This species is assessed according to the IUCN Red Data list as Vulnerable (Vreven, 2006).

| Families | Species | Nyamugasani | Nyamuruseghe | Total | |
|-----------------|------------------------------|-------------|--------------|-------|--|
| Cyprinidae | Barbus jacksonii | 8 | 2 | 10 | |
| | Labeobarbus ruwenzorii | 17 | 9 | 26 | |
| Clariidae | Clarias liocephalus | 5 | 12 | 17 | |
| Amphiliidae | Amphilius jacksonii | 50 | 28 | 78 | |
| Cyprinodontidae | Aplocheilichthys eduardensis | 1 | 4 | 5 | |
| | Total no. of fish/Site | 81 | 55 | 136 | |
| Families = 4 | Species = 5 | 5 | 5 | 5 | |

Table 50: Occurrence, distribution and composition of fish species in the Rivers Nyamuruseghe and Nyamugasani area,November 2022

The fish species: Labeobarbus ruwenzorii, Amphilius jacksonii, Clarias liocephalus exhibited positive allometric growth ($b \le 3$) but generally, the growth coefficient was ≥ 2.5 except for Labeobarbus ruwenzorii $b \le 2.3$ which is an indication of good performance.

The fish species recovery generally from both rivers are similar given the connectedness between the rivers/streams. Sampling in the tributaries signifies the endemicity of Labeobarbus ruwenzorii (*Varicorhinus ruwenzorii*) to Mount Rwenzori rivers thus justifies the Vulnerable (VU) status on the IUCN Red list. Although the fish species recovered during this survey indicate a good relative condition factor, measures should be put in place not to hinder the macro and meso-habitats within rivers Nyamugasani and Nyamuruseghe, and not impair water quality. Finally, biological monitoring of the sites during and after construction will be necessary to ensure no adverse changes, if any, on the environment and biodiversity

5.4 Social Environment

5.4.1 Population

The proposed supply area is 1,723km² and includes seven Sub Counties namely Kyondo, Muhokya, Munkunyu, Kisinga, Kyarumba, Lake Katwe and Nyakatonzi with an estimated total population of 213,611 inhabitants and 41,513 households. The existing institutions include 114 primary schools, 24 secondary schools, 18 Health Centres, 1 hospital, 7 Sub County headquarters, among others.

Phase I of the project to be funded under the IWMDP will cover infrastructure of the intake, raw water main, water treatment plant, transmission, and distribution to cover parts of Kyarumba, Kyondo, Kisinga and L. Katwe Sub Counties with an estimated population of 131,390 inhabitants and 25,247 households. The total population of the schools in the four Sub Counties in phase I is 30,598 children. It is anticipated that the project will benefit 44,531 people with portable water and 29,280 people with basic sanitation and hygiene improvement messages by end of the project in 2025.

The population of Kasese has continued to grow steadily over the years and, at the current growth rate of 2.4% per annum, the population is projected to almost double every 20 years. At the last census in 2014 the district population stood at 694, 987 people, (National Population and Housing Census 2014, Area Specific profiles)

Table below shows total population by age group and sex in Kasese district according to the Uganda 2014 National Census.

| Age Group | Male | Female | Total |
|-----------|---------|---------|---------|
| 0-9 | 125,354 | 118,016 | 243,370 |
| 10-19 | 86,385 | 88,844 | 175,229 |
| 20-39 | 82,356 | 99,778 | 182,134 |
| 40-59 | 32,254 | 36,394 | 68,648 |
| 60+ | 11,866 | 13,740 | 25,606 |
| Total | 338,215 | 356,772 | 694,987 |

Table 51: Total population by age group and sex

5.4.2 Economic Activities

People in the project area are predominantly agriculturalists involved in both crop production as well as animal rearing. Household subsistence farm production still dominates. Other economic activities within the project area include: fishing; cattle keeping; service industry; trade in commodities; manufacturing industries, mining (lime, cobalt) as well as lumbering.

Agriculture takes up the major economic activities employing over 73 percent of the total population. Most of farmers are small holders practicing subsistence agriculture. There is shortage of land implying the need for optimal utilisation of the available land. Households suffer from land fragmentation largely due to large family size. Other activities include trade transactions in the various town centers 82 (8.9%), fishing, welding, formal employment amongst others operating small kiosk grocery shop, and road side sale of farm products. During the field survey it was observed that peripheral communities engage in several other casual activities like carpentry, masonry, brick laying, boda riding among others. The common market is readily available within the nearby markets and within the community members who use the products.

| | Major So | urce of Income | | | | | |
|-------------------|----------|----------------------|------------------|---------|------------------|----------------------|--------------------|
| TC/ Subcounty | Farming | Formal Employment | Semi- skilled | Trading | Casual Lobour | Total @ Subcounty | %ge @ Subcounty |
| Kahokya | 66 | 1 | 1 | 2 | 5 | 75 | 6.2 |
| Kyondo | 105 | 4 | 2 | 12 | 11 | 134 | 11.1 |
| Kisinga | 34 | 12 | 3 | 3 | 2 | 54 | 4.5 |
| L. Katwe | 1 | 1 | 1 | 7 | 1 | 11 | 0.9 |
| Kitabu | 96 | 7 | 0 | 8 | 7 | 118 | 9.8 |
| Kyarumba | 62 | 2 | 2 | 2 | 5 | 73 | 6.1 |
| Nyakatonzi | 12 | 1 | 0 | 0 | 0 | 13 | 1.1 |
| Munkunyu | 135 | 21 | 7 | 10 | 5 | 178 | 14.8 |
| Kyarumba TC | 98 | 14 | 7 | 11 | 9 | 139 | 11.6 |
| Kinyamaseke TC | 21 | 3 | 1 | 5 | 1 | 31 | 2.6 |
| Kisinga TC | 40 | 15 | 6 | 4 | 4 | 69 | 5.7 |
| - Muhokya TC | 4 | 1 | 1 | 18 | 0 | 24 | 2.0 |
| Total | 674 | 82 | 31 | 82 | 50 | 919 | 76.4 |
| Total %ge | 73.3 | 8.9 | 3.4 | 8.9 | 5.4 | 100.0 | |

Table 52: Major source of income per sub county



Plate 19: Timber selling and lumbering as one of the socio-economic activities within the project area of Kasese



Plate 20: Stone quarrying along River Nyamugasani as one of the socio-economic activities within the project area

5.4.3 Sanitation

The 2015 feasibility study and detailed engineering design for Nyamugasani water supply and sanitation System in Kasese district revealed that 92% of the households have toilet facilities however it was observed that the latrines were unhygienic, poorly constructed and maintained. 54% of the households discharge grey water into the open areas, 40% of the households had gazetted disposal areas, while 6% discharge into the drainage system. The survey findings further indicate that 60% of households dispose of solid waste into garbage pits, 9% into gazetted collection points while 30% into open areas.

About 92% of interviewed households reported owning a toilet facility. The general toilet facilities in the study area are pit latrines built in mud and cement walls. Mud pit latrines (76.7%) were the most dominant, followed by the cemented pit latrines (23.2%) and a limited number of flush toilets (0.2%).



Plate 21: An example of the Pit latrine within the project area of Kyarumba Sub County

5.4.4 Existing water Supply Situation

The majority of the population in the project area (59%) use open water sources for all their water needs according to the survey conducted for this study. Within the project affected households, the commonly used sources of water for domestic use include Lake/River 674 (73.3%) followed by Tap

water 145 (15.8%), ponds/dams 35 (3.8%) as shown in figure below. When asked how safe the water is, 535 of the respondents making (58.2%) which is more than half of the surveyed HHs admitted to sharing their water sources with animals a true indicator of unsafe water. The survey also revealed that 612 (66.6%) of the population access water in between 0-1km; being the nearest water source within 1km radius. Much as the water source is within the 1km radius, it doesn't provide the safest water and due to the mountainous terrain, it takes a lot of time to get home with a jerrycan of water. 302 of the respondents making (32.9%) access water between 2-3Km, while 5 (0.5%) access water in a distance of 3-4km away.

| | | | | | | ., | | | |
|----|-------------|-----------------------|-----------------|-----------------|---------------------|------|-----------|-----------|--|
| | TC/ | Source of Water | | | | | Total @ | %ge @ | |
| | Subcounty | Community Borehole | Lake / River | Ponds / Dams | Protected Spring | Тар | Subcounty | Subcounty | |
| | Kahokya | 28 | 12 | 35 | 0 | 0 | 75 | 6.2 | |
| | Kyondo | 0 | 101 | 0 | 0 | 33 | 134 | 11.1 | |
| | Kisinga | 2 | 41 | 0 | 0 | 11 | 54 | 4.5 | |
| | L. Katwe | 0 | 6 | 0 | 0 | 5 | 11 | 0.9 | |
| | Kitabu | 28 | 83 | 0 | 0 | 7 | 118 | 9.8 | |
| | Kyarumba | 0 | 60 | 0 | 0 | 13 | 73 | 6.1 | |
| | Nyakatonzi | 0 | 13 | 0 | 0 | 0 | 13 | 1.1 | |
| | Munkunyu | 0 | 166 | 0 | 0 | 12 | 178 | 14.8 | |
| | Kyarumba TC | 0 | 125 | 0 | 0 | 14 | 139 | 11.6 | |
| | Kinyamaseke | | | | | | | | |
| 22 | TC | 5 | 21 | 0 | 1 | 4 | 31 | 2.6 | |
| | Kisinga TC | 1 | 27 | 0 | 0 | 41 | 69 | 5.7 | |
| | Muhokya TC | 0 | 19 | 0 | 0 | 5 | 24 | 2.0 | |
| | Total | 64 | 674 | 35 | 1 | 145 | 919 | 76.4 | |
| | % | 7.0 | 73.3 | 3.8 | 0.1 | 15.8 | 100.0 | | |

| Table 53: | Source | of | water | nor | sub | county | /TC |
|-----------|---------|----|-------|-----|-----|---------|-----|
| Tuble 33: | 2001 66 | 01 | wulei | per | 500 | COUTINY | |

106 respondents making (11.5%) of the surveyed population admitted to buying water for domestic use between UGX 100-1000. The remaining 813 (88.5%) indicated that they do not buy water.

The surveyed population that buys water indicated that they do so due to their inability to carry the weight of a jerrycan from the water source to their homes or limited time to do so themselves. It should be noted there are parishes without a single water source nevertheless, there are visible merchants of water within the community who earn a living through selling water that they fetch from the community boreholes. It is imperative to note that the price charged by these merchants is determined by the distance between the water source and client residence.

There are a number of seasonal and perennial Rivers draining the projected area. These include Nyamugasani and Dunguliha draining southwards towards Lake Edward. Other rivers draining the area include river Rwembyo, Nyakatsa, Mihasa, Kajwenge and Kanyampara. Because of the high human population and the use of unsustainable agricultural practices on the steep slopes, the rivers draining into Lake Edward are usually turbid from heavy sediment load from agricultural runoff. As a result, the quality of water from these rivers may not be fit for human consumption. In the recent past, the major rivers in Kasese such as Nyamwamba, Mubuku, Sebwe, Lhubirigha and Nyamugasani have experienced flood events; the most recent being on 10th May 2020 due to heavy rains in Mt. Rwenzori National Park, which is a protected forest.



Plate 22: Some of the existing water sources within the project area of Kasese

5.4.5 Settlement Patterns & Housing

The settlement patterns follow the different land use categorization in the area. These categorizations include Lake communities/landing sites, roads, cattle keeping communities, cyclic farming communities, mountain homes, low lying villages and trading centres.

The project area comprises Semi permanent structures characterised by mud walls and iron sheets that the majority of families (about 73%) live. About 6% are sheltered in permanent structures of mostly brick walls, cement and iron roofs. However, a significant number of households (21%) dwell in temporary structures of mostly mud walls and grass thatched roofs.

5.4.6 Healthcare

Health is an important component of human capital because ill-health results in loss of earning opportunities and perpetuation of poverty hence the need to have quick and easy access to health care services. Therefore, the socio-economic study set out to establish the availability of medical 123 services in the project area. Results from the field indicate at the project area has a variety of health facilities ranging from Referral hospitals, Health centre II, Health centre III, Health centre IV and many other types of health units as shown in the table below. According to the WHO⁵, Health-careassociated infections affect hundreds of millions of patients every year, with 15% of patients estimated to develop one or more infections during a hospital stay. Unsafe water and sanitation and poor hygiene practices in health care facilities lead to health-care-acquired infections. Additionally, most of the health centres visited by the field team, it was observed that most have inadequate or lack of water to run their operations. They are forced to get their water from unreliable points including boreholes and streams. Only Kagando Mission Hospital Foundation had a reliable water supply which it also supplies to certain sections of the community. Construction of the new water supply system will go a long way in boosting the water supply and quality and resultantly reduce on the unsafe water related diseases as shown in below

| Type of Health facility | Frequency | Valid Percentage |
|-------------------------|-----------|------------------|
| Referral hospital | 1 | 0.1 |
| Church run hospital | 1 | 0.1 |
| Privately run hospital | 57 | 7.8 |
| Health Centre III | 338 | 46.2 |
| Health centre II | 208 | 28.4 |
| Maternity hospital | 1 | 0.1 |
| Community health centre | 18 | 2.5 |

Table 54: Type of healthcare facility

⁵ Water, Sanitation, and Hygiene Service Availability at Rural Health Care Facilities in Southwestern Uganda-1 https://www.hindawi.com/journals/jeph/2018/5403795/-Accessed 22/03/22

| Privately run clinic /drug shop | 23 | 3.1 |
|---------------------------------|-----|-------|
| Health center IV | 85 | 11.6 |
| Total | 732 | 100.0 |

Source-Field survey

5.4.7 Diseases within Study Area

From the field/survey data, prevalent diseases that impact most on the respondents in the project area were reported to be malaria (49.6%), respiratory tract infections (30.2%), Intestinal infections (1.9%) and skin disease (0.9%).

| Disease burden Percentage | | | | | | |
|---------------------------|-------------|--|--|--|--|--|
| Disease builden | reicentage | | | | | |
| Malaria | 49.6% (692) | | | | | |
| Cough | 30.2% (422) | | | | | |
| Cholera | 0.8% (11) | | | | | |
| Dysentery | 0.8% (11) | | | | | |
| HIV | 0.4% (5) | | | | | |
| HPV | 0.1% (1) | | | | | |
| Intestine infections | 1.9% (26) | | | | | |
| Ulcers | 2% (28) | | | | | |
| Skin disease | 0.9% (13) | | | | | |
| Others | 13.4% (187) | | | | | |
| Total | 100% (1396) | | | | | |
| Source-Field survey | | | | | | |

Table 55: Disease burden in the project area

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5.4.8 Currently Adopted Onsite Water Treatment Approaches

There is scarcity of information about the quality and safety of drinking water in Africa and Uganda. Without such vital information, sustainable development goal number 6 which promotes availability and sustainable management of water and sanitation remains elusive especially in developing countries and rural Uganda to be exact. Therefore, planning for a safe water supply scheme needs to be cognizant of these facts as such, plan accordingly. The baseline survey took cognizance of this critical aspect and interviewed respondents about it, majority (48.1%) indicated not boiling the water, and 38.1% indicated that they boil it, 13.8% use water guard, and 3.4 use chlorine as shown in the table below.

| Sub County/ Town Council | | Adopted on | nsite Water | [·] Treatme | nt Approache | S |
|--------------------------|-----------|-------------|-------------|----------------------|--------------|-------------|
| | Boiling | Water guard | Filtering | Chlorine | Other | Total |
| Kyondo | 3.6% (24) | 0.6% (4) | 0.4% (3) | 0.1% (1) | 5.8% (39) | 9.9% (67) |
| Muhokya | 4.5% (30) | 0.7% (5) | _ | 0.1% (1) | 3.1% (21) | 7.9% (53) |
| Mukunyu | 0.6% (4) | _ | _ | _ | 3.7% (25) | 4.3% (29) |
| Kisinga | 6.8% (46) | 2.5% (17) | _ | 0.3% (2) | 4.5% (30) | 12.9% (87) |
| Kyarumba | 1.8% (12) | _ | 0.4% (3) | _ | 6.2% (42) | 8.3% (56) |
| Lake Katwe | 6.5% (44) | 3.6% (24) | 2.4% (16) | 0.1% (1) | 7% (47) | 19.1% (129) |
| Nyakatonzi | 2.5% (17) | _ | 0.1% (1) | _ | _ | 2.7% (18) |
| Kahokya | 3.3% (22) | 1.8% (12) | _ | _ | 9.2% (62) | 13.9% (94) |
| Kyarumba TC | 4% (27) | 0.9% (6) | _ | 0.1% (1) | 5.5% (37) | 10.1% (68) |
| Kinyamaseke TC | 2.4% (16) | 1.6% (11) | _ | 0.1% (1) | 2.4% (16) | 5.9% (40) |
| Kisinga TC | 2.2% (15) | 2.1% (14) | _ | 0.7% (5) | 0.7% (5) | 4.9% (33) |

Table 56: Currently Adopted Onsite Water Treatment Approaches

| Total | 38.1%(257) | 13.8%(93) | 3.4%(23) | 1.8%(12) | 48.1(324) | 100%(674) |
|-------|------------|-----------|----------|----------|-----------|-----------|

Source-Field survey

5.4.9 Energy Sources

According to the survey, 865 (94.1%) of the Households in the project area use firewood as a source of energy for cooking. This is supplemented with charcoal 52 (5.7%) and Kerosene at 4 (0.4%). The use of firewood is mainly due to its cost effectiveness and availability. The main source of lighting is kerosene lamps (88.5%) followed by solar 7.9 % and 3.6% hydro power. (This poses a threat on the forestry resources in the project areas. There is great potential of developing hydro-electricity in the district; 04 hydropower dams are operational in the district and these include Lhubiriha, Kilembe Mines, Bugoye Hydro and Kasese Cobalt Company Limited generating 5 MW, 13 MW and 7 MW respectively. Additional 04 hydro power schemes which are being developed in the district; these include Rwimi, Kakaka, Nyamwamba and Nyamugasani I & II. It is expected that by 2020, over 50 MW of hydro power will be generated in the district which shall be supplied to the national grid and also enhance the government's rural electrification programme (Kasese District 2016). The district also has a potential of generating up to 140MW of electricity from the Katwe geothermal resource; feasibility studies are yet to be concluded on this.



Plate 23: The Nyamugasani Hydro Power Plant in Kasese that generates Hydro Electric Power in the area

5.4.10Communication Infrastructure and Transport

Most of the areas are accessible by a network of gravel roads and the Kasese-Mpondwe and Kasese-Bushenyi/Mbarara highways. In addition, most of the places are covered by the satellite telecommunication network. The national electricity grid traverses the project area with the major towns/ town boards/ trading centres connected through step down transformers.

5.4.11 Gender Analysis

Kasese district has made significant strides to promote gender equality and to empower women. However, despite the efforts made by the district to promote gender equality and empower women, some glaring gender gaps remain. Some of include the following:

Women's participation in decision-making at some levels is still low. Although women are responsible for over 80% of the agricultural production in the district, they own less than 7% of all productive land on which this production takes place.

The level of illiteracy among adult females in the district is high (39.6%) as compared to that of adult males (23%); in the project area, the corresponding illiteracy levels were 43.9% and 25.4% which are higher than the district average (UBOS, 2014). This has a significant impact on male and female engagement in a number of socio-economic services in the district. With these levels, it means women shall be marginalised in decision making fora.

6 PROJECT NEED AND ANALYSIS OF ALTERNATIVES

6.1 Introduction

This Section evaluates available options to the proposed action, so as to arrive at the most environmentally friendly alternative, which maximizes economic, social and technical benefits resulting into minimal or insignificant environmental impacts. Abstraction of surface water and piped water supply system activities need proper and adequate management in terms of construction activities, occupation health and safety, solid waste management, water quality control, biodiversity management plans, socio-economic issues and re-alignment issues. During review of the engineering designs for the NWSS, the EIA team was actively involved. The environmental considerations were crucial in the process. The developer has further prepared an ESIA report which would be submitted and approved by NEMA and the funders.

6.2 **No Project Alternative**

Analysis of the "no project option" as an alternative provides an environmental baseline against which impacts of the proposed action can be compared. This alternative means that the project area will be left in its original state. The alternative ignores all positive impacts likely to be realized in Kasese District due to the proposed NWSSS like Income to material/ equipment suppliers, consultants and contractors; availability of skilled and unskilled job opportunities for residents, especially youths, in the project area during construction; improved quality and quantity of water supplied; reduced morbidity and increased productivity of households; and increased enrolment of children in educational institutions; better livelihood opportunities and induced development and employment opportunities. Besides, project development and operation will provide considerable economic opportunity for 177 material/ equipment suppliers, construction contractors and other project-relevant professionals. The challenges brought about by using unsafe water like spread of communicable diseases and moving longer distances especially by women and children to collect water from wells and springs will be lessened and Small-scale irrigation schemes development in the area.

This option implies that the existing situation prevails (status quo remains) i.e. no construction of NWSSS. This option is mostly applicable in situations where the proposed project area is in ecologically or socially sensitive areas and the negative impacts will be of significance and no proper mitigation measures can be formulated to eliminate or minimize the impacts to manageable or acceptable levels. NWSSS runs through less ecologically sensitive and no households will be displaced. The land will be secured by Kasese District Local Government in consultation with the different Sub-Counties specifically, the land for the intake points, reservoir tanks, sedimentation tank and for the water offices. The transmission lines will pass along road reserves and to some extent in people's croplands. However, a Resettlement Action Plan (RAP) has been conducted and the Project Affected Persons (PAPs) were identified and will be compensated where applicable.

The No Project Option is the least preferred option from both the socio-economic, health and partly environmental perspective because individuals, institutions and the business communities would be subjected to continuous access to unsafe and unreliable water sources and lack of access to sanitation systems. On this basis, the 'No Project Alternative' is rejected as option to be carried forward for the Project and project implementation option is maintained.

Alternative Water Sources 6.3

Selection of an intake (water source is a complex and lengthy process that involves the examination and balancing of a number of technical and environmental planning issues. One of the most important

factors considered here is the yield (amount of water that can sustain supply for a long/specific period of time). The analysis of alternative sites looks at other possible sites that could have suitably been used to implement the project. The alternative water sources were considered and have been discussed exhaustively in sections below.

6.3.1 Identification of Surface water sources

Identification of potential water sources to meet the demands of the target center should normally include spring, groundwater and surface water. However, the client indicated that surface water is the only option to be considered. The identification of surface water sources should not interfere with those streams to which water use is already licensed.

The options chosen after consulting a 50000 topographic map and field survey are shown hereunder:

| Sr. | River | Intake | Location | Catchment | Considered | | | |
|-----|---|----------|----------|----------------------|------------|--|--|--|
| Nr. | | Easting | Northing | Area Km ² | | | | |
| | | (meters) | (meters) | | | | | |
| 1 | Nyamugasani (upstream of HEP-1 Intake) | 824441 | 10018029 | 86.14 | No | | | |
| 2 | Nyamugasani (d/s HEP-1 Intake and U/s of WS intake) | 825833 | 10016593 | 4.7 | Yes | | | |
| 3 | Kabiri | 821775 | 10015416 | 5.16 | No | | | |
| 4 | Nyamuruseghe | 826548 | 10019466 | 9.06 | Yes | | | |

| Table 57: Surface Water Source Option | ns |
|---------------------------------------|----|
|---------------------------------------|----|

128 The map of locations of the proposed intakes is shown hereunder. The streams are perennial with limited low flow potential. The streams may be fed with springs to sustain dry season flows. The catchments are located in a forest where agricultural practices seem limited. Hence, there may not be any upstream abstraction.

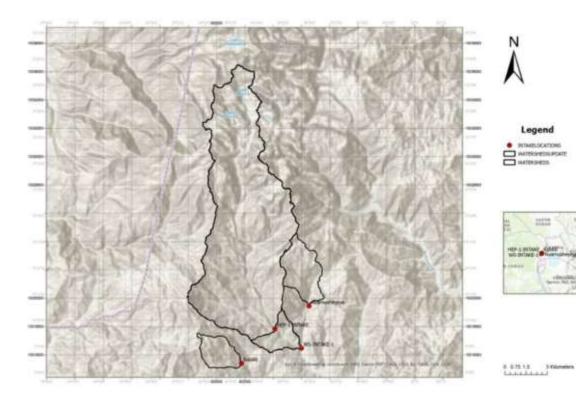


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-26: Location of Intakes and their catchments

a) River Nyamugasani (upstream of confluence with River Nyamuruseghe)

Nyamugasani river could be a reliable surface water source to meet the demands provided that the intake is located at a vantage site preferably in the upper reaches of the stream primarily for the static head available provided that a sufficient catchment area is available. The location of the intake is dictated by the fact that the water supply scheme should be entirely gravity-driven. Two micro-hydro power plants already exist on the Nyamugasani river at locations shown in the figure below. The current site is located downstream of HPP Intake-1 at the location identified during the field visit.

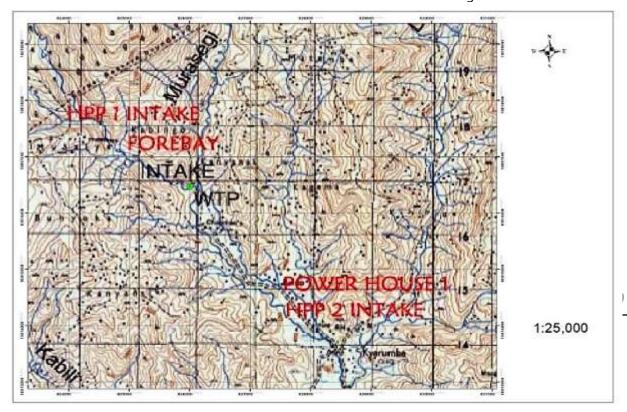


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-27: Locations of Existing HPP Intakes

b) River Nyamuruseghe (Muragesi)

A field visit was carried out to the Nyamuruseghe river. It is also locally called the Muragesi river. This river forms one of the options to be considered as a surface water source. No water user or permit is issued to the knowledge of the Client. The location of an intake on this river is dictated by the consideration that the proposed water supply system should be gravity driven. Hence, the intake site should be located high enough which result in a smaller watershed area resulting in a reduced dry season flow to cover the demand.

The catchment area of the upstream of the proposed Nyamugasani water supply intake point is estimated to be 9.06 km². The disadvantage of selecting this source as an option is its limited potential. It might cover part of the total demand for areas closer to the demand centre.

It was observed that the site is flood-prone. Moreover, based on a reconnaissance site visit, the team members think that the river is perennial. The client advised the team that DWRM should be contacted to carry out the spot discharge measurements at the proposed intake site along the river, if need be, during the dry season. This task was completed and the data relayed to the Water Resources Specialist.

The daily streamflow at the intake site is generated using the regionalization approach whereby the catchment area was used as the main predictor variable. Prior to this the estimated catchment area for Nyamugasani River at the station 84228 was 492 km².

The generated stream flows are then extended to the year 2045 assuming the historical series repeats itself. This is a sound assumption from supply-demand analysis point of view. The effect of climate change shall be introduced on annual volumes than on the daily streamflow series. The daily stream flow at the intake site available for abstraction. These flows are, for the time being, taken as naturalized flows until the current level of abstraction is fixed by the socio-economic survey. The average annual inflow at this site amounts to 3.34 MCM.

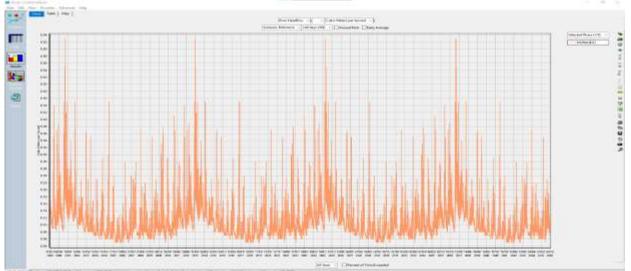


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-28: Synthetic Daily Flow of Nyamuruseqhe Flow, m³/s

Hence, the 1-day Q_{95} flow is estimated to be 3862 m³/day (upper limit estimate of 5091 m³/day and a lower of the estimate is 3501 m³/day).

c) River Kabiri

Kabiri river is one of the options considered. It is a tributary of the Nyamugasani river. It has a catchment area of 5.16 km² upstream of the proposed intake site. It might be a perennial river as the dry season flow is sustained by a higher water table or nearby springs. The stream may have limited potential to cover the estimated demand.

The daily streamflow at the intake site is generated using the regionalization approach whereby the catchment area was used as the main predictor variable. The generated stream flows are then extended to the year 2045 assuming the historical series repeats itself. This is a sound assumption from supply demand analysis point of view. Effect of climate change shall be introduced on annual volumes than on the daily streamflow series. The daily stream flow at the intake site available for abstraction. These flows are, for the time being, taken as naturalized flows until the current level of abstraction is fixed by the socio-economic survey. The average annual inflow at this site amounts to 1.90 MCM.

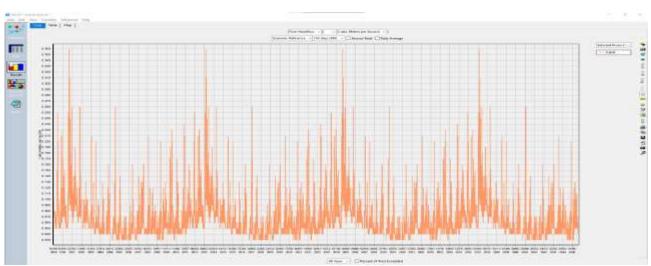


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-29: Synthetic Daily Flow of Kabiri Flow, m3/s

A preliminary estimate shows that the 1-day Q_{95} dry season flow of 2200 m³/day (with a lower limit of estimate at 1994 m³/day and an upper limit of estimate at 2900 m³/day).

7 STAKEHOLDER ENGAGEMENT

7.1 Introduction

Consultation with relevant stakeholders and regulatory institutions was carried out to ensure participation of relevant stakeholders, as recommended by the National Environment Act, No.5 of 2019, National Environment (Environment and Social Impact Assessment) Regulations (2020), and conduct of Environmental Practitioners (2001) and guidelines for EIAs in Uganda. The consultations aimed to identify and take note of environmental and social concerns and views of all the stakeholders at an early stage so that appropriate mitigations are incorporated in the final implementation plan for the proposed project.

Stakeholder meetings were held at Kasese District, Kyarumba Sub County and Kyondo Sub County. The consultation process ensured that their concerns were captured and have been addressed during ESIA. A wider intensive consultation process was carried out during the Environmental and Social Assessment.

Informal conversational interviews and observations were the key data collection methods applied. The consultation process ensured that their concerns were captured and addressed. A wider intensive consultation process was carried out during the Environmental and Social Assessment. In general, the majority of stakeholders supported the project and found it to be beneficial.

According to the household survey done during the RAP and ESIA (October-November 2022) indicate that the majority of households surveyed are very supportive of the Project at 95% whereas the remaining 5% of the households are somewhat in support of the Project. The very high support of the project implies that water is very much needed in the project and surrounding areas and that there will be minimal disturbances during the construction phase of the water pipelines. However, more sensitization is needed to bring the 5% to support the project so that there is full support for the project.

7.2 Stakeholder Consultations

The primary purpose of the stakeholders' consultations was to provide an overview of the project to the relevant agencies, stakeholders and all the communities where the Nyamugasani Water Supply System components are to be located and therefore impact on the communities. It further helps them to understand how the MWE and the project team will operate to the highest possible environmental, social, health and safety standards prior, during and after the construction of the Water Supply System related infrastructure.

The specific objectives of the Consultations were:

- i) obtain an understanding of the number and types of stakeholders in the socio-economic study area
- ii) To provide information about the project and to tap stakeholders' information on key environmental and social baseline information in the project area
- iii) To provide opportunities to stakeholders to discuss their views, opinions and concerns
- iv) To manage expectations and misconceptions regarding the project
- v) To discuss potential impacts and verify significant or major environmental, social and health impacts identified.
- vi) To inform the process of developing appropriate mitigation and management measures as well as institutional arrangements for effective implementation.
- vii) inform stakeholders about the engagement process and grievance management
- viii) provide a mechanism for ongoing stakeholder engagement and ways in which the

stakeholders can continue to participate in the stakeholder engagement process

ix) Ensure regulatory requirements and project standards are met.

Stakeholder consultations and Public participation during the ESIA process were conducted in line with the requirements of the National legislation and regulations. According to the National Environment (Environmental and Social Assessment) Regulations, 2020, Part III under section *"Procedure for Undertaking Scoping and Environmental and Social Impact Study"*, Sub-section 16; *"Stakeholder consultation during the environmental and social impact study"*, stakeholder consultation is crucial during the ESIA study.

7.3 Stakeholder Identification and Analysis

7.3.1 Stakeholder Identification

A stakeholder may be defined as 'any individual or group who is potentially affected by the project or can themselves affect the project. To develop an effective stakeholder involvement programme, it is necessary to determine exactly who the stakeholders are based on their roles, influence, objectives and priorities specific to the project. The ESIA team formulated a stakeholder matrix and identified key stakeholders who were engaged during the study. A stakeholder engagement plan was drafted and populated with additional stakeholders during the ESIA study. The study targeted individuals, groups/institutions and communities that have a stake in the priority water project. Thus, only such entities as identified in the stakeholder analysis were selected to participate in the consultation process.

When identifying and prioritizing stakeholders, the following aspects were considered:

- Who could be adversely affected by environmental and social impacts?
- Who are the most vulnerable among the potentially impacted, and are special engagement efforts necessary?
- Which stakeholders can best assist with the early scoping of concerns and impacts?
- Who strongly supports or opposes the changes that the project will bring and why?
- Who is it critical to engage with first, and why?

7.3.2 Stakeholder Analysis

The stakeholder categories and sub categories identified are presented in Table 55 below.

| Category | Stakeholder | Description and key attributes |
|--------------------------------|--|---|
| Funder | World Bank | To ensure that the Banks Operational Safeguards have been observed and implemented as appropriate. Support the project with funding Support Project Implementation |
| National Level Stakeholders | Ministry of Lands Housing and Urban Development (MoLHUD) | Approves all reports presented by the consultant regarding valuation |
| | Ministry of Gender, Labour and Social Development (MoGLSD) | Protection of human rights and vulnerable social groups. Occupational and community health and safety of roads. Approval and monitoring of the social safeguards Approval of permits like workplace permits, OHS |

Table 58: Stakeholder Matrix

| | Ministry of Water and Environment (MWE) | Overall mandate to monitor, assess and regulate water resource Monitor and guide the use of wetlands for sustainability and other water bodies within the project areas Approval of the Water abstraction permits The implementer/Developer of the Project |
|------------------------|---|---|
| | NEMA | Overseeing and monitoring the project activities Regulation of the environmental aspects of the project(s). |
| | | Legally mandated to coordinate management of the environment Provide the necessary permits and approvals for quarries, borrow pits and |
| | | other auxiliary sites Work closely with the project team to handle all matters related to environmental protection |
| | | Overall clearance of ESIA and other project briefs about the project facilities. Monitor and supervise the ESIAs compliance |
| Local Governments | Kasese District Local Government | Mobilize various stakeholders including the communities/beneficiaries Monitoring and supervision support for the implementation of the projects. Offer security to the project team (RDCs Office) Review the ESIA and give comments |
| | Sub Counties (| (Environment Office) Make decisions that may affect the project, Offer support and supervision of the project Help in the identification of the location of the water and sanitation facilities. |
| | Local Council Ones (LCIs) | Mobilize communities Offer support in the planning, implementation and operation of the project Offer support in the identification of the |
| | | locations of the water and sanitation facilities Monitoring of the projects Provide social justice to vulnerable |
| | | communities Incorporate information about the project in their teachings, gatherings/meetings for acceptance especially regarding water and hygiene-related information. |
| Different Community | Traders, landlords, tenants, business people, affected | Develop construction (works) schedules in their respective areas. |

| groups | persons (Landowners who offered land for the water facilities' installation) | Participate in the scheduled meeting regarding the project activities and progress Identify mitigation measures of the environmental and social issues |
|--------|--|---|
| | | Monitor the progress of the project activities |
| | | Input in the planning and identification of water and sanitation facilities. |

7.3.3 Formal Meeting with the Stakeholders

The project had an inception workshop where all the stakeholders were invited as a start meeting to inform all the stakeholders about the project. MWE organized the meeting to inform all stakeholders about the project, its objective, the intended activities, the project extent, and the related studies to be undertaken, including the RAP and ESIA, water-related studies, source of water among others. The main object was to solicit, potential impacts and possible mitigation measures and also solicit initial community responses. The stakeholders were able to express comments and queries during these meetings as seen in the minutes under annex 2.



Plate 24: Stakeholder meeting held at Kasese District, and introduction of the Consultant by MWE



Plate 25: Consultants engaging the DNRO of Kasese DLG



Plate 26: Community Consultations with the Local Communities at Kyarumba Health Centre III



Plate 27: Group photo with the Local Communities after Consultations at Kyarumba HCIII

7.3.4 Key informant interviews

Key informant interviews (KIIs) were held with individuals who were assumed to have specific information related to the project. Some of these were pre-set while others were identified during the interactions with other stakeholders. Some of such stakeholders included; The LCV Chairperson's office of, the Kasese District Engineers office, the Office of Public Health, CDO, Environmentalist among others.

7.3.5 Community Meetings

Communities were sensitized about the project to ensure the participation and active involvement of the local community members in the baseline survey and subsequent water interventions. Mobilization of the communities was done through the chairpersons of the respective villages. Both women and men attended these meetings and a number of issues were raised. All the community meetings were conducted in local and understandable language.



Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-30: Community meeting at Kisinga Sub County

7.3.6 Feedback from the Stakeholder Consultations

In relation to the project, the main findings from the engagements and public participation were largely categorized into two parts; the envisaged impacts (Both negative and positive) and general concerns on the project. The main findings from the engagements are presented below; For example, according the local leaders and community members, the establishment of the water scheme is expected to have the following benefits:

- Improved access to clean and safe water
- Improved health conditions due to access to safe clean water
- Employment during construction and operation of the water scheme
- Eradication of poverty and improved livelihoods of the local people
- Reduced expenditure on water and medical bills due to diseases
- Reduced time spent walking long distances to wells and Springs
- Reduction of child mortality
- Ensure environmental sustainability

However, some concerns were raised as regards to the project and these include:

- Poor waste management practices at construction sites
- Destruction of existing vegetation especially when establishing the intake
- Soil erosion due to loss of vegetation
- Land degradation,
- Dust and vehicle emissions,
- Increase in noise and injuries on duty,
- Increased spread of communicable disease,
- Visual impacts, Issues of land use and destruction of peoples crops along distribution lines.

However, there were issues that cut across during the community consultation meetings and these are:

- Signing of the Compensation Data Capture Forms by the PAPs Signing such forms does not relinquish one's rights to land and improvements. It only depicts that such PAP was present during the data collection and affirms all that is recorded on such form.
- Property to be assessed Land, structures (or improvements) and Perennial crops will be assessed. However, the project designs were developed in such a way that there is no physical displacement of PAPs.
- Payment of compensation awards whether in cash or at bank accounts This varies with the magnitude of the compensation awards. However, bank accounts are preferred for safety and easier accountability.

 Connection to water for households far away from the built system - Upon completion of the water system, households will be encouraged to apply to the operator for water connection and water pipes will be extended.

Stakeholder engagements will continue throughout the implementation and operational stage with different stakeholders. It is likely that more relevant agencies and stakeholders will be identified during these phases, and will be engaged accordingly.

Many of the comments captured from stakeholders presented views on the expected benefits and concerns on the adverse impacts the proposed project may have on the environment and the existing activities. A summary of key environmental and social issues and recommendations raised by stakeholders are presented in the Table 56 below.

| | SN POSITION COMMENTS | | | RESPONSE |
|-----|----------------------|-------------|--|---|
| | 311 1. | Team leader | | |
| | 1. | - AWMZ | Invest for much in storage because the water fluctuates during the dry season. | The proposed water supply system has a number of storage facilities |
| | | | water nuctuates during the dry season. | a number of storage facilities (Reservoirs) and all these aim at water |
| | | | | storage purposes |
| | 2 | District | Water should be pushed into hard-to- | All the proposed supply areas are hard |
| 4 | 2 | Water | reach areas like Kikulunga and areas | to reach with a number of settlements |
| | | Officer | where the storage tank will be. | to reach with a number of settlements |
| | | Onicei | Muwete village has a lot of settlements, | |
| | | | make sure the water reaches there. | |
| | 3. | CAO | One village in Nyakatonzi Parish was | There will be room for legal extensions |
| | | | removed from the design plans, people | and connections by the Operator. The |
| 138 | | | may illegally make extensions from the | design clearly indicates areas where the |
| 100 | | | system citing some corruption | water will be able to reach and these |
| | | | | will be supplied |
| 4 | 4. | DNRO | Minimize the land take | A RAP study has been conducted and |
| | | | | clearly shows how much land is needed |
| | | | Vegetation destruction should be | for the project plus the PAPs. |
| | | | minimized, identify endemic species for | |
| | | | protection and the plants destroyed | An ESMP will be prepared as part of the |
| | | | during construction should be planted | ESIA to guide the different |
| | | | somewhere else | implementing teams especially the |
| | | | | contractor on the good practices |
| | | | Ensure there are no Alien Species | during the construction |
| | | | carried to the area during the | |
| | | | transportation of materials | |
| | | | Construction should not tamper/disturb | |
| | | | with the Faunal habitats – take stock of | |
| | | | the different animals | |
| | | | | |
| | | | Ensure increase in construction activity | |
| | | | does not disturb the breeding and | |
| | | | habitats of faunal species especially the | |
| | | | birds. | |
| | | | | |
| | | | Designate a place where soil dug from | |
| | | | the canal will be spread and plant | |
| | | | vegetation on it to minimize soil | |

Table 59: A summary of key environmental and social issues raised by stakeholders

| r | Т | | | - |
|---|---|---|--|-----|
| | | erosion | | |
| | | Take care of the rocks around the abstraction points because it may have effect on the lichens and other micro living organisms | | |
| | | Local people should be used in the construction of the project both the skilled, semi -skilled and unskilled. | During the construction phase of this project, this will be considered. | |
| | | Public tap stands should be put along the areas not covered in the design where the lines are passing. | This is catered for in the design for the project. | |
| | | Emphasize proper waste management, the contractor should have a plan for oil waste, solid waste and sewage. | The ESMP will cater for proper waste management, safety at work, first aid, VAC, GBV, HIV/AIDS and pollution among others. | |
| | | Safety should be a priority; emphasize the use of PPE while doing any kind of work. | | |
| | | First aid kit should at the site Install signage i.e., heavy trucks turning around the construction sites to reduce accidents | | 139 |
| | | The contractor should ensure the safety of girls and women from the Sexually Transmitted Diseases from contractor's workers | | |
| | | The contractor should not employ child labour on the site; emphasize use of national IDs | | |
| | | Gender concerns should be emphasized | | |
| | | Dust and noise should be minimized specific hours of the day and when the contractor is going to blast stone, should inform the community in advance. | | |
| | | Emphasise the CMP for the watershed, Eucalyptus trees should be eliminated near/along the riverbanks | | |
| | | The PAPs should be taken care of | | |
| | | Should have a detailed ESMP at the site | | |
| I | | i | ۱ | - L |

| | | | |
|-----|---|--|--|
| | | GRM Committee at the community level | |
| | | There should be involvement of the local leadership and the community so that the project is owned | |
| | | Water abstraction guidelines should be revised as much as possible. | |
| | | The project should involve Corporate Social Responsibility. | |
| | Discussion and Reactions from the Local Community Members | Is the water for free or It will be paid for? | The water will be paid for because of the operational costs that go into ensuring it's safe for consumption. Therefore the district leaders, MWE, sub county leaders and the operator will sit and determine per unit cost of water. |
| 140 | | Will people be compensated for the pipes passing in their land? | Compensation will be done according to garden crops or property destroyed during construction. A RAP report has been prepared which will guide the compensation procedures, |
| 140 | | Expects jobs to be given to the locals | The law states that; 75% of laborers be obtained from the local community unless they are not there. The contractor will get laborers both skilled and unskilled from within the project area. |
| | | We have heard about this project for over 5 years now, is it going to take off this time. And you told us people will be given jobs will they volunteer or they will be paid?. | You're right, the idea of this project was developed in 2016 but in the designs only Nyamugasani river was considered and it was noted that it didn't have enough water for the project. So, it had to be re-designed the reason it took long to be implemented. World bank has the money and ready to implement the project as soon as possible but it can only do that when NEMA has given clearance |
| | | | The contractor is supposed to workers and promptly and workers should ask for letters of engagements. The only volunteering is meant for Water Source Protection Committee |
| | | | |

| Requests the project management/contractor to give scholarship to the children in the Sub County | The contractor will be on site for about one and a half years and he will handle over to the operator, so at this moment we cannot assure you of that. |
|--|--|
| Like electricity, people at the source are not benefiting, aren't you going to do the same? | As you have heard the project is going to cover over 17 sub counties and several households will get water |
| There was a project here, the workers were imported from far and impregnated our girls and left, what is our fate in this project? | Sensitization will be done and it actually what we are doing, and any girls or women who will entangle with the workers will already know the risks involved |
| We have trees where the water pipeline is going to pass and these trees will be cut, is there any programme/plan for supply tree seedling into the community? | We encourage tree planting and it's going to be one of interventions we are going to propose By law, the local leaders to the mandate to know what is taking place in their |
| What are the roles of the leaders in this project, we want to know our position? | area, to monitor and inspect all government projects. Several stakeholder engagements will be carried out at all levels to ensure the leaders and all people are aware of their rolesIt will probably start next after NEMA has done the approvals |
| This project was proposed long time ago, we thought we had come to tell us its commencing soon Some organization come and do not construct necessary facilities like toilets for their workers and find them going to the neighbor's toilets | The contractor will first construct all the necessary facilities before commencing the project construction workers |

All the stakeholders consulted supported the project on the basis that it would induce development in their area/district and lead to the establishment of more related projects. However, it was mentioned that the developer should be able mitigate all project related negative impacts such as waste generation, noise, destruction of crops during trench digging and pipe installations and any other negative impact as would be realized.

7.4 Public Disclosure and Consultation Plan

Public Consultation and Disclosure (PCDP) is a key element in the engagement and essential for collective involvement of stakeholders in the proposed development. Disclosure refers to the

provision of relevant and adequate project information to enable stakeholders understand risks, impacts and opportunities of the project. Consultation is an inclusive and appropriate process that provides stakeholders with opportunities to express their views which should be considered, responded to and incorporated into the decision-making process. For purposes of this study done, the ESIA report will be disclosed on the Ministry of Water and Environment's websites and in the NEMA Library for anyone who would be interested in accessing it.

The proposed project is within the jurisdiction of Kasese District Local Government headed by a Local Council V (LCV) Chairman and Chief Administration Officer (CAO) who is the political head and technical head respectively. Various district offices whose functions would be relevant to the project include offices of Natural Resources/Environment, District Health Inspector, District Planner, Community Development Officer, District Health Officer, District Water Officer and District Engineer. Equally important are village-level local council administration (LC I and LC III). Leaders at these levels of local administration are closer to residents and therefore important in effective community mobilization, sensitization and dispute resolution given that the proposed project is going to benefit communities.

Like stakeholder identification, public consultations and information disclosure is a continuous process throughout the ESIA exercise. KIIs and FGDs were utilized for PCDP. A scoping exercise was undertaken on September 2022, and then the consultative meetings on 9th and 10th November 2022 at both Kyarumba and Kyondo sub counties and were aimed at disclosing key project information (such as changes in the water source etc.) and to generate a master list of Stakeholders to be consulted. Key stakeholder concerns were also identified so that they could be considered in the implementation of the project. Key issues identified are outlined in Table 47 above.

Grievance Redress Mechanism (GRM) as a key element of the PCDP to actively identify, manage and follow up grievances received to ensure that appropriate resolutions and actions are taken by relevant authorities especially MWE, Kasese District Local Government and Kyarumba and Kyondo Sub Counties.

In order to ensure transparency and accountability, a GRM shall be established by the Project Support Team in line with the guidance provided in the ESMF. The GRM shall have a clear set of goals and objectives and a well-defined scope for its interventions, especially geographical area coverage to ensure its accessibility and effectiveness. A set of procedures for receiving, recording, and handling complaints shall be available in the GRM. This will be managed by a National Grievance Redress Committee (GRC) consisting of a MWE Chair, the IWMDP Project Coordinator, the assigned Resettlement Social Development Specialist, the Project's Environmental Focal Point, the chair of the community mediation board, a member of a recognized non-government organization, and a community leader. The GRC members shall be qualified, experienced, and competent personnel who can win the respect and confidence of the affected communities.

GRCs shall also be established at District and Lower Local Government Levels as appropriate. Sub county GRC will comprise; (Sub county Chief, LCIII chairperson, CDO, Environment focal person, representatives for women, Youth, PAP and PWD, Village LCI) whereas the District GRC will have; CAO, RDC, LCV chairperson, District Water Office, District Environment officer, DCDO, Chairperson land board, DPC, DISO, PAP and MWE representatives. For easy accessibility, GRCs shall also be formed at or closer to project implementation site at Kasese District. Grievances shall be first reported and handled at the lowest level or project site, and referred to the next level if not resolved. The GRM shall include procedures for:

- Recording, registering, and sorting grievances;
- Conducting an initial assessment of grievances;
- Referring grievances to appropriate units or persons;
- Determining the resolution process;

- Making decisions, including parameters and standards for accurate and consistent decision making;
- Directing relevant agencies responsible for implementing decisions;
- Notifying complainants and other affected parties of eligibility, the resolution process, and outcomes;
- Tracking, monitoring, documentation, and evaluation; and
- A Grievance Log, that shall summarize all grievances registered, resolution reached, and feedback provided.

Depending on the nature and the severity of the complaint/s, the GRC in consultation with the Project Affected Persons (PAPs) or Complainant, shall identify and decide on an approach for grievance resolution. Where appropriate, complainants shall be given the choice of selecting an affordable approach with which they are comfortable and confident and that is beneficial to them. For construction-related complaints, it will be the Contractor's responsibility to address them. Usually these kinds of complaints are described as environmental and social impacts and include issues related to dust, flooding, blasting (noise, vibration, and evacuation), lost access, and dangers to life, damage caused to public roads from heavy machinery, deteriorating water quality and quantity, damage to property and crops, soil erosion, workers misbehaviour, defilement/child abuse, and others.

8 ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS

8.1 Introduction

Key potential environmental and social impacts of the project for each stage of the project cycle are assessed in this chapter and an Environmental and Social Management Plan (ESMP) is provided in the Chapter 9. The ESMP seeks to translate mitigation measures into actions. Prediction and analysis of possible positive and negative impacts of construction of the water treatment plant and intake works at both River Nyamugasani and Nyamuruseghe in Kyondo and Kyarumba sub counties are discussed. Impact analysis involved determination of nature of impact, its magnitude, extent, duration of potential impacts. For the proposed development, potential positive and negative impacts were identified both for the construction phase and operation phases. Throughout this report, impacts have been characterized as:

- a) "Positive" when they;
 - Enhance socio-economic welfare e.g. health, employment,
 - Enhance quality of existing environment.
- b) "Negative" when they;
 - Reduce socio-economic welfare of people,
 - Reduce quality of existing environment,
 - Reduce economic value e.g. of surrounding property.

An improvement in potable water supplies and sanitation may generate interrelated improvements in 144 health, economic and social welfare of the community. However, in addition to the many possible beneficial impacts, adverse impacts may arise from these improvements. The impact of potable water supply and sanitation on health depends on the quality and quantity of the piped water supply; the proportion of population covered; and the utilization of the water and sanitation facilities by the population. In this chapter, prediction and analysis of possible positive and negative impacts of construction and operation of the water extraction and treatment system, water reservoir and establishment of transmission lines is presented, with main focus on the proposed construction of the water treatment plant and intake works at both River Nyamugasani and Nyamuruseghe. Table 58 below provides a summary of the Positive benefits that will be realised as a result of implementation of this project.

| No. | Impact | Remarks | |
|-----|---------------------------|---|--|
| | Increased access to clean | Elimination of current water shortages. | |
| 1. | water | Improvement of water quality. | |
| | | Reduce the time spent and distance travelled to fetch water, | |
| | | which would signify an improvement in the general living | |
| | | conditions of the people. | |
| | | Improvements in public and household sanitation. | |
| | | Awareness of personal hygiene. | |
| | | Overall improved health conditions for the benefici population. | |
| | | Income generating activities for the poor will increase as | |
| | | result of availability of reliable supply of water in public places | |
| | | e.g. commercial water service providers. | |
| | Employment | The use of appropriate labour intensive methods for some of | |
| 2. | opportunities and | the construction activities (e.g. construction of the intake | |
| | increased household | point and Reservoir and sanitary facilities) would present | |

| Table 60:Positive | Imnacts | of the | Propose | d Project |
|-------------------|----------|--------|---------|-----------|
| | inipucis | of the | riopose | urrojeci |

| | incomes and revenues | employment opportunities for local people and generate direct income benefits to local households. Some people will be employed in the digging of the transmission and distribution network, sand and stone quarries, and sale of earth materials to the proposed project and in the service sector around the project site. |
|----|---|--|
| 3. | Income to material/ equipment suppliers and contractors | Earth materials needed for construction, for example, aggregate (stones and sand) will be obtained from quarry operations. Number of equipment and materials (such as gravel, bricks, plumber, steel reinforcement and cement for civil works) will be sourced locally within the district and the neighbouring districts. |
| 4. | Increased Public Revenue / Taxes | People who have never worked on such projects would acquire such skills, which they would use to seek employment in future. The Project would provide grassroots management opportunities for the local people to both be involved in the management of the water supply and protect their local environment. |
| 5. | Boost to the local Economy | Provision for direct employment opportunities to the workforce thus contributing towards alleviation of poverty and income generation for the local community; Stimulation of business activities related to contracting works for local entrepreneurs (sub-contractors); Providing trading opportunities for local communities and other small enterprises in the area; 145 Providing opportunities for provision of basic and other services for the contractors and immediate community. The project will consider employment of locals. |
| 6. | Gender Benefits | The expected reduction in water collection distances and times will be particularly beneficial to women and children, especially girls, who bear the burden of fetching water and have to walk long distances or queue for long periods. It will mean more opportunities for girls to attend schools and more time for women to engage in other economically and educational beneficial activities. |
| 7. | Health Benefits | Direct health benefits of the project to the affected population will result in a reduction in the incidence of water-related diseases particularly diarrhoea, typhoid, intestinal worms, skin and eye problems, and dysentery and cholera. Loss of productivity resulting from sickness related to water-borne diseases and expenditure on related medical care will therefore reduce. |
| 8. | Improved service delivery | The proposed project would result in bringing improved water and sanitation services closer to the people. |
| 9. | Eradication of poverty and improved livelihoods of the local people | The proposed project would result in an increase in the volume of water for production which could result in improved livelihoods of the local people and the refugees. Water is indispensable for survival and improving the quality of life – for health (drinking, eating and bathing) and for economic development (agro-processing and business). The project would, therefore increase productive activities through |

| | | reduced sick days and time saved in fetching water. |
|-----|---|--|
| 10. | Combat HIV/AIDS, malaria, typhoid, and other diseases | The awareness campaigns for public health, hygiene and sanitation particularly targeted at women and girls would be widened to include measures for tackling HIV/AIDS and other diseases such as schistosomiasis and diseases related to excreta contaminated water and poor hygiene (cholera, typhoid, and diarrhoeal diseases). |
| 11. | Ensure environmental sustainability | Implementation of catchment and water source protection measures would ensure reliability to the water source. |
| 12. | Develop a global partnership for development | The Project would provide opportunities for the GoU and the different Implementing Agencies (IAs) to work together to achieve the sustainable development goals (SDG) specifically SDG 6. |
| 13. | Increase in investment in the area standard of living | MWE will invest heavily in the construction of the water supply systems which would involve use of locally available materials. The business community could take advantage of the proposed development to establish businesses that would otherwise be impossible without safe piped water. |

8.2 Anticipated Potential Benefits

8.2.1 Positive Impacts during Construction Phase

146 The anticipated positive impacts of the construction phase for the proposed water supply system may be permanent but majority of the environmental impacts attributed to construction works are temporary in nature, lasting mainly during the construction phase or quite often little beyond the construction period. However, if these issues are not properly addressed, the impacts (positive or negative) may continue even after the construction phase for longer duration.

a) Employment opportunities

The design, feasibility and planning phase provided financial benefit and employment for both local and International consultants. This is a positive but short-term and reversible socio-economic impact. Contract provisions for the construction works require most of the labour force (at least 50%) to be drawn from the local population with particular emphasis on youth and women. Since construction is estimated to take a certain number of months, this phase will provide short-term job opportunities for local people. The project is estimated to employ around 120 workers during the construction phase.

Furthermore, indirect opportunities for employment will be stimulated in the other sectors related to construction, such as manufacturers of local raw materials and finished products and providers of services. It is also anticipated that indirect employment opportunities will be created within local communities through the provision of services to the construction teams, such as the sale of food and beverages.

Enhancement measures

The contractor should involve local leaders in recruitment process to ensure full and fair participation of local communities. Wherever feasible, local people should be considered for job opportunities commensurate with their level of skills. Adequate occupational health and safety standards should be provided to ensure the work environment is conducive.

b) Income to material/ equipment suppliers and contractors

The scale of construction works is moderate in the proposed project area. Although some of the equipment and materials required for the project will be sourced nationally or even internationally to ensure quality is achieved, a number of equipment and materials (such as gravel, bricks, plumber, steel reinforcement and cement for civil works) can be sourced locally within Kasese district and the neighbouring districts. Local suppliers of materials and equipment involved in the project will benefit financially. This is a positive but short-term and reversible impact.

Enhancement measures

Earth materials needed for construction, for example, aggregate (stones and sand) will be obtained from quarry operations. Conscious or unwitting purchase of these materials from unlicensed operations indirectly promotes environmental degradation at illegal quarry sites and can cause medium to long-term negative impacts. It should therefore be a contractual obligation for contractors to procure construction materials from quarries legitimately licensed by the respective district authorities.

c) Acquisition/improvement of skills

People who have never worked on such projects would acquire such skills, which they would use to seek employment in future, and as a benefit from the capacity building incorporated in the program, the implementing authorities would have adequate capacity for managing the environmental and social assessment and permitting processes. The Project would provide grassroots management opportunities for the local people to both be involved in the management of the water supply and protect their local environment.

Enhancement measures

- The Local leaders will play a vital role in screening and recommending those seeking for employment to weed out wrong elements who may instead cause serious setbacks to the project in terms of offering labour both skilled and unskilled.
- A training programme for artisans (builders, plumbers) in the project area could be facilitated by the project to ensure skills transfer during the construction period.

d) Increased Public Revenue / Taxes

The implementation of the project will increase revenue and taxes for both the central and local authorities. This includes indirect taxes resulting from the construction project such as Value Added Tax (VAT) on materials and services, Pay As You Earn (PAYE) for construction workers and other formally employed persons who will form by far the majority of created employment opportunities) as well as revenue to pension funds such as National Social Security Fund (NSSF).

Enhancement measures

- Register all the workers with NSSF and remit all their benefits in accordance with the law.
- Remit all the workers' PAYE to Uganda Revenue Authority in accordance with the country's laws

e) Impacts on Local Capacity

The scale of the construction of the project with the logistics involved and speeds of construction that will be required, while maintaining construction, health and safety standards will involve considerable management and planning skills and will contribute to capacity building within the country's engineering and construction sector. Co-operation between international suppliers of specialized

equipment and contractors and local contractors and sub-contractors and companies will result in the transfer of skills and will also build additional local capacity.

f) Boost to the Local Economy

The workforce will get most of their food and other necessities from the surrounding area and this will provide a market for the local agricultural producers, and craft producers and other small businesses (local shops). This will in turn increase the incomes of the local people, which can be invested in other (productive) activities and be used for paying school fees, medical expenses and other domestic needs. The project will stimulate local economic activities by:

- Provision for direct employment opportunities to the workforce thus contributing towards alleviation of poverty and income generation for the local community;
- Stimulation of business activities related to contracting works for local entrepreneurs (subcontractors);
- Providing trading opportunities for local communities and other small enterprises in the area;
- Providing opportunities for provision of basic and other services for the contractors and immediate community. The project will consider employment of locals.

g) Capacity Building

It is expected that for the construction of the proposed water supply system, some degree of capacity building will be provided (organised and un-organised) through the transfer of new technologies and new skills to (un-skilled) labour. This will happen through on-the-job training as well as through exposure to modern water quality practices, management and logistics procedures. Local subcontractors and companies will also benefit from the transfer of skills and will also build additional 148 local capacity.

Enhancement measures

To maximise capacity building for local communities, programs and technical training courses as well as on-the- job training will be provided in specific skills areas for suitable candidates from local communities to enhance minimum levels of education and the possibility of being employed during operational phase.

8.2.2 Positive Impacts during Operational Phase

a) Improved health status of households in the project communities

The provision of an adequate, safe water supply and sanitation facilities has positive impacts on the health of users by greatly reducing the incidence of communicable enteric and infectious related diseases, which, in many instances occur in communities due to lack of adequate sanitation and potable water supply. Both potable water supplies as well as safe disposal of human excreta are needed to break the chain of transmission of diseases. Changes in water supply may affect different groups of disease in different ways; one group may depend on changes in water quality, another on water quantity and availability and another on indirect effects of standing water which is related to sanitation. Therefore, improvement in water supply in several of the poor informal settlements will directly contribute to improved public health in the proposed project area.

Enhancement measure

Educate users on the proper use, regular cleaning and effective maintenance of both the household and public facilities.

b) Educational enrolment and attendance

Construction and Operation of the proposed water system will lead to considerably increased and consistent access to safe water for the proposed project communities. In relation to increased provision of potable water supply, time savings are the most immediate and easily measured benefits although its magnitude will depend on the conditions prevailing before constructing the piped water supply. Consequently, time spent on searching and waiting for water by women and children will be saved. This will enable children, especially the girl child to regularly and promptly attend school, while mothers will get more time to prepare their children for school. Assuming other factors are available (such a scholastic material, teachers) school attendance and performance will improve.

c) Acquisition of new skills

Most water supply and sanitation projects are built through the labour of local residents who are directed by a small cadre of sub-professional or supervisory personnel from outside the community. Community participation can also have a great impact on the effectiveness and sustainability of water supply and sanitation programs. It can also help to minimize many of the potential negative environmental impacts associated with them.

Enhancement measure

 Where the required skills are available locally, the local people should be given first priority commensurate to their level of training.

d) Improvement in household economic status

The increased provision of potable water supply and sanitation has positive beneficial impact on health and ultimately directly and indirectly on productive and economic benefits.

- Livestock and poultry keeping: Improved water supply would lead to an increase in poultry and livestock keeping in homesteads. A permanent water source near or on the farm will permit an increase in cattle and improve the production of milk and beef. Those farmers who previously felt water to be a crucial constraint preventing them from keeping such livestock as grade cows and pigs, poultry like chicken or expanding their activities in this regard, may find it feasible to do so.
- Small scale gardens: The increased provision of piped potable water supply may have positive beneficial impact on the irrigation of small scale gardens if there is excess water available and it can be used for irrigation of small scale garden plots near each household or tap. This will have positive beneficial impacts on increasing agricultural productivity and perhaps also improving nutrition status of households. Furthermore, there is a possible increase in agricultural productivity due to use of sludge as manure that will be generated during the water treatment process.
- Small scale industries: The ample availability of piped potable water supply may lead to improvements in the small scale industrial development and increased production.

Enhancement measure

 Water supply should be set taking into consideration the different levels of users. The users should also be educated to avoid wasteful use of the resources.

e) Employment opportunities

Operation of the constructed water supply system will create additional long-term technical and non-technical job opportunities for professionals, casual labourers, etc. Staffing will be required in the area to operate the constructed water supply system by: Operating the system in accordance with the service standards; Maintaining the system; Developing the system; Billing the consumers; Collecting revenue; Receiving applications for and making new connections; Making extensions to the system or assets; Attending to all customers; Keeping records of the operations of the system;

and Writing status reports for the operations of the system.

Enhancement measure

Wherever feasible, local qualified people will be considered for job opportunities. Adequate
occupational health and safety standards should be provided to ensure the work environment
is conducive.

f) Promotion of gender equality and empowerment of women and the girl child

The proposed project would free women and girls of the burden of having to spend a lot of their time collecting and carrying water almost on a daily basis often from sources distant from their houses. This reduction in burden would allow women and girls time for other activities including involvement in economic ventures that could contribute to reducing poverty and furthering their education (thus increasing school enrolment).

g) Attainment of the Sustainable Development Goals; SDGs

The effect of providing safe water and hygienic sanitation services would contribute to the attainment of all other Sustainable Development Goals (infant mortality, poverty reduction, improved health and increased school enrolment rate).

h) Increase in investment in the area

Through the MWE investing heavily in the construction of the proposed water system which would involve use of locally available materials, the business community will take advantage of the proposed development to establish businesses that would otherwise be impossible without piped water.

150 i) Environmental sustainability

The skill for managing water supply and sanitation facilities would result in building social capital which could be extended to better manage the local environment and water resources. The project would include environmental awareness which could be deployed to manage the environment better.

j) Combat water and hygiene related diseases

The Project would result in prevention of vector borne diseases related to water sources (such as guinea worms, Onchocerciasis, and schistosomiasis) and diseases related to excreta contaminated water and poor hygiene (cholera, typhoid, and diarrhoeal diseases) due to the increased provision of safe and clean water. Safe drinking water, personal/household hygiene and improved sanitation would reduce infant/child morbidity and mortality; improve their nutritional status and their ability to perform better in schools. The marginal price of improved hygiene and sanitation promotion would make them cost effective health interventions.

8.3 Anticipated Negative Impacts

8.3.1 Negative Impacts during Construction

a) Soil Degradation

The laying of water pipeline from the water treatment plant and associated facilities will result in direct disturbance of soil. Site preparation will involve clearing of strips of vegetation to allow for excavations to begin. Soils excavated may be heaped besides the trenches hence exposed to agents of erosion such as wind and storm water. Prolonged storage of topsoil can also lead to a loss in fertility of the soil as nutrients become leached out by rainfall. This process can lead to

impaired vegetation growth once the soil is reinstated. In addition, prolonged topsoil storage can lead to the loss in viability of the seed bank contained within this soil. Also, equipment engaged in activities might cause light contaminations of soil due to leakage of fuels and lubricants from equipment. Topsoil stripping during levelling and grading of the right of way (ROW) and the excavation of subsoil during trenching will break up the soil structure. Depending on the nature of the soil, this may lead to a temporary increase in erosion.

Impact significance: These are short term and direct impacts. Given that similar activities have already taken place and considering the project footprint, receptor **sensitivity** is assessed to be **low**. The impact **intensity** is **medium** given that MWE will employ a well-qualified contractor to carry out the construction activities of the project, the duration of exposure of stockpiles being short and also that areas to be impacted will not be used for agriculture giving rise to **minor** impact significance.

| | | Sens | sitivity of receptor | r | |
|-----------|------------|------------|----------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low 1 | 1 | 2 | 3 | 4 |
| ť | - | Negligible | Minor | Minor | Minor |
| impact | Low | 2 | 4 | 6 | 8 |
| Ē | 2 | Minor | Minor | Moderate | Moderate |
| e e | Medium | 3 | 6 | 9 | 12 |
| Intensity | 3 | Minor | Moderate | Moderate | Major |
| | High | 4 | 8 | 12 | 16 |
| nt Int | 4 | Minor | Moderate | Major | Major |

Mitigation strategies:

- Topsoil and subsoil will be stockpiled for re-use in backfilling and reinstatement;
- To preserve soil structure: there will be minimum handling of soils; loose tipping of soils, that is, without compaction will employed and temporary spoil heaps will not be higher than 3m;
- Contractor will avoid use of old equipment or even damaged equipment that is most likely to have oil leakages thus contaminate the soils;
- The contractor will be required to develop a waste management plan prior to start of construction activities;
- Contractor will ensure that equipment is properly maintained and fully functional in accordance with the manufacturer's recommendations;
- During reinstatement, the trench back-fill material will be compacted to a level similar to the original surrounding soils to avoid subsidence as a consequence of rain water channeling.
- Recreation of a stable landform that mirrors the pre-disturbed condition as this will minimise the risk of preferential erosion and therefore facilitate natural re-vegetation.
- Topsoil will be protected through separation from subsoil and storage in a manner that, as far as possible, retains the soil structure and minimises the risk of topsoil loss. The trench will be subsequently backfilled with subsoil, followed by topsoil. In order to prevent loss of fertility and degradation of the seed bank within stored topsoil (where present), the topsoil will be stored for as short a time as possible, allowing for engineering constraints.
- In the re-establishment of the pre-construction condition, vegetation cover particularly the variety and distribution pattern of plant species that existed before will be used.
- Wherever practical, the subsoil will be graded during reinstatement to reflect the original profile across the working width and all other construction areas. In steep areas with highly erodible soils, the ground will be carefully profiled to ensure that the integrity of the pipeline is not compromised.
- Upon completion of subsoil and topsoil reinstatement, disturbed areas will be inspected

jointly by the construction contractor and MWE personnel for slope stability, relief, topographic diversity, acceptable surface water drainage capabilities, and compaction.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of negligible significance.

b) Generation of Noise

Due to the nature of the construction process, noise levels will fluctuate in line with the combination of machinery or equipment being used at any one time. Noise and vibrations will mainly result from use of equipment like excavators and including bulldozers, graders and dump trucks during site preparation and construction activities. However, noise levels will also vary depending on time and distance as the construction spread progresses along the pipeline route thus the local residents will not, therefore, be continually exposed to the noise levels for extended periods.

Construction traffic associated with the pipeline construction will be routed via main roads and along the ROW as far as is possible. Some minor roads will have to be used for access to the pipeline spread itself and some new access roads will be created.

The increase in traffic movements on minor roads may cause a noticeable increase in daytime noise levels through small villages; this effect will be localised and temporary, and will, for the most part, be restricted to the construction phase of the project. A number of roads will require repair prior to use for construction vehicle access. These repairs will help to reduce noise levels generated by such access, and other vehicular movements. however, the impact is assessed to be much lower than the construction site limit of 85 dB (A) including the receptor sensitivity.

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Impact significance: Due to the intermittent and short-term nature of the activities, the **intensity** of impact is assessed as **low** and **sensitivity** of the receptors as **medium**, given that most of the proposed routes for the water pipelines are located in relatively noisy mixed residential and commercial areas of the project area and its neighbourhood. This results into **moderate** impact significance.

| | | Sensitivity of receptor | | | |
|---------------------|------------|-------------------------|----------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| Intensity of impact | Very low 1 | 1 | 2 | 3 | 4 |
| | | Negligible | Minor | Minor | Minor |
| | Low 2 | 2 | 4 | 6 | 8 |
| | | Minor | Minor | Moderate | Moderate |
| | Medium 3 | 3 | 6 | 9 | 12 |
| | | Minor | Moderate | Moderate | Major |
| | High | 4 | 8 | 12 | 16 |
| Int | 4 | Minor | Moderate | Major | Major |

Mitigation strategies:

- Contractor will be required to be careful when selecting the working equipment as per the specifications to avoid use of old equipment or damaged equipment with high level of noise emissions that would have a negative impact in the environment.
- Contractor will ensure that equipment is properly maintained and fully functional in accordance with the manufacturer's recommendations.
- The Contractor must provide PPE/ear muffs to workers in areas where levels exceed

recommended threshold (85dBA).

- Regular maintenance, monitoring and, where necessary, the use of silencing equipment will be employed with the aim of reducing noise emissions.
- The selected contractor will be required to submit detailed information on the noise levels which will be generated by the specific methods and equipment proposed and to identify actions required to minimise the noise impact.
- Pumps, generators and other mobile equipment will be sited as far as practicable from housing and other noise sensitive locations, work will not be carried out Sunday during service time or hours.
- During periods of inactivity, equipment will be switched off whenever possible. A limited number of construction activities may have to continue on a 24-hour basis. These include horizontal direction drilling, pipeline cleaning and hydrostatic pressure testing which are relatively low noise activities.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

c) Improper Management of Construction Waste

Solid waste and spoil will be generated at the site during site preparation and construction phases. The waste may consist of timber or metal cuttings, excavated materials, paper/cement bags and solvent containers among others. Some of the waste materials such as cement, adhesives and cleaning solvents contain hazardous substances, while some of the waste materials including metal cuttings and plastic containers are not biodegradable and can have long-term and cumulative effects on the environment. Other wastes which will be generated by non-construction activities because of the presence of the workers at the site include food remains, contaminated water from washing, cleaning equipment, construction tools and vehicles.

Impact significance: Extent of this impact will be local to areas where waste is dumped or their immediate neighbourhoods. The impact *intensity* is assigned *medium* due to the lack of a well streamlined waste management system in Kasese. The *sensitivity* of receptors is assessed as *'medium'* given that similar activities have and are taking place in the area and that an experienced contractor will be hired. This gives rise to **moderate** impact significance.

| | | Sen | Sensitivity of receptor | | | | | |
|--------------|------------|------------|-------------------------|----------|----------|--|--|--|
| | | Very low | Low | Medium | High | | | |
| | | 1 | 2 | 3 | 4 | | | |
| | Very low 1 | 1 | 2 | 3 | 4 | | | |
| ť | - | Negligible | Minor | Minor | Minor | | | |
| impact | Low | 2 | 4 | 6 | 8 | | | |
| <u>.</u> | 2 | Minor | Minor | Moderate | Moderate | | | |
| of | Medium | 3 | 6 | 9 | 12 | | | |
| ity | 3 | Minor | Moderate | Moderate | Major | | | |
| Intensity of | High | 4 | 8 | 12 | 16 | | | |
| Int | 4 | Minor | Moderate | Major | Major | | | |

Mitigation strategies:

- The wastes will be properly segregated and separated to encourage recycling of some useful waste materials, that is, some excavated material can be used as backfills.
- The contractor and MWE will work hand in hand with the District to facilitate sound waste handling and disposal from the site. All wastes must be taken to the approved dumpsites and proof of safe disposal should be secured.
- Hazardous wastes such as paints, cement, adhesives will be managed through a third party

contractor certified by NEMA to handle hazardous waste. The contractor and MWE should work hand in hand to facilitate sound waste handling and disposal from the site.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

d) Contamination of Water Resources

There is a potential for pollution from chemical contaminants at all stages of the project. Spillage of fuel, lubrication oil or wastewater is potentially important at the watercourse crossings, pump station, and block valves during construction and testing. Contaminants introduced by construction could migrate into key receptors such as Rivers Nyamugsani and Nyamuruseghe. Activities associated with construction have the potential to produce groundwater and surface water contamination. The principal potential contaminants associated with the construction activities are as follows: Fuels and lubricating oils, Domestic wastes, welding wastes and field welding and coating materials, Paints and solvents, Hydro testing chemicals if used (e.g. biocides, oxygen scavengers and corrosion inhibitors).

Removal of vegetation whose root systems bind the soil may increase the rate of erosion by water or wind in the area. During heavy rainfall, the loss of the moisture retaining function of the vegetation may lead to increased surface run-off, carrying with it eroded soil particles into the Nyamuqsani and Nyamuruseghe Rivers. During construction, there may be need to stockpile assorted materials on site. There is a potential pollution risk if construction materials are not stored or handled responsibly such as to lead to stockpiles wash away. The fuels (mainly diesel) and lubricating oils required by the construction equipment have the potential to contaminate nearby water resources (Nyamugsani and Nyamuruseghe Rivers) if they leak or are spilled during handling or use. Transportation of pollutants with runoff would affect the water quality hence the 154 communities/ livestock depending on it. General wastes may have the same effect if not handled properly.

Impact significance: The gently sloping terrain makes soil erosion and sedimentation likely impacts. The *sensitivity* of the receptor is *medium* because of the Nyamugsani and Nyamuruseghe Rivers close to the site and various agricultural activities (crop cultivation and livestock grazing and watering directly) at the in-take point. The *intensity* of the impact is assessed as *medium*. Given the size of Nyamugasani and Nyamuruseghe Rivers, intensive sedimentation would have far reaching effects in addition to its flooding nature during the rainy season but the activities taking place in its catchment already largely contribute to the sediment transport. This results in moderate impact significance.

| | | Sens | Sensitivity of receptor | | | | | |
|--------------|------------|------------|-------------------------|----------|----------|--|--|--|
| | | Very low | Low | Medium | High | | | |
| | | 1 | 2 | 3 | 4 | | | |
| | Very low 1 | 1 | 2 | 3 | 4 | | | |
| ಕ | - | Negligible | Minor | Minor | Minor | | | |
| impact | Low | 2 | 4 | 6 | 8 | | | |
| in in | 2 | Minor | Minor | Moderate | Moderate | | | |
| of | Medium | 3 | 6 | 9 | 12 | | | |
| ity | 3 | Minor | Moderate | Moderate | Major | | | |
| Intensity of | High | 4 | 8 | 12 | 16 | | | |
| Int | 4 | Minor | Moderate | Major | Major | | | |

Mitigation strategies:

The contractor will have a contractual obligation to develop and implement a Construction ESMP

to include the following guidelines:

- Equipment, materials and chemicals must not be stored within 30 m of a watercourse bank;
- Construct a proper drainage system around the site and to the final storm water retention or disposal point to stop direct run off into the nearby land and water courses;
- All construction equipment will be kept in good operating condition to avoid oil or fuel leakages that might contaminate water resources;
- Materials like sand and aggregates will be kept in bounded areas to avoid being washed away into water resources by runoff;
- MWE will ensure the contractor complies with its environmental management policies e.g. the National Environment (Wetlands, River Banks and Lakeshore management regulations, 2000).
- MWE will ensure the Contractor has a Spill Management Plan and adheres to it. Annex 6 outlines the procedures of spill management
- River crossing points have already been determined through pipeline routing surveys to ensure that the crossing points minimise the impact on sensitive hydrological and ecological features. This includes adequate design controls to minimise the impact on the hydraulic regime of the rivers. The contractor will put in place temporary crossings to minimise the impact.
- Any cleaning and hydro test water which could cause contamination of surface (or ground) waters will be tested and treated as necessary prior to discharge, including debris and sediment removal.
- Washing will not be done along the working area but will be restricted to workers' camps and on paved areas to control runoff;
- The pipeline construction activities at certain river crossings, in particular the Nyamugsani and Nyamuruseghe Rivers, will reflect their highly seasonal flow regimes. Wherever possible, construction of the pipeline crossings will be undertaken during periods of low flow.

Adoption of the above mitigation measures will reduce impact intensity to "low" resulting in a residual impact of moderate significance.

e) Air Pollution

The most significant issues that could potentially impact on air quality and climate during construction are combustion gas emissions and nuisance dust. During the construction phase there will be an increase in road traffic associated with material and equipment haulage. The principal sources of combustion gases are the exhausts of vehicles and construction equipment, power generation at the work camps and pipe storage yards and waste incineration. Dust will be generated as a result of vehicle movements and typical construction activities (e.g. stripping, compacting and trenching etc.).

Construction activities and vehicle movements can cause dust agitation in addition to that already caused by the wind. It is likely that this will be exacerbated as a result of clearance of the ROW. Once airborne, dust will generally travel downwind before resettling. The distance travelled depends primarily on wind speed and particle size. For example, smaller particles and strong winds result in greater dilution effects but mean that the dust is deposited over a larger area. Dust may cause nuisance on a local scale in certain areas along the pipeline due to the nature of the fine clayey, silty and sandy soils that are present. The potential impacts are nuisance to people in the area, coverage of crops (possibly leading to reduced yields) and deposition on natural vegetation and small animals, including bees.

Although emissions of carbon dioxide (CO_2) and methane (CH_4) are generally accepted as contributing to global warming the effect has not been quantified. To reduce the threat of global warming it is widely agreed that emissions of greenhouse gases need to be reduced on a global

scale. Each individual greenhouse gas has a different potential effect on climate per unit released. Global Warming Potential (GWP) provides a means of equating the potential contribution to global warming arising from different process units/activities which can generate different emissions. GWP is measured in terms of equivalent emissions of CO_2 ; hence the GWP factor of CO_2 is 1. CH_4 has a GWP factor of 21 over 100 years –that is, an emission of 1 kg of methane (CH_4) is defined as having 21 times the GWP of an emission of 1 kg of CO_2 . Construction vehicles/activities are unlikely to contribute significantly to greenhouse gas emissions due to their relatively small scale, intermittence and temporary nature, and as such are not considered further in this assessment.

The long-term impact of nuisance dust will decline as stripped areas of land re-vegetate. Due to the temporary nature of construction, dust emissions are not anticipated to have a long-term impact on local air quality. The above impacts would mostly be linear and spatial in extent limited to road routes. They would therefore affect roadside communities, communities neighbouring the proposed site and road users. The manageability of the impact is high since typical impacts are well understood in conventional infrastructure construction industry and the ability to adapt to the impact is high because construction activities have been going on in the area.

Impact significance: Due to the intermittent and short-term nature of the activities, the **intensity** of impact is assessed as **low** and **sensitivity** of the receptors as **low** resulting in **minor** impact significance.

| | | Sensitivity of receptor | | | | | |
|-----------|----------|-------------------------|----------|----------|----------|--|--|
| | | Very low | Low | Medium | High | | |
| | | 1 | 2 | 3 | 4 | | |
| | Very low | 1 | 2 | 3 | 4 | | |
| t | 1 | Negligible | Minor | Minor | Minor | | |
| impact | Low | 2 | 4 | 6 | 8 | | |
| | 2 | Minor | Minor | Moderate | Moderate | | |
| ę | Medium | 3 | 6 | 9 | 12 | | |
| ity | 3 | Minor | Moderate | Moderate | Major | | |
| Intensity | High | 4 | 8 | 12 | 16 | | |
| Int | 4 | Minor | Moderate | Major | Major | | |

Mitigation strategies:

- Travel speeds of construction vehicles along the road especially at trading/ business centres will be controlled using humps and travel speeds will not exceed 30km/h;
- Trucks will be covered during haulage of construction materials to reduce on spillage of materials;
- Wherever dust suppression is necessary, water will be sprayed over dusty areas;
- It will be ensured that all equipment leaving the site, clean up their tires in case they are dirty;
- Construction work will be undertaken by an experienced and duly registered contractor with a verifiable sense of environmental awareness and responsibility;
- Workers will be provided with PPE (dust masks, safety googles) and the use of PPE shall be enforced;
- All construction equipment and trucks will be kept in good operating condition by regular servicing to reduce noise and exhaust emissions; and
- As part of the bidding processes, contractors will be required to provide their environment management plans that meet mitigation actions proposed in this ESIA.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

f) Occupational Health and Safety Risks for the Workforce

Construction traffic, excavation machinery, blasting of rocks and trenches may pose accident risk to workers either when equipment is operated by inexperienced workers or when in a poor mechanical condition or falls into the trenches. Inadequate Occupational Health and Safety (OHS) could also result from insufficient medical capability at the construction site; or neglect of safety equipment, precautions and procedures.

Impact significance: Accidents could cause considerable ecological damage due to pollution, financial loss and harm to human life. While largely reversible, some impacts such as loss of human life are irreversible. The receptor **sensitivity** is considered **high** given that such impacts may be irreversible once they occur. The impact **intensity** is considered to be **Medium** since MWE will procure a qualified contractor who is aware of OHS measures. Nevertheless, this gives rise to an impact of **Major** significance.

| | | Sens | | | |
|-----------|----------|------------|----------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low | 1 | 2 | 3 | 4 |
| t | 1 | Negligible | Minor | Minor | Minor |
| impact | Low | 2 | 4 | 6 | 8 |
| <u>.</u> | 2 | Minor | Minor | Moderate | Moderate |
| of | Medium | 3 | 6 | 9 | 12 |
| sity | 3 | Minor | Moderate | Moderate | Major |
| Intensity | High | 4 | 8 | 12 | 16 |
| Int | 4 | Minor | Moderate | Major | Major |

Mitigation strategies:

- All construction workers will be oriented on safe work practices and guidelines and ensure that they adhere to them.
- Training will be conducted on how to prevent and manage incidences. This should involve proper handling of electricity, water etc. and sensitization on various modes of escape, conduct and responsibility during such incidences. All must fully be aware and mentally prepared for potential emergency.
- Quarterly drills will constantly be undertaken or conducted. This will test the response of the involved stakeholders. Such drills will keep them alert and they will become more responsive in the case of incidences.
- Signage will be used to warn staff and/ or visitors that are not involved in construction activities of dangerous places.
- Personnel will only undertake tasks for which they are trained/ qualified. A formal 'permit to work' system will be in place and strict instructions will be given for operators of equipment.
- Supervision of works will be done quarterly to ensure that safety conditions are met while any deviation from safety regulations is immediately reclaimed following the best practices regarding safety at work equipment.
- Communication line shall be ensured in between workers and drivers of heavy equipment.
- Evacuation procedures will be developed by the contractor to handle emergency situations.
- Daily Toolbox morning talks will be conducted to inform all workers of the anticipated risks from the day's work.
- Adequate OHS personnel protective gear will be provided for the employees. The guide below should be useful:
 - *Hearing* (Over 85 dB(A) for 8 hours a day requires hearing protection)
 - Ear Muffs: One size fits all, comfortable, less ear infection risk
 - Ear Plugs: Small, lightweight, can get dirty and cause infection
 - *Face/Eye* (Working with any chemical or using any mechanical equipment)

| • | Face Shield: Protect face from splashing and particles |
|------------------|--|
| • | Safety Glasses: Protection from solids (cutting, sanding, grinding) |
| • | Safety Goggles: Protects eyes from splashing |
| Hand (Use | correct gloves for the job) |
| • | Chemical Gloves: (Nitrile, Latex, PVC) |
| • | Gloves for other use: special gloves for cutting, burning, abrasions/ blisters |
| Body | |
| • | Overalls: Can protect against dust, vapours, splashes |
| Foot Prote | ction |
| - | If electrical hazard present, ensure boots offer protection |
| - | Safety Toe/Steel Toe Boots: Always worn when potential for falling hazards |
| | exists |
| - | Water/Chemical Resistant Boots: Use in a spill situation |
| - | Non-slip boots for working on wet/slippery floors. |

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

g) Risk of Accidents

The water pipelines will have to be laid across existing roads that are used by motorist and cyclists in addition to pedestrians. The trenches created for the pipe crossing can lead to accidents if proper signage is not put in place. Construction traffic accidents would be a significant social impact and likely to affect public members like children, women, disabled, elderly people and livestock, etc. The duration of the risk will be short-term occurring only during the construction phase. Although some effects of the accidents (e.g. minor injuries) may be reversible, some, for 158 example, loss of human life are irreversible.

Impact significance: The receptor sensitivity is **medium** given the number of pedestrians and commercial activities along the roads while the intensity is *medium* given the temporary nature of the construction activities, however, some of the impacts may be irreversible. The impact significance is thus assessed to be *Moderate*.

| | | Sens | Sensitivity of receptor | | | | | |
|---------------------|----------|------------|-------------------------|----------|----------|--|--|--|
| | | Very low | Low | Medium | High | | | |
| | | 1 | 2 | 3 | 4 | | | |
| | Very low | 1 | 2 | 3 | 4 | | | |
| t | 1 | Negligible | Minor | Minor | Minor | | | |
| ba | Low | 2 | 4 | 6 | 8 | | | |
| i. | 2 | Minor | Minor | Moderate | Moderate | | | |
| of | Medium | 3 | 6 | 9 | 12 | | | |
| sity | 3 | Minor | Moderate | Moderate | Major | | | |
| Intensity of impact | High | 4 | 8 | 12 | 16 | | | |
| Int | 4 | Minor | Moderate | Major | Major | | | |

Mitigation strategies:

- Transport safety practices will be adopted with the goal of preventing traffic accidents and minimizing injuries suffered by project personnel and the public by: employing safe traffic control measures, including road signs and flagmen/traffic guides to warn of dangerous conditions and children crossings; and setting speed limits on all access roads in the project area will be 30km/h for light vehicles and 20km/h for heavy vehicles.
- Service ducts installed by the road contractor will be used where applicable to avoid cutting

through roads that have just been upgraded.

- All workers, including sub-contractors and casual labour, will undergo an environmental, health and safety induction before commencing work on site. This will include a full briefing on site safety and rules.
- The affected communities will be informed of the timing and duration of the construction activities across access roads and any uncertainties or potential for change and also sensitised on the dangers of construction sites and the need to keep away (community sensitisation).
- Identifying optimum routes from pipe storage areas to the ROW to avoid sensitive receptors such as schools and hospitals, wherever possible and putting in place journey management plans.
- Restrictions on hours of driving (including night time restrictions where sensitive receptors may be affected) and timing of vehicle movements to avoid busy periods in urban areas, particularly the start and end of school and the working day
- Control over routes used by vehicles to avoid construction traffic using inappropriate roads and other road users gaining access to the pipeline spread and access roads.
- Ensuring adequate vehicle maintenance to ensure that vehicles do not produce significant emissions and that all safety features including brakes, lights etc. are in good condition.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

h) Risk of labour influx resulting into risks such as GBV, SEA and VAC

Influx of labor into the project area imports all kinds of people and this may put women and children at risk of abuse. Project implementation may create changes in the communities in which they operate and cause shifts in power dynamics between community members and project workers within households. Male jealousy, a key driver of GBV, can be triggered by labor influx on a project when workers are believed to be interacting with community women with the fear that it could exacerbate the risk of family breakdown. Population rise also poses a risk of sexual harassment cases if the project workers are not cautioned to stay in line. Violence against children may be as a result of contractors' source for local cheaper labor end up employing children below 18 years which is illegal as per the Ugandan laws.

Within the project community, women who may gain employment through the project, gender stereotyping may affect their self-esteem and performance and may prefer to stay out of employment not because they lack skills but due to gender harassment. For men, high disposable income increases the predisposition to extramarital affairs, completely abandoning their families and resulting in single mothers within the project area. Some husbands reportedly become unruly and abuse their wives because they feel they can access any woman of their choice.

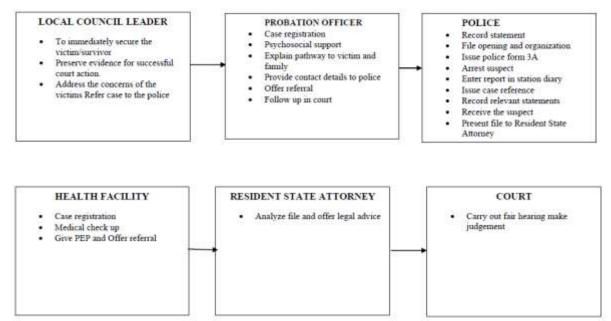
Impact significance: The **intensity** of impact is assessed as **Medium** and **sensitivity** of the receptors as **Medium** given that there will be a few vehicles at the beginning of the project and the community will get used as the number increases in addition to the fact that the road network is being improved on. Therefore, significance of the impact is **Moderate**.

| | | Sensitivity of receptor | | | | |
|-------|------------|-------------------------|----------|----------|----------|--|
| | | Very low | Low | Medium | High | |
| | | 1 | 2 | 3 | 4 | |
| | Very low 1 | 1 | 2 | 3 | 4 | |
| | | Negligible | Minor | Minor | Minor | |
| | Low 2 | 2 | 4 | 6 | 8 | |
| | | Minor | Minor | Moderate | Moderate | |
| | Medium 3 | 3 | 6 | 9 | 12 | |
| mbact | 2 | Minor | Moderate | Moderate | Major | |
| 2 | High | 4 | 8 | 12 | 16 | |
| 2. | | | | | | |

| 4 | Minor | Moderate | Major | Major |
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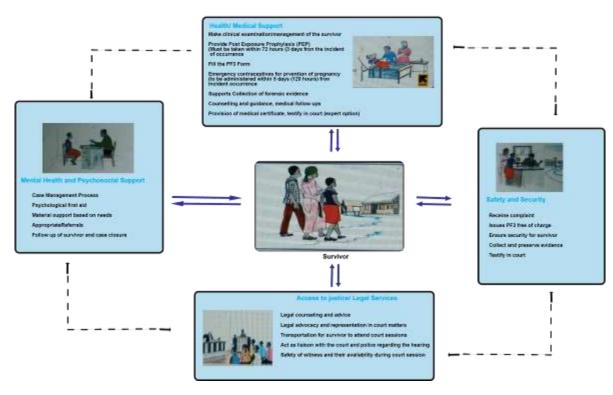
Mitigation strategies

- The contractor will implement the worker's code of conduct (attached to the GBV Action Plan) as stipulated in the worker's employment contract.
- All workers will be oriented and sensitized about sexual behaviors that are likely to happen within the proposed project area.
- Ensure adequate referral mechanisms are in place if a case of GBV at the community level is reported related to project implementation.
- The Contractor should have a "No sexual harassment" policy and mainstream it to ensure strict adherence to established mechanisms to avoid the emergence of these challenges.
- Recruit a Social Development Officer/ Sociologist to ensure compliance with Gender and equity requirements under the contract
- Sensitization to both contractors and communities on gender-related issues for example, during construction, gender-sensitive messages should be adopted (examples include "Go Slow, Road Works in Progress" as opposed to "Men at Work"
- Workplace environment including tools and fixtures should be gender friendly.



VAC PATHWAY as recommended by MGLSD

GENDER BASED VIOLENCE (GBV) REFERRAL PATHWAY



GBV and **SEA** Pathway

i) Landscape, Land Use Impacts and Loss of Structures

The aspects of the project that will impact on the landscape of the area are the temporary use of land for construction (right of way (ROW), roads, construction camps and pipe yards) and the permanent adoption of land for the pump station, block valves and access roads, etc. During construction, the ROW and the temporary facilities will be visible from the time of vegetation or topsoil removal until reinstatement is complete and vegetation has re-established fully. This will inevitably have visual impact in the area that is surrounded mainly by subsistence farming activities.

Based on the RAP, the Nyamugasani Water Supply and Sanitation Project will require a permanent land take of 5.7416 **acres and an Easement corridor of** 65.7112 **acres**. The construction contractor may require land for construction of lay down areas, and camps during the construction phase. In addition, unintended damage to crops and structures may occur.

Furthermore, a corollary livelihood impact resulting from the loss of household land is the loss of crops and fruit trees planted on that land thus changes in land use. There are also impacts related to loss of timber trees and woodland areas. The Project will impact 7,205 banana clumps at various stages of maturity. The Project land take will result in the loss of 236 fruit trees, 23.73% of which are avocado, followed by passion fruits of 21.61%, mangoes of 17.37% and jackfruit of 14.41%. The Project will impact 3,844 timber-productive trees, most of which (68.00%) are eucalyptus followed by Kiko (Gilikiti) of 10.30%.

The Project will not impact any residential structure except for 2 auxiliary structures, 4 agricultural structures, 3 commercial structures, and 152 other structures and fixtures. The asset survey indicates that these structures are within the 3 metres of the easement corridor. However, the PAPs have sufficient land remaining outside the easement corridor to enable them to replace their affected structure on their existing plot but outside the easement corridor. The schools and places of worship will only have land, crops and fences affected. Note that no classrooms or buildings

related to education will be impacted. The Project Permanent Land Restrictions (Easement for Transmission and Distribution Pipes) and Permanent Land Acquisition will affect Kyarumba Health Centre III and PHC Kyarumba Health Centre III properties. Only small portions of land will be affected and the permanent land acquisition will be for the construction of the sanitation facilities

Impact significance: Duration of the impact will be long-term and the extent of the impact will be local. The *intensity* of the impact is *low* given that the kind of the proposed water supply system, blends well with the environment. *Sensitivity* of the receptor is rated *high* given that no such system has ever been established in the area and its neighbourhood. Therefore, significance of the impact is *moderate*.

| | | Sens | Sensitivity of receptor | | | | | |
|-----------|----------|------------|-------------------------|----------|----------|--|--|--|
| | | Very low | Low | Medium | High | | | |
| | | 1 | 2 | 3 | 4 | | | |
| | Very low | 1 | 2 | 3 | 4 | | | |
| t | 1 | Negligible | Minor | Minor | Minor | | | |
| impact | Low | 2 | 4 | 6 | 8 | | | |
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| ity | 3 | Minor | Moderate | Moderate | Major | | | |
| Intensity | High | 4 | 8 | 12 | 16 | | | |
| Int | 4 | Minor | Moderate | Major | Major | | | |

Mitigation strategies:

- The contractor will be required by MWE to develop and implement a Reinstatement Plan.
- MWE shall ensure that this land and any impacted assets are compensated for in accordance with the provisions of this RAP.
- Upon payment of cash compensations, PAHs will be given sufficient time to salvage building materials from any lost structures.
- Reinstatement of the water pipeline will be done in such a way as return the visual integrity of the landscape as closely as possible to its previous condition.
- In areas where grading of the working width impacts on the local topography, reinstatement
 will be undertaken in a manner which is generally sympathetic to the existing contours.
 However, at locations along the route where extensive grading will be required to provide a
 level working area, it may not be possible to return the topography to its pre-existing form as
 this may exacerbate erosion risks given the type of soils in these areas and would preclude
 access to the sewer line for inspection, maintenance or emergency response.
- Wherever possible the removal of existing mature trees will be avoided, provided that the integrity of the pipeline is not jeopardised. Thus trees to be retained will be marked prior to commencement of works in the relevant sections of the network.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

j) Social Misdemeanour by Construction Workers

While most workers may originate from the local community where they have families, there might be others from distant places and working away from their families. With some disposable income to spend, this might induce illicit sexual relationships/ Sexual Exploitation and Abuse (SEA), with attendant risk for spread of HIV/AIDS. Irresponsible sexual relationships in project communities can break families and heighten risk of contracting HIV/AIDS. Illicit sexual relationships can be shortterm but have long-term and irreversible effects. SEA represent grave breaches of the right to

safety, security and dignity of persons of concern. MWE is committed to taking all necessary action to prevent, mitigate the risks of and respond to sexual misconduct and to put the protection, rights and dignity of victims at the forefront, in line with the policy on a Victim-Centered Approach in MWE's response to sexual misconduct. The Code of Conduct for Contractors has to be signed by contractor upon award of contract and copies displayed for workers to view. It ought to be translated into predominant local language of the workforce.

Impact significance: Duration of the impact will be short-term or long-term depending on whether HIV/AIDS is contracted and the extent of the impact will be local or national depending on origin of construction workers. The *intensity* of the impact is *very low* given the small size of the project and

other similar construction activities like for roads are already taking place in the area. **Sensitivity** of the receptor is rated **high** given that some of the outcomes have a long-term effect. Therefore, significance of the impact is **minor**.

| | | Sen | Sensitivity of receptor | | | | | |
|------------|----------|------------|-------------------------|----------|----------|--|--|--|
| | | Very low | Very low Low | | High | | | |
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| | Very low | 1 | 2 | 3 | 4 | | | |
| ಕ | 1 | Negligible | Minor | Minor | Minor | | | |
| impact | Low | 2 | 4 | 6 | 8 | | | |
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| Intensity | High | 4 | 8 | 12 | 16 | | | |
| <u>T</u> | 4 | Minor | Moderate | Major | Major | | | |

Mitigation strategies:

- As a contractual obligation, contractors shall be required to have an HIV/AIDS policy and a framework (responsible staff, action plan, etc.) to implement during project execution.
- A sensitisation programme for the would-be affected local communities will be conducted prior to commencement of and during the project implementation.
- A code of conduct (appropriate to behaviours in workplace and with respect to relations with local community) will be developed and approved by MWE which will be signed by all workers on the project.
- Local workers will preferentially be employed, paid directly through their banks and access to bars by workers from outside the project area in the local communities controlled.
- All construction workers shall be orientated and sensitized about responsible sexual behaviour in project communities.
- Ensure that communities and construction workers are aware of their rights, services and where / how to access them, and that sexual exploitation is not tolerated.
- Ensure that effective, safe, and accessible community-based complaints mechanisms are in place to report any suspicions of SEA.
- Conduct training and awareness raising on SEA among the construction workers by the Contractor such as ensuring that engagement in sexual exploitation and abuse is reported immediately and or any suspicion of sexual exploitation or abuse.
- Strengthen outreach to communities and community-based feedback mechanisms to facilitate and improve SEA reporting and community engagement.
- Ensure that victims of SEA have access immediately to the assistance and support that they require in line with a victim-centred approach.

k) Loss of Land and displacement of economic activities

Overall, the proposed project in Kasese will cause minor resettlement impacts and these are related to those earning a living or residing in places where permanent land take will be required for the reservoirs, and pumping stations. There are some permanent structures, land, as well as economic activities, that will be disrupted, especially at the intake, transmission route and reservoir areas.

Impact significance: Duration of the impact will be long-term and the extent of the impact will be local. The **intensity** of the impact is **low** given that the kind of the proposed water supply system, blends well with the environment. **Sensitivity** of the receptor is rated **high** given that no such system has ever been established in the area and its neighbourhood. Therefore, significance of the impact is **moderate**.

| | | Sen | Sensitivity of receptor | | | | | |
|-----------|----------|------------|-------------------------|----------|----------|--|--|--|
| | | Very low | Low | Medium | High | | | |
| | | 1 | 2 | 3 | 4 | | | |
| | Very low | 1 | 2 | 3 | 4 | | | |
| t | 1 | Negligible | Minor | Minor | Minor | | | |
| impact | Low | 2 | 4 | 6 | 8 | | | |
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| of | Medium | 3 | 6 | 9 | 12 | | | |
| ity | 3 | Minor | Moderate | Moderate | Major | | | |
| Intensity | High | 4 | 8 | 12 | 16 | | | |
| Int | 4 | Minor | Moderate | Major | Major | | | |

Mitigation Measures

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• Ensure timely and appropriate compensation

- Take into consideration local community and household preferences. For instance, the landowner is willing to relocate part of his house and underground tank and he is supported by local leaders.
- PAPs should be given financial literacy on how to use their compensation packages.
- In-kind compensation can be considered especially for institutional landowners.
- LGs should be involved in mobilisation and sensitizing PAPs.

The RAP guides that compensation for assets should be at full replacement value which includes:

- **Agricultural Land:** The market value of land of equal productive use or potential -- which must be located in the vicinity of the affected land -- plus the cost of preparation to levels similar to or better than those of the affected land plus the cost of any registration and transfer taxes
- **Residential and Urban Land:** The market value of land of equal size and use, with similar or improved public infrastructure facilities and services -- preferably located in the vicinity of the affected land -- plus the cost of any registration and transfer taxes
- **Perennial Crops and Trees:** Equivalent to current market prices given the type, age, and productive value of the plants and/or trees, including lost future productivity
- **Household and Public Structures:** The cost of purchasing or building a new structure with an area and quality similar to or better than those of the affected structure, or the cost of repairing a partially affected structure, including labour and contractor fees and any registration and transfer taxes.

In determining replacement costs, neither asset depreciation nor the value of salvage materials are taken into account.

I) Conflicts due to influx of immigrant labour and delayed payments

The project will attract immigrant labour into the project area. Like any other project with mass recruitments, the behaviour of workers on and off site will include the use of abusive and vulgar language, destruction of property, lack of respect to the locals, engagement in sexual relations with underage girls and married women. This is a potential source of conflict between immigrant labour and resident community. Furthermore, there is a potential risk of delayed payment of workers and suppliers.

Impact significance: The impact of conflicts because of influx of immigrant labour, though localized, temporary, readily reversible and noncumulative, can be immense in magnitude, thus the significance is moderate.

| | | Sensitivity of receptor | | | | | |
|-----------|----------|-------------------------|----------|----------|----------|--|--|
| | | Very low | Low | Medium | High | | |
| | | 1 | 2 | 3 | 4 | | |
| | Very low | 1 | 2 | 3 | 4 | | |
| t | 1 | Negligible | Minor | Minor | Minor | | |
| impact | Low | 2 | 4 | 6 | 8 | | |
| <u>.</u> | 2 | Minor | Minor | Moderate | Moderate | | |
| of | Medium | 3 | 6 | 9 | 12 | | |
| ity | 3 | Minor | Moderate | Moderate | Major | | |
| Intensity | High | 4 | 8 | 12 | 16 | | |
| Int | 4 | Minor | Moderate | Major | Major | | |

Mitigation Measures

- The Contractor should develop guidelines for behavioural conduct, including penalties for its workers.
- Workers must be sensitized on proper social behaviour and conduct with regard to community norms prior to starting work. Workers should be sensitized to avoid engaging in sexual relations with underage girls and married women. In case of misunderstandings between workers and the local community, local leadership should always be sought as a first priority in solving these issues. Similarly, in liaison with local leaders, the Contractor should prepare local communities – psychologically and otherwise – for the newcomers. The Contractor efforts should be focused on instilling attitudes of tolerance, support and understanding towards the local communities by the newcomers.
- MWE will ensure that the Contractors have provided agreements and or contracts to all workers and venders/suppliers. Furthermore, MWE will ensure that the Contractors are adhering to the provisions of these contracts specifically payment of workers and suppliers in time. If any delays are anticipated, the Contractor's in writing with clear dates when their payments would be effected should issue prior and adequate communication.

m) Risk of violence against children

Because of higher disposable income earned from being employed on the project, workers may engage in sexual acts with underage children particularly the gild child. This may result in early pregnancies. One of the major consequences arising from this would be an increase in number of girl children dropping out of school. This may psychologically disorient the life of the child and her family. Given that the project employees shall be recruited from many parts of the country and from different cultural and sexual backgrounds, it is possible that some of them introduce foreign sexual behaviours in the project area such as having sex with young boys. This is child molestation.

Impact significance: The magnitude of the impact is expected to be moderate because of the medium number of workers on average per site are expected to be involved in the works, most of which are casual workers to be recruited locally.

| | | Sens | sitivity of recepto | r | |
|---------------------|----------|------------|---------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low | 1 | 2 | 3 | 4 |
| t | 1 | Negligible | Minor | Minor | Minor |
| pa | Low | 2 | 4 | 6 | 8 |
| i. | 2 | Minor | Minor | Moderate | Moderate |
| of | Medium | 3 | 6 | 9 | 12 |
| ity | 3 | Minor | Moderate | Moderate | Major |
| Intensity of impact | High | 4 | 8 | 12 | 16 |
| Int | 4 | Minor | Moderate | Major | Major |

Mitigation Measures

- Employers at both the construction and operation phase should have a strict employment code of conduct.
- At the induction of employees, the employer should emphasise that molestation of children especially the girl child is punishable by taking the culprit to court.
- An employer who tries to shield or cover up for the employee caught in the act will equally be prosecuted, according to the penal code.
- Monitoring school attendance
- Sensitization in schools
- Reporting mechanisms in place such as a whistleblowing system

n) Risk of Child Labour

It is generally anticipated that local labour will be employed especially for casual activities. This anticipation is very high on the side of community leaders and members in the project area. For example, children from the refugee camps have often been used in informal sectors like loading Matooke (banana) on trucks, construction sites, stone quarries, animal grazing, and as domestic house workers because of the harsh environment. However, although this could be viewed as a good gesture that is likely to improve household income, if not properly managed and coordinated, could potentially result into abuse of children. Child labour is condemned by all international conventions including those of the International Labour Organization (ILO) and the United Nations (UN) as well as the Ugandan laws.

This is short term and direct impact but Reversible. The receptor Sensitivity is accessed to be low

Impact significance: The intensity of the impact is considered to be low because the contractor and Local governments are greatly aware of the side effects. The impact sensitivity is medium especially in short run but can be handled immediately.

| | | Sensitivity of receptor | | | | |
|------------------------|----------|-------------------------|-------|--------|-------|--|
| | | Very low | Low | Medium | High | |
| | | 1 | 2 | 3 | 4 | |
| sity pact | Very low | 1 | 2 | 3 | 4 | |
| mpä | 1 | Negligible | Minor | Minor | Minor | |
| Intensity of impact | Low | 2 | 4 | 6 | 8 | |

| 2 | Minor | Minor | Moderate | Moderate |
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| Medium | 3 | 6 | 9 | 12 |
| 3 | Minor | Moderate | Moderate | Major |
| High | 4 | 8 | 12 | 16 |
| 4 | Minor | Moderate | Major | Major |

Mitigation Measures

- The project implementation team should put a mechanism in place to identify the presence of all persons under the age of 18 and ensure that they are not employed on the project.
- Put notices on work sites (NO CHILD LABOUR) in order to silence agitations
- Engage District Community Development Office (DCDO), Gender Officers, Parish Chiefs among others.
- Monitoring school attendance
- Sensitization in schools
- Reporting mechanisms in place such as a whistleblowing system

o) Risk of Gender Based Violence

Influx of construction workers from outside the Project area pose social risks that can become significant negative impacts such as defilement of minors leading to teenage pregnancies and school drop-outs, social tension in some homes if husbands earn salaries and resort to drinking, disruption of marriages due to fraternization of contract workers with women in the community triggering gender-based violence. Other related risks include sexual harassment at the workplace that can discourage women from taking up employment opportunities. Use of vulgar language by construction works can affect the social fabric especially children that can copy such behaviour and teach it to fellow pupils.

Impact significance: The intensity of the impact is considered to be low because the contractor and Local governments are greatly aware of the side effects. The impact sensitivity is medium especially in short run but can be handled immediately.

| | | Sens | itivity of receptor | | |
|-----------|----------|------------|---------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low | 1 | 2 | 3 | 4 |
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| .ш | 2 | Minor | Minor | Moderate | Moderate |
| of | Medium | 3 | 6 | 9 | 12 |
| ity | 3 | Minor | Moderate | Moderate | Major |
| Intensity | High | 4 | 8 | 12 | 16 |
| lnt | 4 | Minor | Moderate | Major | Major |

Mitigation Measures:

- The Contractor should have a sexual harassment policy and mainstream it to ensure strict adherence to established mechanisms to avoid the emergence of these challenges;
- MWE should ensure that social safeguards personnel are recruited as part of the project implementation personnel to supervise contractors and to continuously engage communities;
- Put GBV reporting mechanisms in place;
- Community sensitization among men and women.

p) Increase in HIV/AIDS and STDs

Like any other project with mass recruitment, influx of immigrant labour is bound to occur. Most often these workers will not come with their families and some may be single. This will encourage the formation of new social networks with the resident community; increasing the risk of prostitution and the spread of HIV/AIDS and STDs. Additionally, sex workers may camp in the project area to engage in prostitution with construction workers.

There is therefore a risk of increased exposure to HIV/AIDS infections due to risk factors such as high influx of workers; increased alcoholism due to high money exchange among locals. The construction workers themselves are MARPs (Most at Risk Population) that are vulnerable to HIV infections, stigmatisation, non-compliance to ART/V protocols hence affecting Viral Load Suppression (VLS). If measures are not put in place, a part of the project area will be exposed to HIV, STI/Ds infections and other risks. In long run, it will reverse the achievements made in the fight against HIV/AIDS.

Impact significance: The intensity of the impact is considered to be low because the contractor and Local governments are greatly aware of the side effects. The impact sensitivity is medium especially in short run but can be handled immediately.

| | | Sens | itivity of receptor | | |
|-----------|----------|------------|---------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low | 1 | 2 | 3 | 4 |
| t | 1 | Negligible | Minor | Minor | Minor |
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| <u>.</u> | 2 | Minor | Minor | Moderate | Moderate |
| of | Medium | 3 | 6 | 9 | 12 |
| ity | 3 | Minor | Moderate | Moderate | Major |
| Intensity | High | 4 | 8 | 12 | 16 |
| Int | 4 | Minor | Moderate | Major | Major |

Mitigation Measures

- Sensitize workers on proper social behaviour and conduct with regard to community norms, HIV/AIDS and other sexually transmitted diseases. HIV/AIDS policies should be developed at the workplace;
- Establish and implement Contractors' HIV/AIDS Workplace Policy;
- Free HIV/AIDS testing, counselling and condom distribution be encouraged for both workers, sex workers and local community;
- The pathways for transmission of HIV/AIDS and STIs are well known, foreseeable and can be
 mitigated. Social bonds are not readily controlled, and the permanence of HIV/AIDS
 transmission makes this particular impact of social bonding both negative and also positive.
 Social bonds leading to lasting marriages and children occur in such situations; early
 pregnancies and sexual exploitation can also occur. It is therefore important to tackle the
 issue of social bonding with firmness and fairness, forbidding powerful relationships, which
 lead to exploitation of mostly women and children, while encouraging relationships that may
 lead to permanent situations;
- Develop and implement Joint HIV/AIDS action plan with Area HIV/AIDS actors such as Health Centres, UNHCR, District Health Office (DHO), etc.

q) Slope Failure due to Earthworks

In steep areas, earthworks and river flow diversion could lead to slope instability and accelerated

erosion or gullying resulting into scarring of landscapes and increased sediment transport to surface waters or wetlands or gardens. Slope failure would affect downhill property and land uses. Risk of this potential impact actually occurring will be more prevalent in sections along the roads to the construction sites characterised by hilly terrain.

Impact significance: The likelihood of the impact occurring is high in the steep area. Duration of the impact will be short-term and effects reversible hence *intensity* of the impact is *low* and *sensitivity* of the receptors *medium*. Impact significance is therefore *moderate*.

| | | Sens | sitivity of receptor | | |
|-----------|----------|------------|----------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low | 1 | 2 | 3 | 4 |
| t | 1 | Negligible | Minor | Minor | Minor |
| impact | Low | 2 | 4 | 6 | 8 |
| Щ. | 2 | Minor | Minor | Moderate | Moderate |
| of | Medium | 3 | 6 | 9 | 12 |
| ity | 3 | Minor | Moderate | Moderate | Major |
| Intensity | High | 4 | 8 | 12 | 16 |
| lnt | 4 | Minor | Moderate | Major | Major |

Mitigation strategies:

- Weak slopes should be protected using engineered structures.
- Areas susceptible to erosion and slope failure are protected using temporary or permanent drainage works.
- Phasing of the construction works such that the majority of works are undertaken during the dry season to reduce the risk of erosion.
- The Contractors will use best available methods of construction to minimize the risk of blockages and constrictions during construction. Some of the methods that can be employed for channel diversion.
- The eroded channels will be backfilled and restored to natural contours.

When mitigation recommendations are instituted, significance of residual impact will be minor.

r) Impact on Ecological Environment

Overall, the wider project area is lies in a landscape that is heavily influenced by human activity; with human settlements, cultivated areas and farmlands and eucalyptus plantations as the major components of the landscape. The habitats in the area are represented by disclimax successional vegetation types which develop in areas of relatively high human influence. Such disclimax communities result when human modified systems supplant natural ecosystems and undergo continuous cycles of burning, clearing, cultivation, grazing followed by regrowth. They do not provide stable habitats for fauna. Although agricultural landscapes are generally much more simplified habitats than natural habitats, they continue to support considerable amounts of biodiversity as they provide food sources for birds for example.

All fauna encountered and recorded are listed as Least Concern (LC) on the IUCN Red List of Threatened species. Warthog (*Phacochoerus*), Bushpig (*Potamochoerus Porcus*), Banded mongoose (*Mungos mungo*), Hippopotamus (Hippopotamus amphibious), Waterbuck (*Kobus ellipsiprymnus*), Common duiker (*Sylvicapra grimmia*), African Elephant (*Loxodonta africana*) and African buffalo (*Syncerus caffer*) was reported by the locals to have disappeared from the project area overtime (not encountered during the transect walks) and are all endangered species (EN) on the IUCN Red List of Threatened Species. It is the only species in this category that was reported by locals to have

existed within in the project area. Its generalist feeding strategy makes it highly adaptable and has allowed it to persist in human modified habitats. The most significant threat to its survival is the loss of critical nesting sites which occur in wetlands (most wetlands have been converted into farmlands).

Impact significance: The likelihood of the impact occurring is high and duration of the impact will be long term as long as the plant is constructed and remains operation. Given that the natural habitats have reduced in extent and the project could eat into some semi natural areas resulting in reduction in diversity and abundance of species found in the immediate vicinity by way of direct destruction or displacement, the *intensity* of the impact is *medium* and *sensitivity* of the receptors *low*. Impact significance is therefore *moderate*.

| | | Sens | itivity of receptor | | |
|-----------|----------|------------|---------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low | 1 | 2 | 3 | 4 |
| t | 1 | Negligible | Minor | Minor | Minor |
| of impact | Low | 2 | 4 | 6 | 8 |
| <u>.</u> | 2 | Minor | Minor | Moderate | Moderate |
| of | Medium | 3 | 6 | 9 | 12 |
| ity | 3 | Minor | Moderate | Moderate | Major |
| Intensity | High | 4 | 8 | 12 | 16 |
| Int | 4 | Minor | Moderate | Major | Major |

170 *Mitigation strategies:*

- Clearing of vegetation in the natural habitat (wetland areas) will be minimised or avoided. If this cannot be avoided, then restoration of areas not needed for permanent project activities will be done.
- Unnecessary human presence in the natural habitats and project site will be minimised;
- Invasive species if observed along the revegetation sites will be removed.
- Environmental awareness programs for the construction workers, with special focus on threatened species will be conducted.
- Hunting and poaching of wild life will be strictly prohibited.
- Prevention and minimization of pollution (e.g. noise, water) through strict implementation of planned pollution control measures will be exercised.

s) Impacts of Project Construction on Climate Change

Vehicle emissions containing greenhouse gasses will be generated during construction activities. Quantities generated will depend on type, age and number of equipment used during construction. These emissions would have a cumulative negative effect on local air quality and global climate change. Though emissions of carbon dioxide (CO₂) and methane (CH₄) are generally accepted as contributing to global warming the effect has not been quantified. Global Warming Potential (GWP) provides a means of equating the potential contribution to global warming arising from different process units/activities which can generate different emissions. GWP is measured in terms of equivalent emissions of CO_2 ; hence the GWP factor of CO_2 is 1. CH₄ has a GWP factor of 21 – that is, an emission of 1 kg of methane (CH₄) is defined as having 21 times the GWP of an emission of 1 kg of CO₂. Construction vehicles/ activities are unlikely to contribute significantly to greenhouse gas emissions due to their relatively small scale, intermittence and temporary nature, and as such are not considered further in this assessment.

Impact significance: The above impacts would mostly be local and would be small on a global scale though cumulative in nature. The manageability of the impact is high since typical impacts are well understood in conventional infrastructure construction industry and the ability to adapt to the impact is high because similar construction activities have ever taken place in the area. The *intensity* of impact is assessed as *low* and *sensitivity* of the receptors as *low*. The impact significance is therefore *minor*.

| | | Sensi | tivity of receptor | | |
|--------------|------------|------------|--------------------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low 1 | 1 | 2 | 3 | 4 |
| t | | Negligible | Minor | Minor | Minor |
| impact | Low | 2 | 4 | 6 | 8 |
| .Е | 2 | Minor | Minor | Moderate | Moderate |
| Intensity of | Medium | 3 | 6 | 9 | 12 |
| sity | 3 | Minor | Moderate | Moderate | Major |
| ens | High | 4 | 8 | 12 | 16 |
| Int | 4 | Minor | Moderate | Major | Major |

Mitigation strategies: During construction, mitigation actions recommended for minimisation of project impacts on climate are:

- Optimizing work zone traffic management: Proper traffic management practices will limit GHG emissions due to traffic congestion caused by road construction works.
- Managing overloading: Trucks hauling construction materials will be optimally loaded in order to lower GHG emissions than over-loaded ones.
- Use of existing material sources: Wherever feasible use will be made of existing borrow pits rather than opening new sites will reduce embodied carbon associated with opening up new areas.
- Use of equipment in good mechanical condition: The contractor will ensure that all motorised equipment is in good mechanical condition and regularly services to reduce emissions hey generate.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

t) Impact of Climate Change on Project Construction

Climate change would impact on construction activities both during the dry spells for activities that are water demanding. These would be slowed down and alternative sources will have to be sought increasing the cost and related impacts of hauling water from a distance. During intense rainfall, some project areas may be inaccessible given the terrain and some of construction activities may be delayed.

Impact significance: The manageability of the impact is high since typical impacts are well understood in conventional infrastructure construction industry. Considering that a competent contractor will be hired by MWE, the **intensity** of impact is assessed as **low** and **sensitivity** of the receptors as **low**. The impact significance is therefore **minor**.

| | Sensitivity of receptor | | | | |
|--------------------------|-------------------------|-------|--------|-------|--|
| | Very low | Low | Medium | High | |
| | 1 | 2 | 3 | 4 | |
| କ୍ଷ୍ୟୁ Very low 1 | 1 | 2 | 3 | 4 | |
| Inten Sity Anton I | Negligible | Minor | Minor | Minor | |

| Low 2 | 2 | 4 | 6 | 8 |
|----------|-------|----------|----------|----------|
| | Minor | Minor | Moderate | Moderate |
| Medium 3 | 3 | 6 | 9 | 12 |
| | Minor | Moderate | Moderate | Major |
| High 4 | 4 | 8 | 12 | 16 |
| | Minor | Moderate | Major | Major |

Mitigation strategies: Construction activities will be rescheduled depending on the prevailing weather conditions in order to keep within the project construction period as much as possible.

• Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

8.3.2 Anticipated Negative Impacts during Operation Phase

i. Stress on Water Resources

The provision of a potable water supply may increase the consumption of water. Provision of taps or household connections may increase water use significantly. This may consequently lead to increased abstraction and a drop in the amount of water received by downstream users on Nyamugsani and Nyamuruseghe Rivers and their water quality as a result of establishment of water intakes and treatment plant. However, an assessment of water use and demand was done as part of the detailed design and dry spells effects were factored into the water requirements. Thus, the abstraction of water resource for the purpose of the project should not have a heavy impact on available water resource.

172 *Impact significance:* Duration of the impact will be long-term depending on the recharge from the catchment and the extent of the impact will be local. The **intensity** of the impact is **low** given that there are also plans to put in place catchment management measures that would contribute in recharging the affected water resources. **Sensitivity** of the receptor such as the community members within the catchment area is rated **low** resulting in a **minor** impact significance.

| | | Sensitivity of receptor | | | |
|--------------|------------------|----------------------------|-------------------|-------------------|-------------------|
| | | Very low 1 | Low 2 | Medium 3 | High 4 |
| | Very low 1 | 1 Negligibl e | 2 Minor | 3 Minor | 4 Minor |
| act | Low 2 | 2 Minor | 4 Minor | 6 Moderat e | 8 Moderat e |
| y of impact | Mediu m 3 | 3 Minor | 6 Moderat e | 9 Moderat e | 12 Major |
| Intensity of | High 4 | 4 Minor | 8 Moderat e | 12 Major | 16 Major |

Mitigation strategies:

- u) MWE will acquire water abstraction permits with conditions to guide the amount of surface water to be abstracted.
- v) A water source protection plan is being prepared to protect the catchment areas for the water

source.

w) Promote water use efficiency through sensitization and awareness creation to reduce on water demand.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

ii. Land Pollution, Waste and Drainage Problems

Improved water supply comes with an increase in the amount of wastewater and sludge generated from the water treatment plant (domestic waste and backwash water, etc.), households and industrial or commercial facilities. Poor disposal or management of the wastewater generated will lead to land and/ or water pollution and related drainage problems. In cases where household are connected to piped water and not to sewerage system, they may use septic tanks whose cesspool or soak pit overflow may lead to contamination of soil and/or groundwater.

Impact significance: This is a direct negative impact, short-term and local in extent since there are plans to establish sludge treatment from the water treatment plant and disposal systems in the project area. The likelihood of the impact occurring is high if water users are not educated on techniques for safely disposing of wastewater from their households especially in informal settlements. The *intensity* of the impact is *medium* and *sensitivity* of the receptor is rated *medium* given that the water treatment plant is located close to the Kitagata swamp resulting in a *moderate* impact significance.

| | | Sensitivity of receptor | | | | |
|-----------|----------|----------------------------|----------|----------|----------|--|
| | | Very low Low Medium Hig | | | | |
| | | 1 | 2 | 3 | 4 | |
| | Very low | 1 | 2 | 3 | 4 | |
| impact | 1 | Negligible | Minor | Minor | Minor | |
| du | Low | 2 | 4 | 6 | 8 | |
| of ii | 2 | Minor | Minor | Moderate | Moderate | |
| | Medium | 3 | 6 | 9 | 12 | |
| Jsit | 3 | Minor | Moderate | Moderate | Major | |
| Intensity | High | 4 | 8 | 12 | 16 | |
| - | 4 | Minor | Moderate | Major | Major | |

Mitigation strategies:

- x) DWD will acquire a wastewater or effluent discharge permit from DWRM with conditions to control discharge of untreated or partially treated effluent to the environment.
- y) A good drainage system should be built around the water supply site, public stand pipe and water treatment plant. The drainage and/ or soak pit as often as needed should be cleaned by the respective households or user-communities. Households or user-communities will be sensitised about proper drainage systems and their use.
- z) Households and commercial facilities will be encouraged to render sanitation waste like food waste free of pathogenic organisms through composting technique and so make it useful as agricultural fertilizer.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

iii. Negative Impacts on Water Vendors

In many developing countries due to the great distance to traditional water source waters,

fetching water is done by water vendors. The same conditions exist in Kasese District where some community members rely on water vendors for water supply with a 20-litre jerry can costing between Ug. Shs 200 and 500. By introduction of piped potable water supply project, those people previously engaged in fetching water for others as a paid occupation, are thrown out of their job.

Impact significance: The **intensity** of the impact is **very low** given that there will still be households not connected to the piped water and with increasing population of Kasese, there will be more alternative jobs. **Sensitivity** of the receptor is rated **low** resulting in a **minor** impact significance.

| | | | Sensitivity of | | |
|--------------|-------|-----------|----------------|---------|---------|
| | | receptor | | | |
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very | 1 | 2 | 3 | 4 |
| | low | Negligibl | Minor | Minor | Minor |
| | 1 | е | | | |
| . | Low | 2 | 4 | 6 | 8 |
| impact | 2 | Minor | Minor | Moderat | Moderat |
| dm | | | | е | e |
| ofi | Mediu | 3 | 6 | 9 | 12 |
| Ę | m 3 | Minor | Moderat | Moderat | Major |
| nsi | | | е | е | |
| Intensity of | High | 4 | 8 | 12 | 16 |
| - | 4 | Minor | Moderate | Major | Major |

174 *Mitigation strategy:* Identify such people and encourage them to work as causal labourers at the proposed project facilities.

iv. Occupational Health and Safety Risks

During maintenance of the water transmission network and water treatment plant, occupational health and safety problems may arise. These may include: lifting of heavy and sharp objects and transportation of materials for maintenance, storage as well as handling and use of dangerous substances.

- aa) Inadequate lighting and ventilation in workplaces when the intervention has to be done late in the day;
- bb) Lack of adequate training (or neglect of safety precautions/ guidelines) in use of equipment and tools;
- cc) Misuse of equipment and materials for functions they are not designed;
- dd) Lack of safety signage in specific areas;
- ee) Electrical hazard; and
- ff) Eye hazards such as splashes.

Impact significance: Duration of the impact would be long-term lasting entire life of the affected person or short-term depending of the hazard exposed to. The *intensity* of the impact is *low*. However, *sensitivity* because it may involve loss of life or permanent damage of a person's limb on the receptors will be *high*, thereby giving a *moderate* impact significance.

| Sensitivity of receptor | | | |
|-------------------------|-----|--------|------|
| Very low | Low | Medium | High |
| 1 | 2 | 3 | 4 |

| | Very low 1 | 1 | 2 | 3 | 4 |
|----------|------------|------------|----------|----------|----------|
| t | | Negligible | Minor | Minor | Minor |
| impact | Low 2 | 2 | 4 | 6 | 8 |
| | | Minor | Minor | Moderate | Moderate |
| of | Medium 3 | 3 | 6 | 9 | 12 |
| ity | | Minor | Moderate | Moderate | Major |
| ntensity | High 4 | 4 | 8 | 12 | 16 |
| Int | | Minor | Moderate | Major | Major |

Mitigation strategies:

- gg) The primary measure to mitigate OHS impacts is prevention which entails identification of risks and instituting pro-active measures to avoid them. In part this can be achieved by following GIIP or national guidelines. For unavoidable risks, personal protective equipment (PPE) will be provided to workers.
- hh) All staff will be oriented on safe work practices and guidelines and ensure that they adhere to them.
- ii) Staff will be trained on how to prevent and manage incidences. This should involve proper handling of electricity, water etc. and sensitization on various modes of escape, conduct and responsibility during such incidences.
- jj) Regular safety drills will constantly follow on various possible incidences.
- kk) Signage will be used to warn staff and/ or visitors that are not involved in facility work of dangerous places.
- II) Evacuation procedures will be developed to handle emergency situations. Adequate OHS protective gear will be provided for all laboratory staff.
- mm) The treatment plant will be provided with a first aid kits shall be provided.
- nn) In addition to tree planting around the site, the facility will be fenced off with a razor wire to stop unauthorised people from accessing the site and to keep out animals and for avoidance of vandalism at the site.

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Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

v. Risk of Accidents

The development is expected to increase the traffic along the access roads due to maintenance vehicles carrying workers as well as tools and equipment for construction and maintenance of the pipeline. These impacts would mostly be linear and spatial in extent limited to road routes. They would therefore affect roadside communities, communities neighbouring the proposed site and road users.

Impact significance: The **intensity** of impact is assessed as **Medium** and **sensitivity** of the receptors as **Medium** given that there will be a few vehicles at the beginning of the project and the community will get used as the number increases in addition to the fact that the road network is being improved on. Therefore, significance of the impact is **Moderate**.

| | | Sensitivity of | Sensitivity of receptor | | |
|---------------------|------------|-----------------|-------------------------|---------------|---------------|
| | - | Very low 1 | Low 2 | Medium 3 | High 4 |
| Ŧ | Very low 1 | 1 Negligible | 2 Minor | 3 Minor | 4 Minor |
| isity of ict | Low 2 | 2 Minor | 4 Minor | 6 Moderate | 8 Moderate |
| Intensity impact | Medium 3 | 3 | 6 | 9 | 12 |

| | Minor | Moderate | Moderate | Major |
|------|-------|----------|----------|-------|
| High | 4 | 8 | 12 | 16 |
| 4 | Minor | Moderate | Major | Major |

Mitigation strategies:

- oo) Travel speeds of vehicles along the road especially at trading/ business centres will be controlled using humps and setting travel speeds not exceeding 40 km/h;
- pp) All construction equipment and trucks will be kept in good operating condition by regular servicing to reduce noise and exhaust emissions;
- qq) Adequate and appropriate signs including speed limits will be installed along the roadway in proximity to the access roads.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

vi. Impacts of Project Operation on Climate

The water treatment plant requires energy and in the event that the grid power is not available, diesel generators will be used to supply energy. The generators will contribute to gases like CO_2 , CO and CH_4 .

Impact significance: The above impacts would mostly be local extent and intermittent in nature only happening when the generators are running. Therefore, the *intensity* of impact is assessed as *very low* and *sensitivity* of the receptors as *low*. The impact significance is therefore *minor*.

| | | Sensitivity of receptor | | | |
|-----------|------------|-------------------------|----------|----------|----------|
| | | Very low | Low | Medium | High |
| | | 1 | 2 | 3 | 4 |
| | Very low 1 | 1 | 2 | 3 | 4 |
| t | - | Negligible | Minor | Minor | Minor |
| impact | Low 2 | 2 | 4 | 6 | 8 |
| <u>.</u> | | Minor | Minor | Moderate | Moderate |
| of | Medium 3 | 3 | 6 | 9 | 12 |
| ity | | Minor | Moderate | Moderate | Major |
| Intensity | High | 4 | 8 | 12 | 16 |
| lnt | 4 | Minor | Moderate | Major | Major |

Mitigation strategies: MWE will ensure that the generators are well serviced and maintained to minimise GHG emissions.

vii. Impact of Climate Change on Project Operation

A changing climate would impact water supply through changes precipitation patterns and storm-related damages. Dry spells will lead to an overall decrease in the availability of water and communities may revert to unsafe water sources. Changes in climate may also result in more intense rainfall events resulting into heavy storms. Storm water-related effects include surge damage, wind damage and flooding which could pose a direct threat to the water infrastructure.

Impact significance: The water shortage may force communities to use unsafe sources leading to impacts some of which are irreversible, for example, death resulting from water borne diseases and poor sanitary conditions. The *intensity* of impact is assessed as *Medium* and *sensitivity* of the receptors as *Medium*. The impact significance is therefore *moderate*.

| | | Sensitivity of | Sensitivity of receptor | | |
|-----------|------------|----------------|-------------------------|-------------|-----------|
| | - | Very low 1 | Low 2 | Medium 3 | High 4 |
| | Very low 1 | 1 | 2 | 3 | 4 |
| ಕ | | Negligible | Minor | Minor | Minor |
| of impact | Low 2 | 2 | 4 | 6 | 8 |
| .E | | Minor | Minor | Moderate | Moderate |
| | Medium 3 | 3 | 6 | 9 | 12 |
| ity | | Minor | Moderate | Moderate | Major |
| Intensity | High 4 | 4 | 8 | 12 | 16 |
| lnt | - | Minor | Moderate | Major | Major |

Mitigation strategies:

- rr) Catchment management and source protection plans are being developed to ensure that in cases of extreme weather conditions, the water resources are not greatly affected.
- ss) The communities will be encouraged to use the toll-free calling line to report any damages during extreme weather conditions.

Adoption of the above mitigation measures will reduce impact intensity to "very low" resulting in a residual impact of minor significance.

8.3.3 Cumulative Impacts

The Ministry of Water and Environment in Uganda developed an Integrated Water Management and Development Project (IWMDP) to integrate water resource management, planning, development and access to water and sanitation services in priority urban areas. Western Uganda is one of the regions to benefit from the IWMDP and as such Kasese District will be one of the beneficiaries. In line with Uganda's Vision 2040, Cap 4.1.9 section 153, of improving access to safe water by 100% this project will ultimately bridge the gap in order to achieve this vision and extending a more reliable source of drinking water closer to the people.

A reliable drinking water supply would generate long-term economic benefits, including benefits to the local economy and spur up development in the area. Construction activities would generate short-term economic benefits and residents of Kasese District in the project area will benefit from this and once the earnings received are well utilised, the benefactors' livelihood would have been transformed for the better.

There is potential for cumulative impacts as a result of the planned Nyamugasani Piped Water supply project as well other planned and ongoing projects in Kasese such as the Nyamugasani HPP I in the upstream of the proposed Nyamugasani Intake site. The proposed Nyamugasani WSS will be implemented in an area already with the Nyamugasani HPP I and therefore may trigger cumulative impacts. Some of the key cumulative impacts and risks that may be associated with the Water supply works are summarized below:

- tt) Positive impact in terms of employment opportunities created during both construction and operation phase. Operation of the projects will be a significant cumulative impact at local government level in terms of creating jobs, providing water for humans and livestock.
- uu) Land acquisition and displacement of economic/ livelihood activities will likely be a key cumulative impact during the pre-construction period for the Nyamugasani water Works. The Implementing Parties (MWE) must clearly plan management of land acquisition and resettlement impacts. Resettlement Action Plan (RAP for the water works has been prepared. Resettlement issues may require time and resources as well as a series of engagements and

support. In addition, some sites will require compensation and resettlement which processes require time and resources. If resettlement issues are not managed in a timely manner that may cause project delays that can be costly. Therefore, the support (human and financial) from Implementing Partners is critical to effectively manage pre-construction activities to ensure that contractors are handed sites that are free of any encumbrances.

- vv) Traffic safety risks may increase in case the contractors use common material sites as well as access roads. The contractors must prepare and implement comprehensive plans for material sourcing and transport as well as decommissioning of those sites.
- ww)Community health risks especially the spread of HIV/AIDS require concerted efforts. Interactions of workers for different sites with communities can increase risk of HIV/AIDS. The contractor maximizes shall maximize the use of local workers as opposed to moving workers from outside the project areas to minimize new interactions that can increase the risk of spread of HIV/AIDS. In addition, the contractors must provide their own healthcare services by recruiting qualified health practitioners to operate site clinics. This will mitigate the risk of the contractors constraining the meagre social services within the project areas.
- xx) Water use for construction works may pose social conflicts in terms of use in case water is abstracted from rivers with low flowrates. Therefore, to mitigate ecological impacts and potential social conflicts especially during prolonged dry spells, the Contractors should abstract water from rivers with high flows such as R. Nyamugasani and Nyamuruseghe intakes which are the proposed intakes from the design report.

9 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

9.1 Introduction

This environmental and social management plan (ESMP) for proposed construction works and operation of the water supply and sanitation facilities under this project, identifies the potential environmental and social aspects that should be monitored. It identifies parties responsible for monitoring actions, associated costs, indicators and training or capacity building needs and reporting. Various aspects of the ESMP are detailed in sections below.

9.2 ESMP implementation and Monitoring Arrangements

9.2.1 Roles and Responsibilities of parties in ESMP implementation and Monitoring

The following parties will be involved with the ESMP implementation, that is, the client (MWE - and a project manager will lead the client team) with ultimate responsibility for E&S performance on the project; the Supervising Engineer (with an Environment and Social Specialist on their team) responsible for monitoring and supervising the implementation of the ESMP and contract requirements; and the Contractor (with an Environment and Social Officer) who has responsibility for implementing the ESMP.

Therefore, the institutional responsibility of ensuring that this ESMP is implemented will rest with MWE having a key role of reviewing consultants' reports for compliance with the ESMP, among others. The Project Manager shall have the ultimate responsibility for implementation of ESMP and will therefore ensure that resources are duly provided. Other roles will be:

- Monitoring implementation of mitigation actions by contractors
- Coordinating training and capacity building where planned

MWE should ensure that all its personnel to be involved in implementation of this ESMP are adequately qualified and were appointed based on their qualification and suitability for respective roles. There is thus no training provided for them under this ESMP.

Implementation of this ESMP is the responsibility of the Contractor under the guidance, supervision and monitoring by the Supervising Engineer and the contractor will be required to prepare the CESMP. Other plans to be prepared by the contractor will include: Labour Management Plan (LMP), Child Protection Plan, Stakeholder Communications and Engagement Plan (SEP), Quality Management Plan, Gender and Social Equity Management Plan, HIV/AIDS and STIs Management Plan, Occupational Health and Safety Management Plan and Community Health and Safety Plan. The Environmentalist and Social Specialist for the Supervising Engineer will supervise the contractor's monitoring activities.

The Contractor's Environment and Social Officer will ensure that the provisions in this ESMP are implemented within the sites under their supervision and to collect and transmit relevant information to the Supervising Engineer.

Subcontractors will be required by a condition of their subcontract with the main contractor to actively manage environmental and social issues associated with their subcontract works and comply fully with all the applicable statutory regulations and the main contractor's environmental and social management plans. For significant aspects of work such as earthworks, the contractor may require subcontractors to provide their own Environmental and Social Management Plans and/or Method

Statements for review by the Contractor's Environmental consultant/Officer. These ESMP's shall be approved by the Resident Engineer in consultation with MWE for adequacy before being implemented.

The Kasese District Environmental Officers (DEOs) are responsible for overseeing environmental protection on behalf of NEMA. The DEO will have implementation and monitoring roles during execution of this ESMP. Usually, these officials lack adequate facilitation so the project will need to provide auxiliary financial assistance for them to have effective participation in this project.

9.2.2 Monitoring and Reporting Arrangements

A. Monitoring Requirements

Monitoring will verify if predicted impacts have actually occurred and check that mitigation actions recommended in the ESIA are implemented and their effectiveness. Monitoring will also identify any unforeseen impacts that might arise from project implementation.

Monitoring will be undertaken by MWE and Environmental Officers who represent NEMA at local administrative level. Monitoring by NEMA in this case can be considered "third party monitoring" but this is its regulatory mandate according to National Environment Act (2019).

B. Monitoring

Monitoring will be done through site inspection, review of site records (Accident Log, issuance of PPE, waste records, trainings and inductions, permits and approvals, etc.) review of grievances logged by stakeholders and *ad hoc* discussions with potentially affected persons (construction workers, residents near the project facilities). At each monitoring, a discussion with a chairperson of environment 180 committee of the area's local council (LC) could provide insight into views and grievances community has about the project.

Monitoring will be undertaken continuously on a daily basis over the construction period.

Environmental and Social Compliance Audits will be necessary both during construction and project operation. While construction audits will aim to verify compliance to impact mitigation requirements, post-construction audits are a regulatory requirement within 12 months and not more than 36 months after completion of construction, according to ESIA Regulations (2020).

Since construction duration is estimated to be $1\frac{1}{2}$ years, this ESMP has included a budget for $1\frac{1}{2}$ year's construction audit and a separate provision so that from year 2 to year 5 full environmental audits are done as per Uganda requirements.

Both construction and post-construction audits can be conducted internally (by MWE) or by a consultant hired by MWE. If undertaken by a hired consultant, a budget has been proposed for both in this ESMP.

C. Reporting and Auditing

Concise monthly monitoring reports should be compiled by the Contractor. The report will highlight the different activities undertaken to manage environmental and social aspects of the project in line with contract specifications, laws, standards, policies, and plans of Uganda and World Bank Safeguard policies. The report will be discussed during the monthly progress meetings. The Environmentalist and Social Specialist for the Supervising Engineer will approve the Contractor's monthly environmental and social monitoring report that will then be transmitted to MWE for final approval. MWE's Environmental Management and Social Specialist will also independently monitor the implementation of the ESMP and/or verify the accuracy and content of the Contractor's monitoring report and then report to MWE.

The report will also be shared with The World Bank and other relevant stakeholders. Approval of the environmental monitoring report will be the basis for the Supervising Engineer to approve payment of the respective environmental and social BoQ items. The Contractor will be required to immediately report any serious and severe incidents (within 24 hours) to the Bank and undertaking a root-cause investigation within 10 days.

Construction- and post-construction phase auditing should culminate in reports that MWE shall share with IDA, NEMA or other interested stakeholders. Note that while MWE is under no obligation to disclose construction phase audits, annual post-construction audits must be submitted to NEMA as a regulatory requirement as per the National Environment (Environment and Social Impact Assessment) Regulations (2020). Table 64 details the Environmental Management and Monitoring Activities and Criteria.

9.3 Grievance Redress Mechanism (GRM)

This section describes avenues for affected persons to lodge a complaint or express a grievance against the project, its staff or contractors during project implementation. It also describes the procedures, roles and responsibilities for addressing grievances and resolving disputes. Every aggrieved person shall be able to trigger this mechanism to quickly resolve their complaints. The objectives of the grievance process are:

- Ensure that appropriate and mutually acceptable corrective actions are identified and implemented to address complaints;
- Verify that complaints are satisfied with outcomes of corrective actions;
- Avoid the need to resort to judicial proceedings.

The grievance mechanism will be fed from three main sources:

- Community residents and the respective local leaders.
- Supervising engineer, clerk of works or contractor.
- Monitoring team who will forward issues/concerns identified in the field.

Steps of the grievance process are described below.

a) Step 1: Receipt of complaint

A verbal or written complaint from a complainant will be received by the Clerk of Works or Supervising Engineer and recorded in a complaints log s(he) keeps on site. The log will indicate grievances, date lodged, action taken to address complaint or reasons the grievance was not acted on; information provided to complainant and date the grievance was closed. Grievances should be lodged at any time, either directly to the Clerk of Works'/ Project Office or through the Local Council Chairperson. The process for lodging a complaint is outlined below:

- Supervising Engineer receives complaint(s) from complainant and records it in log (in English).
- Supervising Engineer reads the recorded complaint translating it into local language for the complainant to confirm correct detail of complaint has been documented.
- 4 Complainant signs the log to confirm grievance was accurately recorded.

Written complaints will be received and person delivering the complaint fills in log with his or her details (name, contact, etc.); date of delivery and then the person receiving the complaint also signs against the record.

b) **Step 2: Determination of corrective action**

If in his/her view, a grievance can be solved at this stage, the Clerk of Works/ Project Office will determine a corrective action in consultation with the aggrieved person. Remedial action(s) and

timeframe within which they must be accomplished has been described and the party responsible for implementing them will be recorded in the complaint log.

Grievances will be resolved and status reported back to complainants within 5 days. If more time is required, this will be communicated clearly and in advance to the aggrieved person. For cases that are not resolved within the stipulated time, detailed investigations will be undertaken and results discussed not more than 1 month from lodging a grievance.

c) **Step 3: Meeting with the complainant**

The proposed corrective action and the timeframe in which it is to be implemented will be discussed with the complainant within 5 days of receipt of the grievance. Consent to proceed with the corrective action will be sought from the complainant and witnessed by a local council chairperson (LC Chairman).

d) **Step 4: Implementation of corrective action**

Agreed corrective action will be undertaken by the project or its contractor within the agreed timeframe. The date of the completed action will be recorded in the log against the complainant's grievance.

e) Step 5: Verification of corrective action

To verify satisfaction, the aggrieved person will be asked to return if not satisfied with the corrective action.

f) **Step 6: Action by MWE and project contractors**

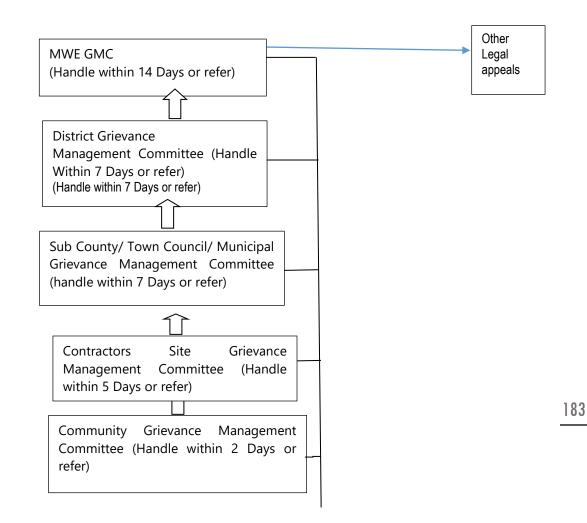
182 If the Clerk of Works cannot solve the grievance, he will refer it to MWE (and contractor) through the Supervising Engineer. If MWE (and Contractor) or cannot solve the grievance, then it can be referred to the local government structures ranging from LC I to LC V or the Courts of Law.

The steps in grievance handling for the PAPs and the community in general are outlined in theTable below and once received, all grievances will be responded to in a maximum of 19 days.

| # | Step | Responsibility |
|---|--|-------------------------------------|
| 1 | Receive Grievances and Provide PAPS with a Grievance | MWE, RAP Implementation Consultant, |
| | Acknowledgement Form | and GMCs |
| 2 | Grievance Registration and Acknowledgement | MWE, RAP Implementation Consultant, |
| | | and GMCs |
| 3 | Grievance Sorting and Logging in database and tracking | MWE, and RAP Implementation |
| | system | Consultant |
| 4 | Grievance Assignment | MWE |
| 5 | Grievance Processing and Feedback (30 days) | MWE, RAP Implementation Consultant, |
| | | and GMCs |
| 6 | Corrective Actions, Grievance Follow Up and Closure | MWE |

| Table 61: Grievance | handling steps |
|---------------------|----------------|
|---------------------|----------------|

Flow of Appeals or Referral of Grievances and Timelines



Grievance Types

The Project grievance mechanism classifies grievances into five types, as described in the following sections.

• Cadastral Survey Grievances

Cadastral Survey Grievances may require the Cadastral Surveyor to rectify errors in the initial surveys, subdivision of plots, or boundary markings.

• Valuation Grievances

Valuation Grievances arise out of compensation package disagreements and may include the values determined for land, crops & trees, buildings, and other structures as well as errors of omission.

• Family and Land Ownership Disputes

Family and Land Ownership Disputes usually include:

- Disagreements between spouses
- Disagreements between the HoH and other family members

- Inheritance uncertainty in cases where the HoH recorded during the surveys has since passed away
- Oppression of widows or children by family members
- Competing land ownership claims

• Legal Grievances

Legal Grievances require legal support services as part of RAP Implementation and they include:

- Processing Letters of Administration for deceased cases (where the legal owner or the HoH that was recorded during the surveys has since passed on)
- Incapacitated PAPs
- Absentee PAPs requiring Power of Attorney
- Cases requiring Guardianship Orders
- Misidentification of ownership
- Processing family consents

• Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Violence Against Children (VAC) related grievances

As per the WB Good Practice Note (GPC) on Gender, "gender-based violence is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (i.e. gender) differences between males and females. It includes acts that inflict physical, sexual or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private). Women and girls are disproportionately affected by GBV across the globe".

In order to proactively protect women from GBV during the land access and resettlement process, the Project will apply a series of differentiated measures to ensure engagement of women in Project activities and more specifically, to ensure open and easy access to the grievance mechanism for Project Affected Women. Therefore, the following measures will be implemented:

- Focus group and one on one discussions with Project Affected Women including discussions specifically related to accessing the grievance redress mechanism and raising awareness of any GBV risks
- As part of the financial management program, attendees will be sensitized on the GBV
- Establishment of a grievance redress mechanism with procedures and channels to enable confidential reporting of GBV incidents
- Engage with LC1s and other community members to raise awareness on preventing and reporting GBV.

Grievance Database Management and Tracking

All received grievances shall be registered and logged into the grievance register for further management and tracking. An acknowledgement receipt shall be issued to the complainant. MWE shall keep written records of all complaints for effective grievance management.

All decisions reached at the different resolution levels shall be communicated to the complainant and other stakeholders by the Chairperson of the respective GMC. It will be the responsibility of the Grievance Officer (GO) to deliver the communications. Evidence of communication of decisions to complainants shall be acknowledged by way of signing a dispatch form or acknowledgement of a file copy.

Agreed corrective action will be undertaken by the responsible agency/ part for example a Local government, MWE, contractor or authorized sub-contractors in close consultation with the complainant within the agreed timeframe and completed action recorded in the grievance database. To verify satisfaction, the Grievance Committee will upon receipt of a completion report from the GO verify that corrective actions have been implemented. A signature of the complainant will be obtained on the consent form. If the complainant is not satisfied with the outcome of corrective action, additional steps may be undertaken to reach agreement or an appeal will be lodged by the complainant.

As part of the broader community engagement process, MWE shall also report back periodically to communities and other stakeholder groups as to how the company has been responding to the grievances it has received (i.e., time to respond, percentage of closed/resolved cases, number of complaints monthly).

9.3.1 Grievance Redress Mechanism for the community

There will be a necessity to resolve conflicts swiftly in order to expedite the project's planning and construction phase and for the smooth eventual operational activities. Therefore, a grievance redressing mechanism is essential to ensure harmony between the developer or the project implementers and the local people. This procedure will address this need in detail. The objectives of the grievance process as explained in the subsequent chapter of these guidelines will be as follows:

- Provide affected people with avenues for making a complaint or resolving any dispute that may arise;
- Ensure that appropriate and mutually acceptable corrective actions are identified and implemented to address complaints;
- Verify that complaints are satisfied with outcomes of corrective actions;
- Avoid the need to resort to judicial proceedings.

Grievance management is an important step in community engagement. There have been and will be community grievances throughout the project's various development stages. It is expected that all such grievances will be amicably resolved if the developer is to abide by the global and countryspecific Social Safeguard guidelines. In practice, in similar compensation and resettlement activities, many grievances arise from misunderstandings of the project policy, or result from conflicts between neighbours, which can usually be solved through adequate mediation using customary rules or local administration at the lowest level. Most grievances can be settled with additional explanation efforts and some mediation using customary dispute settlement mechanisms.

The purpose of Grievance management shall be to provide opportunity for the aggrieved parties to resolve issues through arbitration and negotiation based on transparent and fair hearing. It will allow the parties in the dispute to arrive at a win -win solution. Final outcome thus be that the extra judicial systems will work smoothly and that number of disputes seeking interventions at the country judiciary will be made minimal. The functioning a proper grievance management mechanism is a requirement in view of the above. The overall management of grievances is the responsibility of the developer or/and the contractor. The Project, thus, will put in place an amicable, extra-judicial mechanism for managing grievances and disputes based on explanation and mediation by third parties. Procedures relevant to this amicable mechanism are detailed below. It will include three different levels:

- Registration by project of the complaint, grievance or dispute;
- Processing by project of the grievance or dispute until closure is established based on evidence that acceptable action was taken; and
- In the event where the complainant is not satisfied with action taken by project as a result of the complaint, an amicable mediation can be triggered involving a mediation committee independent from the Project.

Managing grievances needs a clear and transparent procedure well instituted within the management structure of the project. At minimum, such a procedure should consist of the following steps:

- to receive the grievances,
- to acknowledgement the receipt,
- investigation and resolution,
- Closeout and follow-up.

I. The need to maintain a Grievance Register

There should be Grievance Register which would record all the grievances, complaints and issues the stakeholders would wish to bring to the attention of the Developer or the Contractor. It should be kept at a place where all will have easy access; preferably this should be placed at the office (allocated for the Grievance Committee (GC)). It should contain the date of the entry, name and contact details of the complainant; nature of grievance, Signature (on one side of the Register) and actions taken to address or reasons the grievance was not acted on, the signature of the GC and Complainant as to how the grievance was closed and date (on the other side of the Register.

II. Recording of the complaints into the Grievance Register

The following steps are to be followed when the complaints will be received: Receipt of complaint (a verbal or in written) will be received by the Community Liaison Officer or any other officer (a member of the Grievance committee).

- The complainant can obtain the assistance from a member of the grievance committee or the Site welfare officer to lodge such an entry in to the Grievance Register.
- The Officer Responsible or the GC member, who is at present, will communicate with the complaint in a language acceptable to the complainant.
 - Since the site working is carried out in English Language, the Site welfare officer or the member of the Grievance committee may lodge the entry in English language
 - After lodging the complaint in the register, the officer recorded such complain shall read to the complaint what is recorded and sign the entry made into the Grievance Register

III. Formation of a Grievance Committee

In Uganda at the local level, the village leaders and the LC (1) play a key role in managing disputes. The Parish level committees formed for the management of disputes is the lowest level of accepted forms of reconciliation board at which the complainants can have access to for justice if issues will not be resolved at the village level. However, in order to strengthen the village level reconciliation of disputes specially over the issues arising from the project related matters, appointing of a Grievance Committee has been considered a viable option according to the accepted practices. It is expected that grievances depending on the complexity and nature can be resolved either at the site level, at the grievance committee level or at the project developer's top management level or at the judiciary level. It means that if a complainant is not satisfied with the site level solution offered by the site manager or the project's administration manager, the matter can be taken up by the Grievance Committee (GC).

The constituency of the grievance committee and its role is explained in the following section. This GC is to be considered the vital body which prevents any grievances to be heard at higher levels. In parallel and where necessary, the GC holds meetings or other appropriate communication with the complainant, with the aim of reducing any tensions and preventing them from escalating. During closeout, the GC seeks to confirm that its actions have satisfied the complainant. During follow-up, the GC, with the assistance of the Site Construction Manager investigates the causes of grievances, where necessary, to ensure that the grievance does not recur.

The composition of Grievance Committee is depicted below:

- Representative from area 02 Members (preferably from each Sub County)
- Representative of Women 02 Members
- Representative of PWD—01 Member
- Representative of the Local Government 02 Community Development Officers
- Representative from the developer 01 Member
- Representative from the contractor 01 Member

Members of the Grievance will be provided training on conflict resolution and given more exposure on procedures of managing grievances.

IV. Performance Indicators in respect of the functioning of the Grievance Committee

Key interventions include:

- Setting up of a Functional Grievance Committee;
- Addressing employee's and affected persons (PAPs) grievances in all project phases.

V. Grievance Redress Procedure

The Grievance Redress Committee will receive a written grievance or complaint. Preferably these should be those, which the Reconciliatory Committee has failed to handle. This Committee will dispense grievances/complaints as described below;

Legal Redress

If the complainant feels dissatisfied with the administrative arbitration decision by the Grievance Redress Committee (GRC), the complainant will then seek legal redress in courts of law. If the complainant is not satisfied with the decision made above, he or she may lodge an appeal to the civil court.

VI. Proposed Process of Grievance Management

The ESMP recommends the following process, which should be adopted by the project support team:

a) Lodging Complaint

The Grievance Management Coordinator/Officer will receive complaint from the PAP in the local language and complete a Grievance Form, which will be signed by the leader of the Local Grievance Management Committee and the PAP/complainant. This will then be lodged in the Grievance Log/Register provided by the Grievance Management Coordinator/Officer.

b) Determining Corrective Action

If in their judgment, the grievance can be solved at this stage and the Grievance Management Coordinator/Officer and a representative of an NGO/CBO will determine a corrective action in consultation with the aggrieved person. A description of the action; the time frame in which the action is to take place; and the party responsible for implementing the action will be recorded in the grievance database.

Grievances will be resolved and status reported back to complainants within 30 days. If more time is required, this will be communicated clearly and in advance to the aggrieved person. For cases that are not resolved within the stipulated time, detailed investigations will be undertaken and results

discussed in the monthly meetings with affected persons. In some instances, it may be appropriate to appoint independent third parties to undertake the investigations.

c) Meeting the Complainant

The proposed corrective action and the time frame in which it is to be implemented will be discussed with the complainant within 30 days of receipt of the grievance. Written agreement to proceed with the corrective action will be sought from the complainant (e.g. by use of an appropriate consent form). If no agreement is reached, the above step will be re-visited.

d) Implementation of corrective Action

The Project or its Contractors/Operators within the agreed timeframe will undertake agreed corrective actions. The date of the completed action will be recorded in the grievance database.

e) Verification of the Corrective Action

To verify satisfaction, the aggrieved person will be approached by the Grievance Officer to verify that the corrective action has been implemented. A signature of the complainant will be obtained and recorded in the log and/or on the consent form. If the complainant is not satisfied with the outcome of the corrective action additional steps may be undertaken to reach agreement between the parties. If additional corrective action is not possible alternative avenues maybe pursued.

f) Action by Local leaders and Contractor(s).

If the Grievance Co-ordinator and NGO/CBO representative cannot solve the grievance, it will be referred to relevant parties such as local leaders, District Officers, NEMA, Valuer and MWE, for consultation and relevant feedback provided.

g) Action by Grievance Redress Committee (GRC).

If the complainant remains dissatisfied and a satisfactory resolution cannot be reached, the complaint will be handled by the Grievance Redress Committee. A dedicated Grievance Committee will be established to assess grievances that arise from disputes. This will include the following members: -

- MWE Chair,
- IWMDP Project Coordinator,
- Resettlement Officer/Social Scientist Secretary,
- Project's Environmental Focal Point,
- The Chair of the local community (LC I Chairman),
- A member of a recognized non-government organization, A Community Leader.

This committee must have a quorum of at least two thirds persons. Decisions will be reached by simple majority. The Grievance Committee should be constituted for as long as no more grievances are lodged. Once the Grievance Committee has determined its approach to the lodged grievance, this will be communicated to the Grievance officer, who will communicate this to the complainant. If satisfied, the complainant signs to acknowledge that the issue has been resolved satisfactorily. If the complainant is not satisfied however, the complainant notes the outstanding issues, which may be relodged with the Grievance Committee or the complainant may proceed with judicial proceedings. The effectiveness of the GRM will be evaluated during the periodical performance reporting and as part of the Environmental Audits.

The GRM should be assessed on the following parameters: -

- Number of complaints:
- Grievance issues by type and how they were resolved:

- Total received, total justified,
- Total resolved at various levels including the type of agreement reached,
- Total referred to legal system/courts of law, including clarification on who initiated (local leaders, PAP or MWE) the referral and subject matter.

VII. Proposed Terms of Reference for the Grievance Management Coordinator/Officer

In line with MWE's resettlement policy framework, projects need to adopt appropriate measures that minimize the risks relating to constructing the water supply and sanitation project. Based on consultations with stakeholders in both districts, effective management of grievances strongly enhances the performance of projects through elimination of construction delays, proper expectation management and increasing community support for the project the current situation suggests that community members incur high transaction costs to ensure that their grievances are handled.

Therefore, MWE will seek the services of a grievance management coordinator to support the existing framework in documenting, analysing and engaging stakeholders on how to manage project related grievances as a way of minimizing to delays in works related to unresolved grievances. The roles and responsibilities of the grievance management coordinator will include: -

- to coordinate the work of the Grievance Committee, including calling and chairing scheduled meetings;
- help train Community and Local Government staff engaged in grievance management for land and crops;
- provide advice and assistance to such persons;
- monitor progress of grievances;
- inform Members of outcome of vote on whether or not to proceed to grievance;
- act as primary Association contact with lawyers and liaise with legal counsel regarding on going grievance issues;
- And report on informal disputes and grievances to MWE Project Implementation Unit on a regular basis.

Training and Qualifications: Minimum of a relevant university degree with 5 years' experience in grievance handling in rural communities with solid working knowledge of environment, resettlement and compensation issues in Uganda.

9.3.2 Workers Grievance Redress Mechanism

In accordance with the Employment Act (2006), the MWE/RWSSD shall ensure that the Contractor has provided contracts to all workers and has established a GRM and grievance redress committee with workers' representation. It is the responsibility of the Contractor(s) to ensure that Workers GRMs and with redress and appeal processes and institutions is in place and shared with MWE/RWSSD before the commencement of the Construction Phase. Employee Grievances may include;

- a. Undesirable working conditions in physical terms.
- b. Changes without prior notice.
- c. Poor employee relations.
- d. Improper wage adjustments.
- e. Dissatisfactory office policies in case of: Promotion, Demotion, Leaves, Overtime
- f. Violation of laws.
- g. Inadequate safety, health, and welfare amenities.
- h. Labour-management hostility.
- i. Incidences of workplace favoritism and nepotism, among others.

Site GMC (act within 5 days upon receipt of Grievance)

For timely management of complaints, the project shall have a grievance desk at the site for the workers (Site GMC). The Site GMC shall include the following members;

- Resident Engineer- Chairperson
- Site Engineer
- Contractor's Sociologist
- Contractor's Health and Safety Officer
- Consultant's Sociologist- Secretary
- Consultant's Environmentalist
- Workers' representative

Under the supervision of the consultant's Sociologist, the Site GMC shall make immediate responses to grievances related to contractor's workers, agents, sub-contractors or suppliers. A toll free telephone number can be provided at the site GMC desk to enable workers report any complaints. For unresolved workers' grievances, the site GMC shall escalate these to MWE.

Stages of handling workers' grievances;

Option 1: Informal discussion

If workers have a grievance or complaint regarding their work, they shall, wherever possible, raise their concern with a supervisor or manager as it may be possible to find a solution informally. This shall make it more likely that disputes can be resolved quickly, closer to the source of the problem, making it less likely that the issue escalates into an intractable problem. Nonetheless, the issue and response shall still be logged and tracked from the perspectives of checking outcomes and monitoring

Option 2: Formal complaint

If the grievance is not resolved informally, the aggrieved shall proceed to resort to the formal grievance redress mechanisms, following the following steps;

190 Step 1: Lodging the compliant to Workers' Council

If the matter is serious and/or the worker wishes to raise the matter formally, the worker shall set out the facts of the grievance in writing to the committee, with support and guidance from the section representative who then forwards the complaint to the secretary. The secretary then records the complaint in the log book and notifies the chairperson. Alternatively, the worker may raise complaint through suggestion boxes, phone calls, text messages or email to the secretary (Consultant's Site Sociologist).

Step 2: Assessment of compliant and investigation by Workers' Council within 5 days

On receipt of the complaint, the secretary shall make further investigations and in consultation with Chairperson shall schedule for a meeting (depending on the urgency of the complaint) to assess the complaint and determine the corrective action. The assessment shall also identify the key issues that have been raised, together with any root causes, and shall determine the outcome that the worker is looking for from the process. Any additional information shall be gathered to allow a full assessment. The appropriate form of investigation will depend on the type of complaint and the seriousness of the allegation. In general terms, the committee shall try to understand the key issues and interview the individuals involved in a complaint, e.g. those managing the workers, or those responsible for the activity or service that is raised in the grievance. The workers council shall conclude the issues or escalate the issues to the Disciplinary committee. Concluded issues which require attention of management shall be communicated formally by the Secretary to Contract Manager for action with a copy to the Resident Engineer. The issues which require escalation shall be referred to the Secretary of the Site Disciplinary committee (Contractor's Human Resource Officer).

Step 3: Determination of corrective action by Disciplinary committee within 7 days

A disciplinary committee shall hold hearings, and invite both the offender and the offended. The disciplinary committee shall give fair hearing to anyone suspected as offender in order to make fair judgment guided by the Workers' Code of Conduct. On assessment of the complaint and judgement

derived from hearings convened for complaints of disciplinary nature, the disciplinary committee will advise / recommend to the contractor's management in writing on the appropriate course of action to be taken against the suspected offender. The submission shall be made by the Chairperson to Contract Manager with a copy to the Resident Engineer.

Step 4: Site GMC (act within 5 days upon receipt of Grievance)

The Site GMC shall handle workers' complaints with utmost commitment and with a view of getting a settlement. The Site GMC may review the views of the workers' council and/or the disciplinary committee to ascertain the merits and demerits pertaining to the complaint in a bid to find an amicable solution. The Site GMC shall handle grievance resolution in line with the safeguard's provisions of the project and acceptable just mechanisms. For unresolved grievances, the site GMC shall escalate or refer these to MWE.

Step 5: Feedback from the affected parties

The contractor or worker shall give feedback to the GRC on the implementation of the Committee recommendation and this shall be recorded in the logbook.

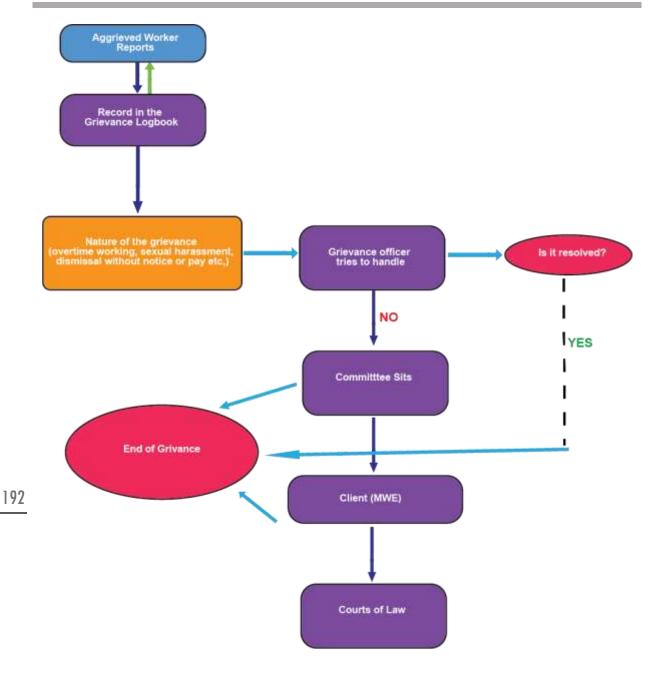
Step 6: Appealing to MWE against the Verdict of the Site GMC

Any issues that require escalation beyond Site GMC shall be referred to MWE. The issues shall be referred by the Resident Engineer and addressed to Permanent secretary MWE with Attention to Social Development Specialist.

Upon the receipt of case the project management team shall review and handle the matter within 10 days. The team shall comprise at the minimum the following;

- Project Engineer (Chairperson)
- Social Development Specialist (Secretary)
- **Environment Specialist**
- **Communication Specialist**

In the event that MWE finds a valid case, it would then re-visit the process of investigation in 191 consultation with the District Labour Office and/or any other relevant office/ agency



Workers' GRM Pathway

9.4 CONTRACTOR'S ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS

The contractor shall develop and implement the following specific E&S management plans before commencement of any development activities.

| No. | MANAGEMENT PLAN | Scope to be covered |
|-----|-----------------|---|
| 1. | Environmental | Noise and dust levels mitigation and monitoring |
| | Management Plan | Pollution prevention and protection measures |
| | | ✓ Assessment and measures to prevent pollutants from entering the river |
| | | Waste Management plan; including: Waste hierarchy (i.e. reduction at source, reuse, recycling, energy recovery, |

Table 62: Plans to be considered in the project implementation

| | | responsible disposal) and green procurement; |
|----|---|--|
| | | ✓ Monitoring and reporting. ✓ Resource Management including: Objectives, targets, processes in place for resource efficiency ✓ Water abstraction, conservation, discharge measures ✓ Energy and fuel management |
| 2. | Occupational Health & Safety Management Plan | Summary of OHS hazards and risks identification and assessment High-risk area identification and management Occupational Health and Safety Communication and Training Programme PPE Use Manual Risk Assessment Hazard, Risk and Impact Assessment Procedure Accident Investigation and Reporting, Near Miss Procedure |
| 3. | Emergency Response Plan | ✓ Emergency Evacuation Procedure ✓ Emergency response in event of accidents, earthquake, extreme weather, fires, animal drowning etc ✓ Emergency response equipment/materials requirements ✓ Procedure for staff and subcontractors to report any incidents and the investigation, remediation and preventive actions taken. ✓ Regular emergency response training ✓ Emergency Communication Procedure including with local communities and authorities |
| 4. | Auxiliary Sites and Associated Facilities Management Plan | ✓ EHS screening of associated facilities like parking yard and dumping sites ✓ Verification of compliance for third-party facilities ✓ Associated facilities EHS assurance |
| 5. | Cultural Heritage Management Plan | ✓ Cultural heritage supervision and management during inundation ✓ Chance find management and response ✓ Interface and coordination with relevant authorities ✓ Monitoring and reporting of intervention activities to recover and record cultural heritage values |
| 6. | Human Resource and Labour Force Management Plan | Mobilization of the key staff Training and skill development activities; Employee grievance mechanism; and Monitoring and reporting Preparation of the Local Recruitment Procedure to address inter alia the following measures: 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. Maximize use of local subcontractors and suppliers. Information about work opportunities will be made available to the local population. Workers' community interaction behavioral code of conduct Key Organization Plan, Recruitment Procedure, Working Conditions, Disciplinary Procedure, Training Procedure, staff contracts, benefits |
| 7. | Child Protection Management Plan | A child protection policy and commitment Code of conducts for workers and special code for drivers, operators and security guards Sensitization of workers and community Identification of any violations |

| | | Clear protocols for management of any child rights abuse attributed to the project |
|-----|---|---|
| | | Tracking and reporting of child rights abuses |
| 8. | Gender Management | ✓ A Gender Policy Statement |
| | Plan (Including GBV) | ✓ Code of conducts for workers and special code for drivers, operators and security guards on GBV |
| | | Sensitization of workers and community on GBV |
| | | ✓ Identification of any violations |
| | | ✓ Clear protocols for management of any GBV cases attributed to the project |
| | | Tracking and reporting of child rights abuses |
| 9. | Stakeholder Engagement Management Plan | ✓ Overarching framework for all stakeholder engagement- related activities |
| | | ✓ Stakeholder identification; |
| | | Stakeholder engagement program |
| | | Monitoring and reporting |
| 10. | Security Management Plan | ✓ the security measures, particularly for the inundation phase of the Project |
| | | ✓ Access control, registration, security briefings, involvement of LC and Uganda Police, fencing of construction section in the vicinity of settlements or communities). |
| 11. | Risk Management Plan | ✓ Job and hazard specific risks identified |
| | | Risk management strategies established and implemented |
| | | Risk tracking and reporting |
| 12. | Reporting Plan | ✓ Nature of reports (daily, weekly, monthly, quarterly) |
| | | ✓ E&S Audit Reports |
| | | Reviews and validation by Supervising Consultant |
| | | Approvals and validation by Client |
| | | Monitoring checklists |
| | | ✓ Reporting templates |
| 13. | HIV management Plan | ✓ Increase community awareness about the health risks associated with HIV/AIDS; |
| | | Complement existing HIV/AIDS programs in the project area; and |
| | | Raise the profile and dangers of other STDs associated with risky sexual behavior. |
| | 9. | Plan (Including GBV) 9. Stakeholder Engagement Management Plan 10. Security Management Plan 11. Risk Management Plan 12. Reporting Plan |

Some of above mentioned plans are presented in detail below;

9.4.1 Risk management Plan

Purpose of the Risk Management Plan

A risk is an event or condition that, if it occurs, could have a positive or negative effect on a project's objectives. Risk Management is the process of identifying, assessing, responding to, monitoring and controlling, and reporting risks. This Risk Management Plan defines how risks associated with this Water Supply and Sanitation Project will be identified, analyzed, and managed. It outlines how risk management activities will be performed, recorded, and monitored throughout the lifecycle of the project and provides templates and practices for recording and prioritizing risks by the Risk Manager and/or Risk Management Team.

Risks related to Water supply and sanitation systems must be identified and documented based on the methodology in this plan. Appropriate protective measures must be taken to safeguard sensitive ecosystems or other environmental weaknesses or vulnerabilities from unauthorized disclosure.

Risk Management Procedure

The project manager working with the project team and the funder will ensure that risks are actively identified, analyzed, and managed throughout the project lifecycle. Risks must be identified as early as possible in the project in order to minimize their impact. The steps for accomplishing this are outlined in the sections below. The client (MWE) will serve as the Risk Manager for this project.

| Role | Responsibilities |
|---|--|
| Risk Manager or Project Manager (PM) | The Risk Manager or PM is a member of the Integrated Project Team (IPT). The Risk Manager or PM determines if the Risk is unique, identifies risk interdependencies across project, verifies if risk is internal or external to project, assigns risk classification and tracking number. During the project lifecycle, they continually monitor the projects for potential risks. |
| Integrated Project Team | The IPT is responsible for identifying the risks, the dependencies of the risk within the project, the context and consequence of the risk. They are also responsible for determining the impact, timing, and priority of the risk as well as formulating the risk statements. |
| Risk Owner(s) | The risk owner determines which risks require mitigation and contingency plans; he/she generates the risk mitigation and contingency strategies and performs a cost benefit analysis of the proposed strategies. The risk owner is responsible for monitoring, controlling, and updating the status of the risk throughout the project lifecycle. The risk owner can be a member of the project team. |
| Other Key Stakeholders | The other stakeholders assist in identifying and determining the context, consequence, impact, timing, and priority of the risk. |

Table 63: ROLES AND RESPONSIBILITIES

Risk Identification

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Risk identification involves the project team, appropriate stakeholders, and an evaluation of environmental factors, organizational culture and the project management plan including the project scope, schedule, cost, or quality. Careful attention will be given to the project deliverables, assumptions, constraints, cost/effort estimates, resource plan, and other key project documents.

Methods for Risk Identification

The following methods will be used to assist in the identification of risks associated with the proposed Nyamugasani WSS Project.

- Brainstorming
- Interviewing
- SWOT (Strengths, Weaknesses, Opportunities and Threats)
- Diagramming

A Risk Management Log will be generated and updated as needed and will be stored or kept at the site at all times.

Risk Analysis

All risks identified will be assessed to identify the range of possible project outcomes. Risks will be prioritized by their level of importance. There are two types of risk analysis that will be considered in this project;

• Qualitative Risk Analysis

The probability and impact of occurrence for each identified risk will be assessed by the project manager, with input from the project team using the following approach: **Probability**

- High Greater than <70%> probability of occurrence
- Medium Between <30%> and <70%> probability of occurrence
- Low Below <30%> probability of occurrence

Impact

- High Risk that has the potential to greatly impact project cost, project schedule or performance
- Medium Risk that has the potential to slightly impact project cost, project schedule or performance
- Low Risk that has relatively little impact on cost, schedule or performance.

Risks that fall within the RED and YELLOW zones will have risk response plan, which may include both a risk response strategy, and a risk contingency plan.

• Quantitative Risk Analysis

Analysis of risk events that have been prioritized using the qualitative risk analysis process and their effect on project activities will be estimated, a numerical rating is applied to each risk based on quantitative analysis, and then documented in this section of the risk management plan.

Risk Response Planning

Each major risk (those falling in the Red & Yellow zones) will be assigned to a risk owner for monitoring and controlling purposes to ensure that the risk will not "fall through the cracks". For each major risk, one of the following approaches will be selected to address it:

- Avoid Eliminate the threat or condition or to protect the project objectives from its impact by eliminating the cause
- **Mitigate** Identify ways to reduce the probability or the impact of the risk
- Accept Nothing will be done
- **Contingency** Define actions to be taken in response to risks
- Transfer Shift the consequence of a risk to a third party together with ownership of the response by making another party responsible for the risk (buy insurance, outsourcing, etc.)

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For each risk that will be mitigated, the project team will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc. Any secondary risks that result from risk mitigation response will be documented and follow the risk management protocol as the primary risks.

For each major risk that is to be mitigated or that is accepted, a course of action will be outlined in the event that the risk does materialize in order to minimize its impact.

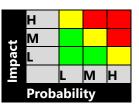
Risk Monitoring, Controlling, And Reporting

The level of risk on a project will be tracked, monitored, controlled, and reported throughout the project lifecycle. Risks will be assigned a risk owner(s) who will track, monitor and control and report on the status and effectiveness of each risk response action to the Project Manager and Risk Management Team.

A "Top 10 Risk List" will be maintained by the PM/Risk Manager or IPT and will be reported as a component of the project status reporting process for this project. All project change requests will be analyzed for their possible impact to the project risks. As Risk Events occur, the list will be re-prioritized during weekly reviews and risk management plan will reflect any and all changes to the risk lists including secondary and residual risks. Management will be notified of important changes to risk status as a component to the Executive Project Status Report every two weeks

The Risk Manager (PM) will:

- Review, reevaluate, and modify the probability and impact for each risk item as needed and every two weeks
- Analyze any new risks that are identified and add these items to the risk list (or risk database).
- Monitor and control risks that have been identified
- Review and update the top ten risk list every two weeks.



Escalate issues/ problems to management if need be.

The Risk Owner will:

- Help develop the risk response and risk trigger and carry out the execution of the risk response, if a risk event occurs.
- Participate in the review, re-evaluation, and modification of the probability and impact for each risk item on a weekly basis.
- Identify and participate in the analysis of any new risks that occur.
- Escalate issues/problems to PM that,
 - Significantly impact the projects triple constraint or trigger another risk event to occur.
 - Require action prior to the next weekly review
 - Risk strategy is not effective or productive causing the need to execute the contingency plan.

Risk Contingency Budgeting

A risk contingency budget can be established to prepare in advance for the possibility that some risks will not be managed successfully. The risk contingency budget will contain funds that can be tapped into so that your project does not go over budget. There will be 10,000,000 UGX in the proposed Nyamugasani WSS project budget allocated for Risk Management activities. These activities may include, but are not limited to, identifying, analyzing, tracking, controlling, managing, and planning for risks. This also includes creating and updating the risk response strategies and contingency plans.

Tools and Practices

A Risk Management Log will be maintained by the project manager and will be reviewed as a standing agenda item for project team meetings. Risk activities will be recorded and the records kept.

Closing a Risk

A risk will be considered closed when it meets the following criteria: Examples:

- Risk is no longer valid
- Risk Event has occurred
- Risk is no longer considered a risk
- Risk closure at the direction of the Project Manager

9.4.2 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, and 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.

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 contactor's Sociologist and Other Safeguard staff for engagements clearly stating the location, topics and dates.

9.4.3 Occupational Health and Safety Management Plan

The main goal of Occupational Health and Safety management is to promote a safe and secure environment through careful identification and management of hazards. It seeks to facilitate and empower community, workers and managers at all levels to participate in the avoidance, minimization and complete eradication of accidents and diseases associated with unsafe and insecure workspaces

The safety and health plan is designed to achieve the following specific objectives;

- a) Achieve Zero reporting of accidents throughout the construction phase of the project components;
- b) Monitoring the area for exposure and incidences of occupational injuries and diseases among all categories of the communities; and
- c) Operate a flexible and quick response system to sensitization of the staff and host communities on potential risks/hazards and OHS procedures during construction; thus, instilling a culture of responsibility and accountability on Safety and Health.

A safety committee comprising of construction managers, Water Source Committees EHS Managers, NWSC representative, UNRA representatives and any other stakeholders in the area with interest in monitoring the reservoir and source water levels. The OHS plan is a living document that will be updated in consultation with all concerned stakeholders, the client (MWE) and NWSC. Periodic audits both internal and those commissioned by regulatory agencies shall also inform periodic updates of the health and safety plan.

The contractor shall ensure the following;

a) Risk assessment and Management

The contractor shall undertake risk assessment as a way of estimating health and safety risks from being in proximity of the reservoir area. Understanding how much risk the reservoir poses to the community will help the contractor devise appropriate measures to eliminate, control, and reduce those risks. This risk assessment will answer three basic questions:

- What can happen?
- How likely is it to happen?
- What are the consequences if it does happen?

The contractor shall identify the risks associated, propose and implement measure to avert these risks and mitigate the impacts.

b) Health and safety reporting and audits

- 198 The OHS officer shall produce monthly reports of the situation around the reservoir. 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;
 - a. Induction training carried out
 - b. Health and safety talks conducted
 - c. Incident statistics categorized where possible
 - d. Fatalities on the reservoir by section If any
 - e. Near miss records
 - f. Notifiable incidences
 - g. Disbursement and use of PPEs (if any)
 - h. External inspections and their outcomes (If any).

c) 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 and the EHS Management team is to facilitate and coordinate the reporting, recording and investigation of all OHS incidents by:

- a) Receive all notifications of incidents/accidents and ensure proper response is being followed including reporting, investigations and review.
- b) Once aware of an emergency, the response coordinator shall take the following actions:
 - Contact or communicate with emergency services
 - Coordinate activities of all personnel in the emergency response team and monitor its effectiveness
 - Inform the Contract Manager or Site Manager of the emergency
 - Coordinate the activities of all personnel in the emergency response team and make further directions as required by the situation;
 - Inform the team, Contract Manager and Site Manager of the end of the emergency situation

- c) Maintain the Project Emergency Response Plans and associated processes;
- d) Display names and contacts of personnel to be reached out in case of emergences
- e) Provide the incident report, and actions being taken to prevent reoccurrence
- f) Coordinate training requirements for the emergency response team and all other site personnel.
- g) Ensure that adequate emergency response information and instructions are provided in trainings and inductions;
- h) Undertake planned inspections to ensure emergency response equipment and facilities are complete;

d) Emergency Preparedness and Response Plan

The reservoir operations could pose a risk to life in the project area and based on the current level of development in the upstream and downstream areas, an Emergency Action Plan must be developed and submitted to the Dam safety office for review and acceptance before project operation can be initiated.

The plan applies to all forms of emergencies and incidents that have or are likely to occur or cause serious injury, and/or grave damage to the environment or property. It covers all aspects, activities and sites of the project. These include:

- a) Site clearance
- b) Construction of the reservoir and source areas
- c) Establishment equipment yards,
- d) Establishment of disposal areas
- e) 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 Safety Officer. While all incidents shall be reported in the monthly E&S report, all serious incidents shall immediately be reported to the Safety Officer, who also reports to the Site Engineer/Manager at the contractor's offices.

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9.4.4 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 project 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.

9.4.5 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 site 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.

9.4.6 HIV Prevention and Mitigation Plan

During the project ESIA process, one of the key concerns raised by all the consulted community members was the issue of increased HIV/AIDS and STD infections associated with project construction. It clearly emerged that the influx of project workers in search of job opportunities as well as the establishment of facilities like the workers' camps would increase the rate of new HIV/AIDS infections, and thus exacerbates the already bad HIV/AIDS situation in the project area. To mitigate against this threat, the ESMP prescribed a package of preventive measures including a comprehensive AIDS/HIV sensitization program to be implemented during project construction.

The **CONTRACTOR** will, therefore, undertake sensitization of project workers and the local communities about the dangers and the health risks associated with the HIV/AIDS pandemic and other STDs in the project area. In addition, other HIV-related prevention activities such as voluntary testing and counselling as well as availability of protective devices will be supported.

Experienced HIV/AIDS trainers in partnership with a local CBO or NGO will facilitate the trainings with a strong grass root presence in the project area. Community workshops will be held at strategic venues in the project area. Awareness materials, factsheets and flyers will be distributed during the workshops.

The trainings for project workers will be conducted separately, by experience. Awareness materials, factsheets and stickers as well as AIDS preventive devices will be given out during the period the workers will be engaged.

Several other measures will be adopted as part of a wider scheme to reduce HIV/AIDS infections, and these include:

- No workers' camps will be maintained by the CONTRACTOR or any of its sub-contractors. The majority of the workers will be hired from the communities and will be expected to stay in their respective homes during project construction.
- No idlers, uninvited visitors and prostitutes will be allowed in the field, at site offices and at the Equipment's Storage Yard.
- Voluntary testing of workers and of communities will be encouraged. Efforts to link those infected, to TASO will then be made.
- AIDS counselling services for both workers and the communities will be supported by the project.

A code of conduct for all workers of The **CONTRACTOR** and its sub-contractors not to allow them engage in actions that are likely to create disharmony and conflict with the communities. Elopement with married wives, peoples' daughters and schoolchildren is strictly prohibited.

9.4.7 Quality Management Plan

The Quality plan sets out the Management procedures/ practices and describes the Quality Management System of the project by the Contractor. The Objective of the PQP is to provide adequate confidence and ensure that the facilities included in the project scope are safe, reliable, efficient, fully satisfying their intended purpose and are built in accordance with specifications with a minimum rework and repair so that the water supply system performs satisfactory in service. Project objectives also include, but are not limited, to:

- Design and planning of durable, dependable and high-quality infrastructure that will meet the specified design life and provide service after delivery as agreed by the client.
- Ensuring the Client's satisfaction by delivering the project on time and within budget.
- Implementing an auditable systems approach to all work under the contract, by using documented methods and procedures, inspection and test plans, risk assessments, etc.

• Maintaining visible commitment to quality and HSE process improvement at the highest management level, throughout the project life cycle and management reviews conducted by top management

Ensuring regular quality and HSE training for the personnel throughout the duration of the project.

QUALITY ROLES AND RESPONSIBILITIES

Project manager (PM):

The Project Manager is responsible for implementing the Quality Control Plan. In the case of the proposed Nyamugasani WSS, the Project Manager will be the supervising Consultant who will be hired by MWE to carryout extensive supervision of works. Specifically, the Project Manager will do the following to implement the Quality Control Plan:

- Coordinate and lead the quality control process.
- Assign qualified professionals to perform project tasks and activities.
- Ensure all professionals involved in performing project tasks and activities have a clear understanding of the scope and objectives of the project.
- Ensure all professionals involved in the project are aware of the project schedule and follow it.
- Ensure all professionals working on the project have a clear understanding of the project requirements and provisions for work.
- Document the quality control process properly.
- Certify that quality control procedures have been properly followed.
- Responsible for ensuring preparation of project schedules, implementation through team, review periodically and take necessary steps to achieve the same.
- Responsible for Risk identification, risk assessment & mitigation plan including review and update.
- Establish effective communication system to ensure required information reaches to team 201
- Responsible for correspondences with client / contractor and attend meetings, take necessary
 actions to implement the decisions.
- Additionally, the Project Manager, in collaboration with the Project Quality Manager, will:
 - Ensure sub-contractors follow this Quality Control Plan or a similar plan
 - Schedule document reviews and ensure all comments from these reviews are resolved prior to submitting the deliverables to the MWE
 - Evaluate the final products and ensure the deliverables meet the objectives of the project
 - Ensure the plans/reports are reviewed for consistency between disciplines and that there is communication among the quality control staff
 - Improving Client satisfaction including handling project complaints
 - Responsible for successful completion, handing over of project and obtaining completion certificate.

Quality Assurance (QA) /Quality Control (QC) Manager

The Resident Engineer also known as the QA/QC manager reports to Project Manager, and performs the following functions;

- Ensure establishment of Project Quality Plan (PQP), approval, issue & its implementation.
- Communicate customer requirements, Quality objectives & PQP to the team.
- Plan and conduct of internal audits as per schedule and corrective actions on time.
- Monitoring customer complaints and coordinate with respective dept. for analyzing root cause and corrective actions on time.
- Coordinate for external / customer audits including necessary corrective actions.
- Set up and monitor QA/QC activities.

- Prepare Bi-weekly / monthly site QA/QC report including reporting of any issues raised by auditor, root cause, corrective action status and submit to site company representative.
- Work with the project personnel to facilitate document control workflow, assist with formatting and ensure proper documentation.
- Ensure that any sub- contractors comply with the requirement of the approved contract quality plan, including all the sequential inspection operations.
- Coordinate and ensure inspection and tests of all subcontracted works as per spec., and method statement.

EHS Engineer / Officer / Manager:

Reporting to Project Manager and functionally to Head EHS, overall responsible for all EHS functions at site but not limited to:

- Disseminate and Communicate Contractor's EHS Management System requirements to all project personnel.
- Plan and conduct Internal EHS training programs, initiate drive to promote EHS awareness and performance in site with coordination of Safety Manager
- Carry out EHS inspection during field activities
- Creating EHS awareness through regular EHS meetings
- Convene EHS committee meeting & minute the proceedings for circulation & follow-up action.
- Responsible to ensure Risk identification, risk assessment & mitigation plan and implementation
- Guide site team for preparing Risk Assessment for the project activities.
- Conduct investigation of all accidents / dangerous occurrences and near misses & recommend appropriate corrective measures.
- Advice & co-ordinate for implementation of Work Permit Systems.
- Plan procurement of PPE & safety devices and inspect before use as per laydown norms.
- Promote EHS promotional program at site level.
- Monitoring, Analyzing & administration of First Aid.
- Conduct safety meeting with sub-consultants.
- Report to Head EHS on all matters pertaining to status of safety.
- Conduct Fire Drill, Procure, inspect and arrange to maintain Fire Extinguishers.
- Organize campaigns, competitions & other special emphasis programs to promote EHS in the workplace.
- Record, analyze and cascade lateral learning points from First Aid Cases, Near Miss Cases & Accidents to all project personnel and analyze the trends & effectiveness
- Maintain all EHS related documents.
- Update EHS training records

| Ref. No | Anticipated | Mitigation Measures | Responsibility | Monitoring | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|----------------------------|---|---|---|---|-------------------------------------|-----------|
| | Impacts | | | Period | | | |
| Cons | truction Phase | | | | | | |
| CP1 | Construction activities | ✓ Orienting all construction workers on safe work practices and ensure that they are adhered to | Contractor & Supervision Consultant | Ongoing | Routine inspection and maintenance records | Included in Contractor's cost | Daily |
| CP2 | Traffic Disruptions | Preparing a Traffic Management Plan to minimize the risk of traffic disruption, especially in areas where the major roads will require re-construction of culvert crossings. Using appropriate safety signs during construction (e.g. 'Heavy Trucks Turning', 'Road Diverted', 'Half Road Closed', etc.) | Contractor, Supervision consultant & Police | Throughout the Construction period | Presence of the Traffic Management Plan with the contractor and on site | Included in Contractor's cost | Daily |
| CP3 | Vegetation Removal | Minimize vegetation clearance and protect water & soils from pollution Landscaping and re-vegetation after construction Clearing of vegetation in the natural habitat (wetland areas) will be minimised or avoided. If this cannot be avoided, then restoration of areas not needed for permanent project activities will be done. Unnecessary human presence in the natural habitats and project site will be minimised; Invasive species if observed along the revegetation sites will be removed. Environmental awareness programs for the construction workers, with special focus on threatened species will be conducted. Hunting and poaching of wild life will be strictly prohibited. Prevention and minimization of pollution (e.g. noise, water) through strict implementation of planned pollution control measures will be exercised. | Contractor | Throughout the Construction period | Visual inspection of cleared areas and restored areas | 14,000,000 | Daily |

Table 64: Environmental Management and Monitoring Activities and Criteria

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|---------------------------------|--|--|---|--|--|-----------|
| CP4 | Soil erosion and degradation | Topsoil and subsoil will be stockpiled for re-use in backfilling and reinstatement; To preserve soil structure: there will be minimum handling of soils; loose tipping of soils, that is, without compaction will employed and temporary spoil heaps will not be higher than 3m; Contractor will avoid use of old equipment or even damaged equipment that is most likely to have oil leakages thus contaminate the soils; The contractor will be required to develop a waste management plan prior to start of construction activities; Contractor will ensure that equipment is properly maintained and fully functional in accordance with the manufacturer's recommendations; During reinstatement, the trench back-fill material will be compacted to a level similar to the original surrounding soils to avoid subsidence as a consequence of rain water channeling. Recreation of a stable landform that mirrors the pre-disturbed condition as this will minimise the risk of preferential erosion and therefore facilitate natural re-vegetation. Topsoil will be protected through separation from subsoil and storage in a manner that, as far as possible, retains the soil structure and minimises the risk of topsoil loss. The trench will be subsequently backfilled with subsoil, followed by topsoil. In order to prevent loss of fertility and degradation of the seed bank within stored topsoil (where present), the topsoil will be stored for as short a time as possible, allowing for engineering constraints. In the re-establishment of the pre-construction condition, vegetation cover particularly the variety and distribution pattern of plant species that existed before will be used. Wherever practical, the subsoil will be graded during reinstatement to reflect the original profile across the working width and all other construction areas. In steep areas with highly erodible soils, the ground will be carefully profiled to ensure that the | Contractor, Supervision Consultant & MWE | Throughout the Construction period | Evidence of sedimentation of eroded soil downstream of construction site. Number of complaints from neighboring communities regarding deposition of eroded soil. | Included under Ref. No. CP3 above. | Daily |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|---|--|--|---|---|-------------------------------------|-----------|
| CP5 | Flow Diversions during construction | ✓ Phasing of the construction works such that the majority of works are undertaken during the dry season to reduce the risk of erosion. ✓ The Contractors will use best available methods of construction to minimize the risk of blockages and constrictions during construction. Some of the methods that can be employed for channel diversion. | Contractor & Supervision Consultant | Throughout the Construction period | Occurrence of flooding in Project area during construction period | Included in Contractor's cost | Daily |
| CP6 | Generation of Wastes | The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reuse and recycle. A waste management plan should be developed by the Construction Contractors, and approved by MWE to ensure that measures for handling all Project-generated waste are in place. Waste transportation vehicles will be covered to avoid spillage or waste getting blown off during haulage. Construction waste shall not be left in stockpiles along roads, but removed and reused or disposed of on a regular basis. Human waste will be properly managed through provision of onsite portable toilets, with consideration for the number of workers on site during construction. Separate toilets will be provided for female workers. Any hazardous wastes generated by construction activities (e.g. emptying pit latrine contents) will be collected and transported off site to the appropriate licensed waste storage facility | Contractor, Supervision Consultant & MWE | Throughout the Construction period | Submitted waste management plan with adequate acceptable measures. Records from licensed waste contractor with logs on source of waste, weight, final destination of waste, handling of waste at final disposal point. | Included in Contractor's cost | Daily |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|--|--|--|---|---|------------|-----------|
| CP7 | Accidents and Construction hazards | Preparation and approval of a Health and Safety Plan that sets out the measures to be taken to ensure the safety of the workers and the local community during the works. Orient all construction workers on safe work practices and ensure that they are adhered to. Safety training will be conducted routinely on how to prevent and manage incidences on site, and measures to protect the general public from construction site hazards Use of PPE for different work environments. Procedure for reporting and/or responding to incidents. Emergency evacuation procedure All tasks will be performed by qualified and authorized personnel. | Contractor, Supervision Consultant | Throughout the Construction period | Records of incidents and accidents on site. Observance of site safety rules by workers. Use of requisite PPE by workers. Response to emergency incidents on site. Availability of first aid kits on the various sites. | 35,000,000 | Daily |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|------------------------------|--|--|---|---|------------|-----------|
| CP8 | Air quality and pollution | Sensitization of local residents will be undertaken prior to the start of the construction works. Delivery vehicles will be switched off when not in use so as to minimize the release of fugitive emissions; Contractor's vehicles and machinery will be regularly serviced and maintained to optimum working conditions to minimize potential emissions. Trucks delivering materials will be covered with tarpaulin to reduce the risk of fugitive dust emissions, especially in busy residential and commercial areas; Waste from site to be transported by licensed companies for waste transportation Regularly monitor air quality and noise nuisance and inform timely interventions | Contractor, Supervision Consultant & MWE | Throughout the Construction period | Number of complaints of excessive fumes or dust registered. Levels of dust and fugitive emissions released to the atmosphere as a result of construction activities | 25,000,000 | Daily |

| | Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|-----|------------|-----------------------------------|--|---|---|--|-----------------------|-----------|
| | CP9 | Noise Pollution and Vibrations | Sensitisation of local residents prior to the start of the construction works. It will be particularly important to: The Contractors on site made aware of, and adhere to, the regulatory noise limits for a construction site Construction workers provided with appropriate PPE such as ear plugs and ear muffs for protection against excessive noise. Construction activities limited to daytime, especially in residential areas to minimize disturbance of residents. Construction works near public institutions such as schools should be harmonized with school programmes to consider works during holidays and weekends. Project machines and vehicles will be turned off when not in use. | Contractor, Supervision Consultant & MWE. | Throughout the Construction period | Number of complaints of excessive noise and vibration. Routine inspection and maintenance records | Provided under CP8 | Daily |
| 208 | | | | | | | | |
| | | | | | | | | |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|------------------------|---|---|---|--|-------------|-----------|
| CP10 | Water Pollution | Planning and management of stockpiles to minimize potential for "wash-out" and generation of sediment-laden runoff during rainy seasons. Fuel handling and oil spill measures will be implemented to prevent, control and address spill or leaks. All equipment and vehicle repairs will be carried out under shelter to minimize potential soil and oil pollution during rainy seasons. Regular maintenance of operating machinery to keep it in good working condition, and hence minimize oil and lubricant spills Implement a water source protection plan (WSPP) | Contractor, Supervision Consultant & MWE. | Throughout the Construction period | Occurrences of impediment to water flow, especially in wetland areas | 110,000,000 | Monthly |

| Ref. No Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|-----------------------------------|--|---|--|---|------------|-----------|
| Public Health Issues | All Contractors shall be required to develop guidelines for behavioral conduct, including penalties. This should be reflected either as independent document or component to the Contractor's Human Resource Manual Workers must be sensitized on proper social behaviour and conduct with regard to community norms prior to starting work; workers should be sensitized to avoid engaging in sexual relations with underage girls and married women; In case of misunderstandings between workers and the local community, use of local leadership should always be sought as a first priority in solving these issues; Similarly, in liaison with local leaders, contractors should prepare local communities – psychologically and otherwise – for the newcomers; efforts be focused on instilling attitudes of tolerance, support and understanding towards the newcomers in the local communities Contractors will be required to have an HIV/AIDS policy and a framework (responsible staff, action plan, etc.) to implement during Project execution. This will include a reporting procedure in the event that the community members have any issues to report as a result of the Project workers' behavior and/or negligence. All construction workers will be orientated and sensitized about responsible sexual behavior with Project area communities and inherent health risks associated with HIV/AIDS and other sexually transmitted diseases. As part of their Corporate Social Responsibility, the Contractor in coordination with MWE will conduct HIV/AIDS awareness campaigns in the Project areas, particularly in slum areas, to avoid reckless lifestyle and spread of the disease in the area. HIV/AIDS policies should be developed at workplace and Contractors should provide Free HIV/AIDS testing, counselling and condom distribution for both workers and local community; | Contractor, Supervision Consultant & MWE. | Throughout the construction phase | Guidelines for behavioral conduct, and No. of penalties awarded to workers for misbehavior | 16,000,000 | Monthly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|--|--|--|---|---|--|-----------|
| CP11 | Disruption of Socio-economic Activities and utility services | Project implementation will be done in close consultation with the respective utility service companies such as MWE, UMEME and telecommunication companies. All identifiable utility service lines in the right of way will be relocated in the pre-construction phase prior to the commencement of works to avoid interruptions from damage during the construction phase. During construction, the Contractor will have to prepare a work schedule, which will be closely monitored and supervised by MWE. The communities to be affected by any interference in service provision (water, electricity, or telecommunication signals); will be given ample warning and alternatives provided by service provider. | Contractor(s) /MWE and service providers | Before construction phase kicks off | All the utility service lines in the right of way are relocated and communities are informed in advance, Recorded number of service infrastructure damaged as a result of Project implementation. Number of complaints recorded from community members regarding interference with service infrastructure due to Project activities. | 8,000,000 | lumpsum |
| C12 | Land acquisition and resettlement | Prepare and implement the RAP in line with Ugandan laws and the World Bank's ESS5; Engage local communities to provide land voluntarily especially for the distribution lines; Select land requiring minimal or no relocation at all; Use road reserves for pipe works; Provide a fair and prompt compensation to the affected people; Determine the extent of property lost or destroyed and provide fair and prompt compensation to the effected people. Engage spouses / female relatives of land owners especially to consent / witness. | MWE | Before construction phase kicks off | Valuation Report approved by Chief Government Valuer; Number of people compensated or resettled; Amount of money paid in compensation; No land related complaints; All PAPs compensated for involuntary land up-take before commencement of construction works. | TBD by the RAP Cost Elements The detailed Budget will be provided in the RAP. | Monthly |
| C13 | Risk of misinformation due to failure to engage stakeholders | ✓ Prepare a comprehensive Stakeholder Engagement Plan (SEP); ✓ Community liaison activities; ✓ Undertake radio talk shows to communicate progress of the project to local stakeholders. | Contractor(s) /MWE and service providers | Before and during construction | Number of engagement meetings for each stakeholder category Number of radio shows held. | 100,000,000 Cost Elements 1. Engagement at local and district level 2. Routine monitoring and reporting | Monthly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|--|--|-----------------|------------------------|---|---|-----------|
| C14 | Structures and utilities within the road reserve to be demolished | MWE should provide adequate vacation notice (according to regulatory requirements, this is three (3) or six (6) months) to affected people before construction commences. This will also allow affected property owners to plan appropriately or take any salvageable material from their demolished structures without delaying contractor's work. MWE to engage the Rural Electrification Agency/ Uganda Electricity Distribution Company Limited (UEDCL), UMEME and their contractors as well as private companies (MTN, UTL, etc.) to temporarily relocate their utilities to enable civil works for the T/Line. MWE should institute a strong grievance committee so that complaints and dissatisfactions about the resettlement/ compensation process do not unduly delay contractors progressing works. Liaise closely with UNRA regarding any claims to ownership of land within the road reserves. | | | All eligible persons duly compensated as per the laws of Uganda; All utility owners engaged to relocate utilities prior to construction works. Relocation budgets submitted by utility owners and approved by MWE; All utilities relocated before construction works; No. of utilities damaged. | RAP Budget provided for eligible PAPs | Monthly |
| C15 | Conflicts due to influx of immigrant labour | Prepare local communities psychologically prior to start of construction works. Efforts to be geared toward instilling attitudes of tolerance, support and understanding of labour immigrates by the local communities Sensitize workers on proper social behaviour and conduct with regard to community systems and the acceptable societal norms; Put in place a grievance redress committee or a Public Complaints Desk to receive any complaints about the construction activities; Implement a strict employment code of conduct. | MWE/ Contractor | Before construction | No. of grievances received % of grievances resolved Records of sensitization of local communities regarding social issues Number of cases of community fears/complaints handled in relation to cases reported | UGX 120,000,000 Cost Elements - Training Grievance Redress Committees - Grievance committee facilitation/ Monthly allowances | Monthly |

| Ref. No Antio Impa | cipated acts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|---------------------------|-----------------|--|---|------------------------|---|---|-----------|
| C16 Risk agair (VAC | | Develop a strict employment code of conduct to protect the girl child. Sensitize employees on dangers of molestation of children, especially the girl child. Sensitize the Contractor against child labour and implement the child labour act; Demand birth certificate or any identify that clearly shows the age of a job applicant; Issue each worker with an applicant letter with well spelt out terms of engagement. Monitoring school attendance Sensitization in schools Reporting mechanisms in place such as a whistleblowing system. | Contractor's Sociologist Resident Engineer MWE | During Construction | MGLSD approved code of conduct for protection of the girl child at site. Records of sensitization of workers; Number of cases of child abuse lawfully handled in relation to cases reported; Complaints from communities Children working on site | UGX 200,000,000 Cost Elements - Train personnel on violence prevention and response - Develop content on violence prevention against children in different languages - Disseminate the child protection information to strategic areas in the communities - Develop content on Gender based violence prevention in different languages - Design and develop IEC materials - Monitoring and reporting | Monthly |

| Ref. No Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|-------------------------------------|---|---|------------------------|---|---|-----------|
| C17 Risk of Gende Based Violence | The Contractor should have a sexual harassment policy and mainstream it to ensure strict adherence to established mechanisms to avoid the emergence of these challenges; MWE should ensure that social safeguards personnel are recruited as part of the project implementation personnel to supervise contractors and to continuously engage communities; Put GBV reporting mechanisms in place; Community sensitization among men and women. Train women in GBV prevention and reporting. Contractor develops and implements a Gender Action Plan (GAP). | Contractor's Sociologist Resident Engineer MWE | During Construction | Contractor's GBV Plan approved by MWE No. of IEC material disseminated Proof of disseminating IEC materials in community and other key strategic points | UGX 150,000,000 Cost Elements - Develop GBV Management Plan. - Develop customized IEC materials. - Print and disseminate IEC materials. - Train personnel on violence prevention and response - Undertake quarterly GBV sensitizations | Monthly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|--|---|---|--------------------------------|---|---|-----------|
| C18 | HIV/AIDS risks | Sensitize workers on proper social behaviour and conduct with regard to community norms, HIV/AIDS and other sexually transmitted diseases. HIV/AIDS policies should be developed at the workplace. Free HIV/AIDS testing, counselling and condom distribution be encouraged for both workers, sex workers and local community. The pathways for transmission of HIV/AIDS and STIs are well known, foreseeable and can be mitigated. Social bonds are not readily controlled, and the permanence of HIV/AIDS transmission makes this particular impact of social bonding both negative and also positive. Social bonds leading to lasting marriages and children occur in such situations; early pregnancies and sexual exploitation can also occur. It is therefore important to tackle the issue of social bonding with firmness and fairness, forbidding powerful relationships, which lead to exploitation of mostly women and children, while encouraging relationships that may lead to permanent situations. | Contractor's Sociologist Resident Engineer MWE | During Construction | Contract signed with a Nominated Service Provider (NSP) Number of sensitization meetings Number of VCTs Number and type of condoms distributed | UGX 250,000,000 Cost Elements - Develop HIV/AIDS Management Plan. - Develop customized IEC materials. - Print and disseminate IEC materials. - Undertake quarterly HIV/AIDS sensitizations and VCT - Distribute free condoms on a continuous basis Periodic monitoring of HIV/AIDS status. | Monthly |
| | | OPERATIONAL PHASE | | | | | |
| OP1 | Occupational Health and Safety Risks | The channel crossings will be clearly demarcated to indicate the ones that are meant for only pedestrian traffic, those that can be used by bicycles and motorcycles and general traffic. The crossings for only pedestrians should have bollards with reflective strips installed at the ends to strict access to other traffic. Side rails will be installed along the channel crossings to enhance community safety and minimize the risk of falling into the channels. Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a | Operator | Throughout the O&M phase | Number of complaints registered from community about potential hazards as a result of Project activities. Records of incidents amongst community residents as a result of Project activities. | | Monthly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|---|---|----------------|--------------------------------|--|---|-----------|
| | | heavy downpour. ✓ Community sensitization to instill a sense of ownership of the project and project infrastructure so as to encourage community vigilance and hence reduce vandalism or theft of metal work fabrication, such as safety railings. | | | | | |
| OP2 | Loss of income from Project- related activities | All people taken on to work on this Project will be informed about its duration and phasing beforehand, so that they can plan accordingly. The MWE Supervising Engineers will take note of Consultants, Contractors and sub-contractors that produce quality work, in line with their contracts and industry best practice during the construction phase, and prioritize them for available maintenance work during the life of the Project. Unskilled labourers taken on from the local communities surrounding the project area will be kept on for maintenance works of the channel, where possible. Where feasible, upon discussion with the local area leaders, committees will be selected along the densely populated sections along the channel with the aim of promoting vigilance against garbage. | Operator | Throughout the O&M phase | Number of O&M workers from the local communities | Included in the MWE annual operational budget | Annually |
| OP3 | Risk of accidents | Side rails will be installed along the river crossings to enhance community safety and minimize the risk of falling into the river. Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a heavy downpour. Community sensitization to instil a sense of ownership of the project and project infrastructure so as to encourage community vigilance and hence reduce vandalism or theft of metal work fabrication, such as safety railings | Operator | Throughout the O&M phase | Number of complaints registered from community about potential hazards as a result of Project activities. Records of incidents amongst community residents as a result of Project activities | Included in the MWE annual operational budget | Monthly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|---|---|----------------|--------------------------------|---|---|-----------|
| OP4 | Air pollution | ✓ The vehicles will be switched off when not in use so as to minimize the release of fugitive emissions. ✓ The vehicles and machinery will be regularly serviced and maintained to optimum working conditions to minimize potential emissions. | Operator | Throughout the O&M phase | Number of complaints of excessive fumes registered. Levels of emissions released to the atmosphere as a result of faulty equipment. | Included in the MWE annual operational budget | Weekly |
| OP5 | Disturbance due to noise pollution and vibrations | The Contractors and workers for operation and maintenance should be especially mindful when carrying out construction near sensitive receptors such as business centres. Maintenance activities will be limited to daytime, especially in residential areas to minimize disturbance of residents. Regular care and maintenance of vehicles and equipment must be undertaken to ensure they run smoothly so as to minimize emissions of noise. Project machines and vehicles will be turned off when not in use | Operator | Throughout the O&M phase | Number of complaints of excessive noise registered. Noise level measurements | Included in the MWE annual operational budget | Weekly |
| OP6 | Improper waste management | A waste management plan will be developed by the Maintenance Contractors, and approved by MWE to ensure that measures for handling all operation and maintenance waste (dredged material and waste debris) are in place. The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reduce, reuse and recycle Waste transportation vehicles will be covered to avoid spillage or waste getting blown off during haulage. | Operator | Throughout the O&M phase | Number of complaints of dumping Project waste in unlicensed areas registered Sediment and waste debris deposition in the wetlands and receiving water bodies | Included in the MWE annual operational budget | Weekly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|---|--|-----------------------------|--------------------------------|---|---|-----------|
| OP7 | Impact on water resources and the receiving habitats | The quantity and quality of storm water reaching the river must be reduced within the catchment. Implementation of an integrated catchment management plan (ICMP) would be an effective undertaking. The designed channel corridors need to be protected from encroachment. The channels must be regularly and adequately maintained – including replacement of damaged lining, vegetation clearing, de-silting, garbage/debris removal and dredging. MWE will closely engage NEMA and WMD in programmes aimed towards protection of natural wetland systems, since the storm water from the drainage channel will have an impact on the downstream receiving bodies. | Operator | Throughout the O&M phase | Monitoring locations water quality trends (water quality tests). Waste collected from the channel as wet earth materials shall be temporarily stockpiled at a gazetted location around project site to drain before they are transported to the final disposal site | 18,000,000 | Monthly |
| OP8 | Traffic Disruptions | ✓ Preparing a Traffic Management Plan to minimize the risk of traffic disruption, especially in areas where the major roads will require re-construction of culvert crossings. Using Appropriate safety signs during construction (e.g. 'Heavy Trucks Turning', 'Road Diverted', 'Half Road Closed', etc.) | Operator | Throughout the O&M phase | Traffic incidences | - | Monthly |
| OP9 | Management of grievances; Complaints from affected persons about the project in general, its staff and contractors like GBV, VACs, inequality, abuse of workers' rights, destruction of property among others | ✓ Put in place a grievance redress mechanism to resolve any complaints and issues that may arise from the project | Part of contractor's bid | Throughout the project | Prescence of grievance log. Prescence of grievance reports No. of grievances received No. of grievances handled No. of forwarded grievances | Included in the project Supervision Fees | Monthly |

| Ref. No | Anticipated Impacts | Mitigation Measures | Responsibility | Monitoring Period | Monitoring Indicators | Cost (UGX) | Frequency |
|------------|--|--|--|---------------------------|---|-------------------------------------|-----------|
| OP10 | Risk of misinformation due to failure to engage stakeholders | ✓ Prepare a comprehensive Stakeholder Engagement Plan (SEP); ✓ Undertake radio talk shows to communicate progress of the project to local stakeholders. ✓ Community liaison activities | Contractor MWE project staff MWE project staff | Throughout the project | Developed and adhered to Stakeholder Engagement Plan No. of radio talk shows held Monthly reports on community liaison meetings | 5,000,000 4,000,000 2,000,000 | Monthly |

CONCLUSION AND RECOMMENDATIONS

NWSSS is being proposed by the Ministry of Water and Environment/DWD for the seven (07) Sub Counties in Kasese district. This is envisaged to bring an end to water stress and overreliance on a few low yielding boreholes within the project area of the seven (07) Sub-Counties and neighbouring community. It is also believed that, the area experiences scarcity of safe clean water and high growing population. Further still, the project will also address the focal area of access to clean water as stipulated under the Uganda Vision 2040 and the National Development Plan III. The project also contributes towards achieving SDG (specifically SDG 6 on clean water and sanitation). Several beneficial impacts envisaged will include:

- Improved quality of water supplied to communities.
- Reliable water supply to the communities.
- Provision of employment opportunities during construction and operation phases.
- Improved health and sanitation due to improved water quality and quantity.
- Improved local economies and induced development especially sourcing of raw materials for construction activities and tree seedling growing business boost during operation phase.
- Small scale irrigation farming especially in vegetables and flowers since most household heads are involved in subsistence agriculture.
- 4 An increase in revenue for the sub counties from water project collections.
- Initiate the move away from the status quo of rural women and children's perpetual carrying of water on their heads from unprotected and distant point water source and allow them to engage in income generating activities and to improve the image of the woman and children.
- Improved image of the Sub Counties and parishes in terms of providing good services to its people hence more funding from potential funders.

However, the ESIA findings indicate that direct impacts will be fairly compassionate and limited to the project area where construction works will be undertaken. Direct negative impacts will include:

- Occupational Safety and Health hazards,
- Soil erosion during construction phase.
- 4 Destruction of vegetation and crops during construction phase.
- Increased noise nuisance during construction phase by workers and equipment.
- Increased sediment loads into the downstream beyond water sources especially during construction phase.
- +
- Improper disposal of cut out spoil and other construction wastes.
- ↓ Other concerns include HIV/AIDS risk associated with construction labour.

A RAP was undertaken to address all compensation issues that are anticipated and an ESMP has also been presented in the preceding Chapter to ensure positive impacts are enhanced while negative impacts are mitigated. Resettlement issues are not anticipated. The current designs did consider the need for a wastewater treatment plant. The water source being surface water based, a substantial amount of wastewater and sludge will be generated in sedimentation tanks thus there is need to put in place a wastewater treatment plant to enable wastewater to be treated before final disposal especially if water treatment chemicals are to be used.

During this ESIA study, comprehensive stakeholder consultations were conducted with relevant stakeholders and MWE/DWD will liaise with them to ensure effective implementation of the proposed mitigation measures for the anticipated negative impacts as indicated in the ESMP. MWE/DWD should work closely with the local leaders and Local Government to ensure smooth implementation of the EMMP and if impacts not contemplated during this ESIA arise, the management of DWD should

immediately address them in consultation with NEMA. If any other structures/ expansion not described in this report takes place, it will be considered separate and an ESIA Report/Project brief will be prepared by DWD or the Contractor and submitted to NEMA for approval before implementation.

The following mitigation measures should be considered as conditions of approval as they are regarded as being essential in so far as rendering potentially significant impacts acceptable. Implement the ESMP for all provided project phases with special attention being given on:

- Undertake Annual Environmental Audits and submit reports to NEMA.
- Haintaining good house-keeping through the duration of the construction phase.
- Screening unsightly aspects from public view including excavations (where practical), construction material storage areas, waste storage areas and ablutions.
- Erect fencing around construction sites to act as screens minimizing the effect of wind in generating dust emissions.
- The re-vegetation of all areas of natural vegetation with indigenous species that have been disturbed as a result of construction activities and maintain the 200m buffer zone.
- 4 Designation of construction materials and fuel storage areas.
- 4 Effective control of waste and containment of storm water especially during rainy season.
- H Implement dust suppression measures (use of water) when appropriate.
- **4** Train workers on issues of HIV/AIDS and child labour should not be permitted.
- Adhere to Occupational Health and Safety Act, 2006 provisions e.g. monitoring noise levels and provision of protective equipment to staff.
- At least 75 % (subject to availability) local labour from Kasese district should be used and 95% (subject to availability and skills levels) local contractors should be used.
- The Developer (DWD) monitors compliance together with stakeholder wide monitoring group comprising technical staff from local government institutions.
- Fencing is recommended in order to prevent contamination of the water source and for security of hydraulic structures and installations for the intake on Rivers Nyamugasani and Nyamuruseghe.
- 4 Prepare a water source protection plan for the catchment area of the water sources.

Therefore, the proposed NWSSS is environmentally and socially feasible for implementation provided the recommended mitigation and monitoring measures are implemented, and the proposed implementation arrangements are upheld.

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ANNEXES

Annexe 1. Approved Terms of Reference for ESIA by NEMA



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

NEMA House Plot 17,19 & 21, Jinja Road. P.O.Box 22255, Kampala, UGANDA.

Fax: 256-414-257521 / 232680 E-mail: info@nemaug.org

Website: www.nemaug.org

Tel: 256-414- 251064, 251065, 251068

342758, 342759, 342717

NEMA/ 4.5

9th December, 2022

The Permanent Secretary, Ministry of Water and Environment, P. O. Box 20026, KAMPALA. Tel: +256 (0)414-505942 Email: mwe@mwe.go.ug

> Attn: The Director, Directorate of Water Resources Management. Email: callist_tindimugaya@yahoo.co.uk

RE: REVIEW OF TERMS OF REFERENCE AND SCOPING REPORT FOR THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED NYAMUGASANI WATER SUPPLY AND SANITATION SYSTEM TRAVERSING AREAS OF KYONDO, MUHOKYA, MUNKUNYU, KISINGA, KYARUMBA, LAKE KATWE, KAHOKYA AND NYAKITONZI SUB-COUNTIES IN KINYAMASEKE, KISINGA, KYARUMBA, AND MUHOKYA TOWN COUNCILS, KASESE DISTRICT.

Reference is hereby made to the Scoping Report and Terms of Reference (TOR) to undertake an Environmental and Social Impact Assessment (ESIA) for the proposed Nyamugasani Water Supply and Sanitation System in Kasese District, that you submitted to this Authority for review and consideration. The review of the Scoping Report and TOR has been finalised and this Authority hereby grants formal APPROVAL.

Please, note that approval of the Scoping Report and TOR <u>DOES NOT GIVE</u> <u>YOU PERMISSION</u> to start implementing Project activities. In addition, you are advised to incorporate the following considerations during the conduct of the ESIA and preparation of the ESIA report.

(i) <u>Carrv out comprehensive consultations</u> with all relevant stakeholders and Lead Agencies and the persons likely to be affected by the project. The views/concerns of stakeholders consulted should be well documented and appended in the ESIA report.

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- (ii) Provide comprehensive strategies /compensation and resettlement plans, to cater for the identified project-affected persons, likely to lose property or source of livelihoods, among other aspects.
- (iii) <u>Make use of the revised environmental regulations that are now in force,</u> including the National Environment (Environmental and Social Assessment) Regulations, 2020; among others; and, ensure proper application/reference and citation of the new laws during the conduct of the ESIA and preparation of the ESIA report.
- (iv) Include in the ESIA report, clear, well-labelled and legible location/google maps, which also show presence of any sensitive receptors of project impacts within the vicinity of the project areas or sites that will accommodate the project components. Note that the google/ location map(s) will be included in the certificate of approval.
- (V) Provide concise baseline information/data relating to the projectaffected areas, and sets of clear coloured photographs showing the current state of the said project area (taken from within the proposed project site and clearly showing the neighbourhoods.
- (vi) Carry out baseline analyses of soil, water, and air quality, noise levels, as well as detailed geophysical and geotechnical studies to inform the proposed development, and append to the ESIA report the result of these analyses.
- (vii) Provide concise narrative on areas the project will traverse. Preferably <u>in tabulated format</u> – by names of villages, the parishes the villages fall under, sub-counties and town councils where the respective parishes are situated, and counties, respectively.
- (Viii) Provide in tabulated format the list of main project components and corresponding sets of GPS coordinates indicating the sites that will accommodate those main components / structure of the project.
- (ix) Provide detailed description of the different activities to be undertaken durng construction and operational phases of the project, and the size of the workforce.
- (X) Provide information on sources of water (whether a river, stream, among others) that will support the water supply and sanitation system.
- (Xi) Provide comprehensive evaluation of potential pollution sources, the methods of handling, containment and disposing of the different kinds of waste, and measures for controlling pollution of air. water and land as a result of project activities.

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- (Xii) Provide analyses of alternatives/options, in terms of project design, project location, and the proposed technology applications, among other aspects.
- (Xiii) Provide detailed evaluation of the potential environmental impacts and risks associated with the proposed project components and activities.
- (XiV) <u>Evaluate any cumulative impacts</u> that may arise due to implementation of the project in combination with other ongoing developments in the projectaffected areas, if any.
- (XV) Provide detailed environmental and social management and monitoring plan relating to the identified environmental impacts including monitoring requirements, roles and responsibilities of the developer, regulatory agencies and other key stakeholders.
- (xvi) Indicate the <u>actual project (investment) cost</u> including copy of the certificate of valuation issued by a certified professional valuer/quantity surveyor.
- (XVII) Provide evidence of payment of the 30% ESIA fees at the time of submission of the ESIA report, in accordance with Regulation 49 the National Environment (Environmental and Social Assessment) Regulation, S.I. No. 143 of 2020.

Furthermore, ensure that only registered EIA Practitioners including the team leader are contracted to carry out the ESIA; and, the team must include an expert in water quality and sanitation, occupational health and safety, and ecology assessments; and, the names of these experts should be included in the ESIA report.

This is therefore, is to recommend that you proceed with carrying out the ESIA for the proposed Nyamugasani Water Supply and Sanitation System traversing the above mentioned areas, in Kases District.

We look forward to receipt of a comprehensive ESIA report for, our further action.

Margaret Aanyu. FOR: EXECUTIVE DIRECTOR

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Annexe 2. Records/Minutes of Stakeholder Engagement

| No | Description |
|-------|---|
| Min 1 | Opening Prayer |
| | This was said by Jonathan Kavuma |
| Min 2 | Self-Introduction |
| | Members did self-introduction. Attendance list is attached |
| Min 3 | Communication from Ministry of Water and Environment (MWE) |
| | The Team Leader (Edrida Musinguzi) welcome all members and pointed out the following to the meeting: |
| | In 2019, The World Bank and Ministry of Finance Planning and Economic Development Agreed to support MWE in increasing Access to Water and Sanitation under the Integrated Water Management and Development Project (IWMDP). |
| | • With regard to Kasese, the district is under the Gravity Flow Water Supply Systems (WSS) proposed in Nyamugasani. In addition, MWE had introduced the Project to the District and engaged Bright Technical Services (BTS) to carry out the Environment and Social Impact Assessment (ESIA) and the Resettlement Action Plan (RAP). |
| | The ESIA and RAP will be carried out and the reports approved by National Environment Management Authority (NEMA) and the Chief Government Valuer (CGV) in the Ministry of Lands Housing and Urban Development. 229 MWE had commenced the implementation of the approved RAP through engagements and preparing PAPs for disclosure with some PAPs opening Bank Accounts and their Details entered into the IFMS. However, design reviews undertaken in 2022 revealed that there is need to increase on the supply area River Nyamugasani has been identified as the source since it has enough water yields. The above changes in the sources results into a change in the routing of the transmission pipes. This together with the fact that a lot of time has passed with many changes occurring including change in PAPs, some could have sold, more subdivisions, and probable building construction, there is need to prepare a new ESIA and RAP Reports in accordance with the new Project design and footprint Consequently, MWE and Bright Technical Services (BTS) signed on the 27th January 2022 for preparation of the ESIA, RAP, and SPP for the Project. The Inception Report is expected on 15th February 2022 and by March or beginning of April; the Draft ESIA and |
| | RAP Report will be out to.Another Consultant for Stakeholder Engagement, Environment and Social Risk |
| | Management, and RAP Implementation will be procured to address issues to do with HIV, Gender Based Violence among others prior and during construction phase. |
| Min 4 | Communication from the Consultant |
| | The Consultant led by Mr Pius Kahangirwe informed the meeting that the River Nyamugasani |
| | has enough yields to support the additional area of supply. This was a basis for the design |
| | review. Therefore this consultancy will involve ESIA, RAP, and Water source under the Source |
| | Protection Plan (SPP). The SPP activities are intended to guarantee sustainability |

| No | Description |
|-------|---|
| Min 5 | Communication from the Chairperson L.C.V |
| | The Chairperson L.C.V welcomed everyone to the meeting. |
| | He acknowledged in the meeting that Kasese District is one of the Most Water Stressed Districts in Uganda and welcomed MWE and the Project objectives in the district. |
| | The Chairman was mainly concerned about poor communication flow between the District and the MWE to the extent these changes to the additional supply areas had not been communicated to the district and other stakeholders well in time. He therefore requested that going forward, it is important the MWE and all consultants keep the district and other stakeholders updated. |
| | He requested the MWE provides the district with a summary Project Brief/Brochure for their records and reference |
| Min 6 | Discussion and Resolution |
| | MWE Team leader introduced the Project Manager (Cate Namyalo) to the stakeholders and informed the meeting she will be responsible for the Project and ensure all documents and information is shared |
| | The Chairman requested the MWE to urgently plan Engagement Meetings with previous PAPs who will now no longer be affected due to design changes. The meetings should have the focused participation of the district leaders to avoid any hostility or resistance from the formerly affected persons who have been anticipating compensation |
| | MWE Team leader said there is a new mode of operation introduced by the ministry to let district authorities manage the water to fill the gaps in proper water management. |
| Min 7 | Closing Remarks |
| | The Project Manager (Cate Namyalo) presented the expectations on the Project and called upor the consultant and all stakeholders to commence the activities immediately. |
| | The Chief Administrative Officer closed the meeting with appreciation to members who managed to attend. |
| Min 8 | THE MEETING WAS ADJOURNED |

MINUTES FOR THE COMMUNITY ENGAGEMENT AT KYARUMBA TOWN COUNCIL. AGENDA

- 1. PRAYER
- 2. SELF-INTRODUCTIONS
- 3. OPENING REMARKS FROM LC I CHAIRPERSON KYARUMBA
- 4. PRESENTATION FROM THE CONSULTANTS
- 5. DISCUSSION AND REACTIONS
- 6. CLOSING REMARKS FROM LC III KYARUMBA
- 7. CLOSING REMARKS FROM LC III KYONDO
- 8. AOB

PRAYER

Prayer was led by Biira Rosemary.

SELF-INTRODUCTIONS

Introductions were done by names, positions held and villages where people reside as detailed in annex 1.

| SN | POSITION | REMARKS |
|----|--|--|
| 1 | Opening remarks from LC I chairperson | He welcomed everyone to the meeting and thanked all for being obedient to the call and having reached in time. |
| 2 | Discussion and Reactions | Appreciates what the ministry is doing for the people of Kasese They expect to have enough water and in plenty Community expects jobs during construction Expect a tap every after 10 households The community expects the contractor to set a site clinic where also the local people can access. |
| | | Is the water for free or it will be paid f or? |
| | | The water will be treated, so there will be costs treatment involved, therefore the district leaders, MWE, sub county leaders and the operator will sit and determine per unit cost of water of follow the NWSC tariff rates. |
| | | Will people be compensated for the pipes passing in their land? |
| | | Compensation will be done according to garden crops or property destroyed and RAP has been undertaken to ascertain and registers all those who will be affected |
| | | Expects jobs to be given to the locals |
| | | The law states that; 75% of laborers be obtained from the local community unless they are not there. The contractor will get laborers both skilled and unskilled from within the project area. |
| | | We have heard about this project for over 5 years now, is it going to take off this time. And you told us people will be given jobs will they volunteer or they will be paid? You're right, the idea of this project was developed in 2015 |

| but in the designs only Nyamugasani river was considered and it was noted that it didn't have enough water for the project. So, it had to be re-designed the reason it took long to be implemented. World bank has the money and ready to implement the project as soon as possible but it can only do that when NEMA has given clearance. |
|---|
| The contractor is supposed to workers and promptly and workers should ask for letters of engagements. The only volunteering is meant for Water Source Protection Committee |
| Requests the project management/contractor to give scholarship to the children in the Sub County |
| The contractor will be on site for about one and a half years and he will handle over to the operator, so at this moment we cannot assure you of that. |
| Like electricity, people at the source are not benefiting, aren't you going to do the same? |
| As you have heard the project is going to cover over 17 sub counties and several households will get water |
| There was a project here, the workers were imported from far and impregnated our girls and left, what is our fate in this project? |
| Sensitization will be done and it actually what we are doing, and any girls or women who will entangle with the workers will already know the risks involved |
| We have trees where the water pipeline is going to pass and these trees will be cut, is there any programme/plan for supply tree seedling into the community? |
| We encourage tree planting and it's going to be one of interventions we are going to propose |
| What are the roles of the leaders in this project, we want to know our position? |
| By law, the local leaders to the mandate to know what is taking place in their area, to monitor and inspect all government projects. |
| This project was proposed long time ago, we thought we had come to tell us its commencing soon |
| It will probably start next after NEMA has done the approvals. |
| Some organization come and do not construct necessary facilities like toilets for their workers and find them going to the neighbor's toilets |
| The contractor will first construct all the necessary facilities before commencing the project construction workers |

| 3 | Closing remarks from LC III | 4 | Thanked the consultants for the meeting |
|---|-----------------------------|---|---|
| | Kyondo | 4 | Pledge for the support of the project |
| | | 4 | Expects the local leaders/LC I Chairpersons to go |
| | | | and spread the information and training they have |
| | | | got from the training. |

ECONOMIC ACTIVITIES

The people in the area mainly carry out subsistence agriculture and commercial farming on a small scale. Food crops grown include; Cassava, Beans, Maize and G.nuts. Cash crops include Vanilla, Coffee, Cocoa and Bananas. Other activities carried out include; Goats rearing, piggery, poultry, apiary and fish farming.

PROPOSED INTERVENTIONS

- When Canadians were in Kilembe, the Caterpillar was always in R. Nyamwamba full time desilting and flooding had never happened, so, he requested MWE to facilitate for a bulldozer
- Since we are farmers, if we can be funded in inputs and terracing of the hilly areas
- Riverbank had vegetation which is disappearing, if it can be restored with indigenous vegetation and trees like Bamboo
- ↓ Mini irrigation demo farms be established
- **4** Funding of the locals to plant bamboo along the riverbanks
- Concrete boundary along the river banks to direct its course and reduce of bursting of the riverbanks

WATER SOURCE PROTECTION COMMITTEE FOR KYARUMBA TOWN COUNCIL

| SN | NAMES | POSITION |
|----|------------------------|----------------------------|
| 1 | MURYANYONZA EXPEDITO | CHAIRPERSON |
| 2 | BANGAHI COSTANT | VICE CHAIRPERSON |
| 3 | BALUKU AUGUSTINE KANOT | GENERAL SECRETARY |
| 4 | VANGIRIN RWAKYAPA | TREASURER |
| 5 | BIIRA ROSEMARY | MOBILIZATION AND PUBLICITY |
| 6 | KABUGHO GEDDY | WOMEN REP. |
| 7 | BWAMBALE MOSES | YOUTH REP. |
| | EX – OFFICIALS | |
| 8 | MASEREKA ERISANIA | SCDO |
| 9 | BALUKU BOSCO | TOWN CLERK |

KYONDO SUB COUNTY WATER SOURCE PROTECTION COMMITTEE

| SN | NAMES | POSITIONS |
|----|--------------------|----------------------------|
| 1 | KABIKIRWA SYMON | CHAIRPERSON |
| 2 | ITHUNGU JOSELINE | VICE CHAIRPERSON |
| 3 | TSONGO SYMON | GENERAL SECRETARY |
| 4 | MASIKA SYLIVIA | TREASURER |
| 5 | LHWAIBWEKA ROBERT | MOBILIZATION AND PUBLICITY |
| 6 | BIIRA SUSAN | WOMEN REP. |
| 7 | KIGUNDU NELSON | YOUTH REP. |
| | EX – OFFICIAL | |
| 8 | NYATHUKERI WINFRED | CDO |
| 9 | BIIRA MARIAJEAN | SAS |

| Summary | of Stakeholder Views and Concerns at Sub county Level | | | |
|--------------|--|--|--|--|
| Stakeholder | Issue/comment | Response | | |
| CAO | My humble plea is that you involve the concerned stakeholders at all | This is part of the involvement and will continue to all other | | |
| | levels to ensure we have a successful project | relevant stakeholders before we begin the data collection phase. | | |
| RDC | Appreciated the team and cautioned them to focus on delivering the | We are persuaded that we can deliver this in a timely manner other | | |
| | project in a timely manner | factors remaining constant. | | |
| DISO | Please share us with the Development and Implementation | This will be available upon completion of the RAP study phase | | |
| | Management Plan to budget for the movement to monitor progress. | | | |
| Chairman LCV | We welcome the project to the area and will be much glad to see its | Thank you, Chairman. | | |
| | quick implementation | | | |
| DWO | Am available for any support that you need from me. | We appreciate your support | | |

| Γ | Phase | Stakeholder | Key Officials Present | Date of | Location (Villages Engaged) | Nu | umbers |
|-----|--|--|---|-----------------|------------------------------|------|--------|
| | | | | engagement | | Male | Female |
| | Inception Meeting | | | District Consul | tations | | |
| 234 | | District Leaders | CAO, District water Engineer, LCV, RDC, Dist. Planner, DVC/Person, Secretary Health, Sec. Production, ADWO, D/ Councillor | 14.10.2022 | Kasese District Headquarters | 12 | 04 |
| F | | | Councilion | Subcounty Const | ultations | | |
| | | Subcounty Leaders and Opinion Leaders | Subcounty chief, CDO, Speaker to council, DISO, LC Chair Persons, | 17.10.2022 | Kyarumba Subcounty | 05 | 01 |
| | Detailed Disclosure and RAP study Phase | Subcounty Leaders and Opinion Leaders | LC III, SEC Works, V.C/Person LC III, SEC Production, SEC Social Services, Principal Town Agent, GISO, Town Clerk | 17.10.2022 | Kyarumba Tow Council | 07 | 04 |
| | | Subcounty Leaders and Opinion Leaders | LC III Chairperson, CDO, SAS, SAA, CBF | 17.10.2022 | Kyondo Subcounty | 05 | 03 |
| | | Subcounty Leaders and Opinion Leaders | C/P LC III, V.C/P LC III, CDO, GISO, SEC Works, SAS, Health | 19.10.2022 | Kisinga Subcounty Hall | 10 | 02 |

| Phase | Stakeholder | Key Officials Present | Date of | Location (Villages Engaged) | Numbers | |
|-------|--|--|------------------|--|---------|--------|
| | | | engagement | | Male | Female |
| | | Assistant, Parish Chief | | | | |
| | Subcounty Leaders and Opinion Leaders | V.C/P LC III, Health Inspector, Assistant Engineer, Dist. Councillor, Principal Town Agent, GISO, Town Clerk, SCDO | 19.10.2022 | Kisinga Town Council Hall | 08 | 04 |
| | Subcounty Leaders and Opinion Leaders | All subcounty Leaders were present | 20.10.2022 | Munkunyu Subcounty Hall | 12 | 15 |
| | Subcounty Leaders and Opinion Leaders | C/P LC III, H/I, GISO, SAS, Councillors, Parish Chief, CDO | 21.10.2022 | Nyakatonzi Subcounty Hall | 11 | 04 |
| | Subcounty Leaders and Opinion Leaders | C/P LC III, SEC Works, SEC Production, SEC Social Services, Principal Town Agent, GISO, Ass. Town Clerk, SAA, Councillor | 21.10.2022 | Kinyamaseke Town Council | 08 | 02 |
| | Subcounty Leaders and Opinion Leaders | C/P LC III, V.C/P LC III, SEC Works, H/A, Principal Town Agent, LC I C/Ps, Speaker, LEA | 31.10.2022 | Muhokya Town Council | 09 | 03 |
| | Subcounty Leaders and Opinion Leaders | All LC1 C/Ps, All Technical Leaders, All Subcounty Leaders | 31.10.2022 | Kahokya Subcounty Hall | 19 | 05 |
| | Subcounty Leaders and Opinion Leaders | H/Assistant, CDO, SAS, LC III C/P, Parish Chief, VHT | 07.11.2022 | Kitabu Subcounty Hall | 07 | 01 |
| | | Com | munity/ Lower-Le | vel Consultations | | |
| | Leaders and Community members | LC I C/Ps, Parish Chief, and community members | 17.10.2022 | Mughanza Village Kyarumba Subcounty | 33 | 23 |
| | Leaders and Community members | LC I C/Ps, Parish Chief, and community members | 17.10.2022 | Kyondo Subcounty (Kasithu, Musasa, Kasokero, Kaghorwe, Kinyabisiki, Burumbika) | 12 | 24 |
| | Leaders and | LC I C/Ps, Parish Chief, and | 17.10.2022 | Kabughabugha | 14 | 17 |

| Phase | Stakeholder | r Key Officials Present | Date of | Location (Villages Engaged) | Numbers | |
|-------|-------------------------------------|---|------------|--|---------|--------|
| | | | engagement | | Male | Female |
| | Community members | community members | | (Kibathi, Bwethe, Kabughabugha) | | |
| | Leaders and Community members | LC I C/Ps, Parish Chief and community members | 18.10.2022 | Musasa Tradin Centre (Musasa, Kasithu, Bwethe, Kinyabisiki) | 41 | 10 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and community members | 18.10.2022 | Kisinga Trading Centre (Kisinga cell, Kataleba, Karwemera, Kayembe, Kakunyu) | 32 | 07 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 18.10.2022 | Kaberere Trading Centre (Kinyabisiki, Kaghorwe, Kaberere) | 35 | 08 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 19.10.2022 | Kasithu Parish (Kasithu | 07 | 09 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 20.10.2022 | Kawembe Trading Centre (Kisanga) | 15 | 02 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 20.10.2022 | Kyalhughuthu Trading Centre (Kyalhughuthu) | 16 | 06 |
| | Leaders and Community members | Community at the proposed Water Treatment Plant site | 27.10.2022 | Mughanza Village. | 11 | 11 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 30.10.2022 | Kasemire Trading Centre (Kasemire) | 08 | 12 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 30.10.2022 | Nsenyi Trading Centre | 31 | 12 |
| | Leaders and Community | LC I C/Ps, Parish Chief and Community members | 31.10.2022 | Mughete Trading Centre | 41 | 08 |

| Phase | Stakeholder | Key Officials Present | Date of | Location (Villages Engaged) | Nu | umbers |
|-------|-------------------------------------|--|------------|---|------|--------|
| | | | engagement | | Male | Female |
| | members | | | | | |
| | Leaders and | LC I C/Ps, Parish Chief and | 31.10.2022 | Kirambairo Trading Centre | 43 | 03 |
| | Community members | Community members | | | | |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 31.10.2022 | Kinyateke Trading Centre | 56 | 18 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 31.10.2022 | Kahokya Trading Centre | 46 | 08 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 31.10.2022 | Kibisire Trading Centre | 11 | 02 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 01.11.2022 | Karujumba I Trading Centre | 07 | 04 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 01.11.2022 | Katerela Trading Centre (Kanyabusogha) | 37 | 10 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 01.11.2022 | Kabirizi Trading Centre | 39 | 45 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 01.11.2022 | Kighenge Trading Centre | 38 | 07 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 01.11.2022 | Buswagha | 23 | 06 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 02.11.2022 | Kagandho I Cell | 07 | 00 |

| Phase | Stakeholder | Key Officials Present | Date of | Location (Villages Engaged) | Numbers | |
|-------|---|---|------------|-----------------------------------|---------|--------|
| | | | engagement | | Male | Female |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 02.11.2022 | Kamughobe Trading Centre | 33 | 25 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 02.11.2022 | Kajwenge Trading Centre | 33 | 03 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 03.11.2022 | Kirembo | 16 | 06 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 04.11.2022 | Nkunyu I Trading Centre | 42 | 43 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 04.11.2022 | Balinandi Trading Centre (Kisithu | 67 | 51 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 07.11.2022 | Bwanika Trading Centre | 10 | 02 |
| | FGD with the Village Water Committee | Focus Group Discussion (Local Leaders of Nyakatonzi) | 08.11.2022 | Nyakatonzi | 10 | 03 |
| | Key Informative Interview | Field Officer Fontes Foundation | 09.11.2022 | Katunguru | 01 | 00 |
| | Key Informative Interview | Chairman NRM Lake Katwe Subcounty | 09.11.2020 | Kasenyi Landing Site | 01 | 00 |
| | Key Informative Interview | In charge Kasenyi Health Centre II | 09.11.2022 | Kasenyi Landing Site | 00 | 01 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 09.11.2022 | Hamukungu | 25 | 06 |
| | Leaders and Community | LC I C/Ps, Parish Chief and Community members | 09.11.2022 | Kasubi Kibati | 14 | 08 |

| Phase | Stakeholder | Key Officials Present | Date of | Location (Villages Engaged) | Numbers | |
|-------|-------------------------------------|---|------------|-----------------------------|---------|--------|
| | | | engagement | | Male | Female |
| | members | | | | | |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 09.11.2022 | Mwaro Village- Kasenyi | 37 | 12 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 10.11.2022 | Kahendero Landing Site | 30 | 09 |
| | FGD Cattle Keepers | Leaders and Members of the Association | 11.11.2022 | Nyakatonzi Trading Centre | 15 | 00 |
| | FGD Business Women | Kyamwiriri Women United Group | 11.11.2022 | Kilambairo Trading Centre | 01 | 12 |
| | Key informative interview | Opinion Leader Lake Katwe Sub-county | 31.10.2022 | Lake Katwe Primary School | 01 | 00 |
| | Key informative interview | Health Assistant Muhokya Town Council | 31.10.2022 | Muhokya Town Council | 00 | 01 |
| | Key informative interview | Area Manger Umbrella of Water and Sanitation Mid- Western | 11.11.2022 | Kasese Municipality | 01 | 00 |
| | Key informative interview | Engineer KARUDEC (Kagando Rural Development Center) | 14.11.2022 | Karudec Offices | 01 | 00 |
| | Key informative interview | Health Inspector Kahokya Sub county | 31.10.2022 | Subcounty Offices | 01 | 00 |
| | Key informative interview | Opinion Leader Kabirizi Livestock Cooperative Society | 01.11.2022 | Kabirizi Trading Center | 01 | 00 |
| | Leaders and Community members | LC I C/Ps, Parish Chief and Community members | 13.11.2022 | Munkunyu Subcounty | 98 | 33 |

Annexe 3. Stakeholders Consultation Forms

| MINISTRY OF WATER AND ENVIRONMENT-RWSSD REGISTRATION SHEET ACTIVITY. KICK OFF. MEETING FOR RAP. ESIA & SPP. for Nyangala, Bitsya at 6 Solar based of stans | | | | | | | | | |
|---|-----------------------|------------------|--------------|-------------------------------|----------------|--|--|--|--|
| S/N | Name | Title | Organization | Contact/Email Address | Signature | | | | |
| 1 | JAMES SEEGUTY | 29 | MADE | scrippo Pala | ent hass | | | | |
| 2 | Bisdoowa Par | Sen Se | AWE | bistion apaul Eyalure - Conte | Q | | | | |
| 3. | Cat Nampalo | STENTO | more | Champah @ ymaitan | I down | | | | |
| 4 | Martha Naigage | SERTO | MUNE | malizaba yahoo am | 85 fit se | | | | |
| 5 | Maurice Edens Maira | ESS-IWMDP | NWE | e dema manine Equi | from the trade | | | | |
| 6 | Edrala Musapia | Pr.Soc. | MUSE | Edudamusulue | | | | | |
| 7 | Alorma Growsk | Land Valuer | 3555 | gonzaalo m Eleg meil. | m Kitt | | | | |
| 8- | To the Anna | Socialogist | BIS | Son Havuma Egment - com | Rester. | | | | |
| 7. | Ing. Kenneth Musale | Bymer | BFS | Konvsabe Equail.com | ~ 2400. | | | | |
| 6 | J Blayon Wester | RAG | 675 | Gram Envillenter | ~ BB | | | | |
| | 2. Eng. Alex Katulizo | managing Persper | BTS | akatulizete guait. Com | -V-12 | | | | |
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REPUBLIC OF UGANDA MINISTRY OF WATER AND ENVIRONMENT

C

Consultancy services for preparation of environmental and social impact assessment (ESIA), environmental and social project brief (EPB), resettlement action plan (RAP) and source protection plans (SPP) for (i) large solar powered piped water supply systems and sanitation facilities in Bugwara and Kabamba in Kagadi district, Kikoora and Mwitazinge in Kakumiro district, Kasese and Lwentulege in Rakai District and (II) Bitsya and Nyamugasani water supply systems in Buhweju and Kasese districts respectively PLACE KASESE Date DE FERRENS 3022

STAKEHOLDER CONSULTATIONS - ATTENDANCE LIST

| REF | NAME | DESIGNATION | TELEPHONE NO / E-MAIL | SIGNATURE |
|-----|----------------------|---------------------|----------------------------------|-------------|
| ~ | | Sec. worke of | 0777207928 | - |
| 01 | Marca Robert Kreinen | Techi Spinicas | Kicmistone 2 Perposel in | Smallib , |
| 02 | MUTHBUSA . WH DAX | SEHO/MWE | 0702550737 Udumithiko 09m | Mati as 499 |
| 03 | ATHEMBABAZI HELLEH | CHLIHEER | 0784611625 Kah12332 yahoo ca | |
| 04 | Munindo Asha | ASST. Eng. Officer | 0782 865572 achamulindelignah | 1 an |
| 05 | Plus KAttan/GIRNE | TL/ESIA YWSPP | 0774663688 | Fars |
| ob | EDRIDA MUSINGUES | Prive. Sec. MUSE | | Betty. |
| 07 | BASONZA STEPHEN | AD HO ENV. | 0774283600 | MAS |
| 08 | CATE NAMYALU | SENO I MWE / RUSSED | 0735 171504 miles | Mann |



BRIGHT TECHNICAL SERVICES LTD

Civil Engineers and Project Managers



REPUBLIC OF UGANDA MINISTRY OF WATER AND ENVIRONMENT

Consultancy services for preparation of environmental and social impact assessment (ESIA), environmental and social project brief (EPB), resettlement action plan (RAP) and source protection plans (SPP) for (i) large solar powered piped water supply systems and sanitation facilities in Bugwara and Kabamba in Kagadi district, Kikoora and Mwitazinge in Kakumiro district, Kasese and Lwentulege in Rakai District and (II) Bitsya and Nyamugasani water supply systems in Buhweju and Kasese districts respectively PLACE LANGE Date 3 FRAMET 2012

STAKEHOLDER CONSULTATIONS - ATTENDANCE LIST

| REF | NAME | DESIGNATION | TELEPHONE NO / E-MAIL | SIGNATURE |
|------|---------------------------|----------------------|-----------------------------------|-----------|
| 9 | Eng. collins (sharam kama | Senior Engineer | 0702755911 6774017286 Juliance | - totama |
| 10 | Masserela Anie Asuman | CAO - 100-14212 | 0772591659 | 5 April |
| 11 - | Toberand Lawrence | EHO-MUTE | 5 078868757 | - Actor |
| 12 | DAVID STREAMP | VOLUGR 1853 | Up 2 48 0993 | DS |
| 13 | JONATHAN KANUMA | SOCIALOGIST / ETJS · | 0753 603235 | the |
| | | | | |
| | | | | |



NAME OF THE PROJECT: CONSULTANCY SERVICES FOR ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND WATER SOURCE PROTECTION PLAN FOR NYAMUGASANI PIPED WATER SUPPLY SYSTEM IN KASESE DISTRICT.

Date: 07 111 2022

| NO. | NAMES | DESIGNATION | CONTACT | SIGNATURE |
|-----|-------------------------|----------------|--------------|---------------|
| 1, | Gimit Brity Smith Bi | Th-Amor | 0777028856 | -BS |
| 2, | Sympigument N. Potricis | Ag Lenir Erg-W | | Interfacto to |
| 3. | Pabine Gandhi Willy | Aqualicitalite | 2 0776 95903 | 2 plian |
| 4. | SUMMALE DIEND'S. | LCS CT PTA | 07 88 577834 | Trance |
| 5. | BHAMUNCU FLARS | CAO KASESE | 09827777422. | Stutup? |
| 6. | Isaac Novsa | Climate charge | 0983493064 | the w |
| 7. | Joseph Katsweina | DNRO | 0772997158 | COD |
| 8. | Delaconde Alice | Ag gur CRMM | DITASITOS | A |
| 9. | | 0 | | |
| 10. | | | | |

NAME OF THE PROJECT: CONSULTANCY SERVICES FOR ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND WATER SOURCE PROTECTION PLAN FOR NYAMUGASANI PIPED WATER SUPPLY SYSTEM IN KASESE DISTRICT. Date: $OqT = 11 \ occ = 2$

| NO. | NAMES | DESIGNATION | CONTACT | SIGNATURE |
|-----|--------------------|---------------|--|-----------|
| 1. | Bidodo BENELDICI | filso Kyondo | 0772184651 | to |
| 2. | Lhwassnerg Rebert | LC Soc Musaga | 07777-636893 | Stautt |
| 3. | BANYOMIRE Wilson | - musasa | and the second s | Biw |
| 4. | Myannyon Commanuel | Musara | 0709139685 | N.C |
| 5. | Bisogho Joseph | Bweine | 0778851423 | Ab |
| 6. | MUHINISO ABRIAHAM. | mu8080 | 0799942327 | state |
| 7. | Masereka Erisonia | SCDO | 0774096969 | Markerla |
| 8. | Mlamon Linet | clan | CATG727182 | fr |
| 9. | | | | 2 |
| 10. | | | | |

NAME OF THE PROJECT: CONSULTANCY SERVICES FOR ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND WATER SOURCE PROTECTION PLAN FOR NYAMUGASANI PIPED WATER SUPPLY SYSTEM IN KASESE DISTRICT. Date: 0945 11 2022.

| NO. | NAMES | DESIGNATION | CONTACT | SIGNATURE |
|-----|-----------------------|-----------------|------------|-----------|
| 1. | RETURNER JORSPH | GISD | 0772363549 | Asept. |
| 2. | KULE PASCAL. | CPERSON | 0778782687 | Bronilule |
| 3. | TIOMBO YOKONIA. | J.SEC | 0782767085 | K.J |
| 4. | MUMBERE KANDI GODAREY | VHT | 0773481219 | Grazze. |
| 5. | BIIRA ALICE BUHAKA | PTA | 0774851544 | Balico |
| 6. | Masereka Solomon. | PGA- | 0775333643 | forme. |
| 7. | Brancale, Iven | Clam Kiz | 0776,22717 | Maller |
| 8. | MUKE JOVENAL | L CIII c/person | 0778518597 | Ikhund |
| 9. | MULYANYANZA BAPEDITO | Lei Sec. | 0776581309 | 1 Met |
| 10. | Bavene Juliet | PTA | 0779606009 | Som |

NAME OF THE PROJECT: CONSULTANCY SERVICES FOR ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND WATER SOURCE PROTECTION PLAN FOR NYAMUGASANI PIPED WATER SUPPLY SYSTEM IN KASESE DISTRICT.

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| NO. | NAMES | DESIGNATION | CONTACT | SIGNATURE |
|------|------------------------------|-------------------|-------------|-----------|
| 1. | BALLICU ALCOLETINE | C PERSON KC | 0782404405 | Upos |
| 2. | MAATE EDSON, | I VAUE MBE CELL | 6789715794 | Horine |
| 3. | KULE SELEVEST . | VC/PLELT Morning | | MAD |
| 4. | Boneali Costantino. | Lei clperson | 0771409409 | 11/4 |
| 5. | Marcoti Joseph . | LCI Upercon | 0779757188 | Amakoti |
| 6. | Bwambale Merilliodi Musunger | L/C T. C/Perron | 0787120603 | Mal. |
| 7. | KIIMA JOHN. | LCI C/person Call | 0777104399. | Elter |
| 8. | Kule Nason. | hypormation | 0779785250 | Neal |
| 9. | Kamatha Edson. | LCI Cleson | 5770606211 | ER |
| 10. | Rusobulyoka pasico. | LCI C/person | 0777461487 | R. pesico |
| r11. | BALVICU JACICSON | C/P Law Kymumor | | tentus |
| 19. | Mase Ma Erisania | SCDO | 0774096969 | Hard |

NAME OF THE PROJECT: CONSULTANCY SERVICES FOR ENVIRONMENT AND SOCIAL IMPACT ASSESSMENT (ESIA) AND WATER SOURCE PROTECTION PLAN FOR NYAMUGASANI PIPED WATER SUPPLY SYSTEM IN KASESE DISTRICT.

| NO | NAMES | DESIGNATION | CONTACT | SIGNATURE |
|----------|-------------------------|-----------------------|------------------|-----------|
| 1. | MASIKA SYLVIA NYABAHASA | V.C.P. KYONDOSK | NA 6788875868 | MISYUMA |
| 2. | MASILA HARRIET | panish chief lyon bos | 15 0776388071 | ngn - |
| ×1/3. | MASIKA BRIDGET | Panish chief kyonds | 0778457663 | - |
| 4. | Kambale Nexson | P. chief-Kanyatsi-Ky | onle 0773652761 | the |
| ★ 5. | Bahasi Sohn | P. chief-Kasokero-Wy | | and |
| <u> </u> | KANYAHA JOSEPH | C/PERSON LEI Kasht | 0771449095 | (G)oseph |
| ~ 7. | MUEDILA BUR VICENS | CP LCIKLOMAN | unta -0775883590 | Ar Guy |
| 8. | Mowanza John | V. C person LE Klathi | 0760322097 | Nellen |
| 9. | Kasule christopher | C/P LCI Kagherwe | | Ah |
| 10. | HEMBO JOSEPH KHILUMANIG | - 1 | 0771449899 | JAK |

00 CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M-12-MINISTRY OF WATER AND ENVIRON REPUBLIC OF UGANDA 5-4 RECORD OF ATTENDACE RC [KARE BIETRICT] NYKANUGASKTTI MEETING REFERENCE: DISTRICT LEADERS DATE: 14/00/ 2022 VENUE: KDLG SEX NAME VILLAGE EMAIL CONTACT SIGNATURE DESIGNATION (M/F) See Brochiefis Kazeke Aric 1 Lanter Colab Etal NATUTHUERA Home 094620220 m Gami 2 SAAYIAUMA VATRICIA m RALG 077251087 10-U 12 mile 3 SHAMUNTO FUAS M 10182777422 phil OMOLIMUNDU PHONE 4 Johns Com 0776481785 MASEREKH ALEX m 5 SEN PLANNER ENGLIGE SINGODA JOJEPH PLONNING CLAST 0771631966 M Sie 0775652313 6 4020 DIVIC Person Kinedijeties @ yahos com Hunau Jetres Macuppin Q gradition 7 KALS MA ami CHRISDEMER Sec. Health M OF7269.6000 HHHR & DR.D. tosinderi 60.5m 8 DISO M KASOLE CAPT JOHNSON TASADOMA 772626778 mundielipho 9 NCIP LAGIO r MULLINDI BUKOMBLE Año 10 Gloe warve gar KASESCI I los Harvsimbi in 07526 o IT to 11 aiel Ŧ RICLANSE DA ZERORAT MUKIEX 0702001101 No USE 12 M BisImme BALIGUASEMAE IDSEPH Stor 0701859666

| | Coll Expositor | | | KASESEDISTRI | | MINIS | REPUBLIC OF UGANDA |
|----|---------------------|--------------|---------------------|----------------|----------------------------|-------------|--------------------|
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| | RECORD OF ATTENDACE | 1 | 72 13 | 0 | | 21 | |
| | MEETING REFERENCE: | 144 | MUG ASAMI | AGE K*c | ELE DILT | ria LEODA | 25' |
| | VENUE: KD VG | | | | DATE | : 14 loct | 2022 |
| | 1 | Lory | _ | | | | |
| # | NAME | SEX (M/F) | | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KIIZA LANETTE | F | Kasese mynscipul | in Prof. | | 022732123 | s L-Inelle |
| 2 | NATUHWERA HAM | m | Loses Alla | See production | | Arren | Reson- |
| 3 | Mulekei maute Johns | m | Kasese Willia | Bloomeilo | Mulikerimace Comail.com | 077534136 | WAmrate. |
| 4 | Kobosnave vote | Ł. | Vola | AONO | | 07726614726 | The state |
| 5 | 55 | | _ | | 31 | - ODILIFE | confe |
| 6 | | | | | | | |
| 7 | | | | | | | |
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| 12 | | | | | | | |

| | Chief Jegenere Chief Jegenere Chief Jegenere Chief Jegenere | | | KASESEDISTRI | MUGASANI GRAV CT F-1 M-5 | | INSTITY OF WAITE AND ENVIRONMEN REPUBLIC OF UGANDA |
|---|---|--------------|---------------------|------------------|-----------------------------------|-------------|---|
| | RECORD OF ATTENDACE MEETING REFERENCE: <u>N</u> VENUE: KYARNMER | C | UGX(XH) DECOONTY | | DAT | E: _17/10/2 | <u>\2</u> |
| ¥ | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | DEBORAT MUKICA | Ŧ. | BIS | BISIMWE | | 07-03001101 | TASE |
| | BALVICU JACKSON | M | KYMENMERA | C/P LOT | | 5782284988 | Antin |
| | Baluku Godfrey | M | Kyanumba sc | COD | Syahukabalie Camail.com | 0788344149 | Alungulue |
| | MUHINDO ANGENEW | m | KYARM MARA SE | Laso | mhole. | 67744 | Nodo |
| | KAKIONAKIO MOSEL | M | KASER | cho ami | MOZTOKANEMANDO | 0776615156 | V |
| | BALIKIMEMBE JISEPH | M | BIS | Senior badaks! | | 0183 10000 | #2 moses - |
| | | | | Scores considera | | 0701859666 | 45 |
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| | TANCY SERVICES FOR ESIA AI | AND NYAMUGASANI GRAV | |
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| Child Engineers d: Proper Mission | | F-23 | MINISTRY OF WATER AND ENVIRONMENT REPUBLIC OF UGANDA |
| RECORD OF ATTENDACE | 11 | 22 | M = 32754 |
| MEETING REFERENCE: | NZA VILLAGE | Community - KYARYINGA - CURCUNITY DATI | 6 AISULTATIONS = 17th 1012022 |

| NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|---------------------|---|---|--|--|---|--|
| KAKIONIERIO MASES | M | KASTEE | GMI CLO | Mozye Kanoo nanto | 1308172062 | Amoses . |
| Boognibale Absolone | m | and the second | AT ALL ALL ALL ALL ALL ALL ALL ALL ALL A | | | |
| BWAMBALE GEOFFREY | M | Mughan 29 | E. C. C. | 1 | P | Flain . |
| | m | mughanza | =/m Traders | | 0785111540 | KIT |
| | m | MUGharza | HATTANDES | | 0760667586 | Cart |
| | m | Mughanta | Pressont | | 0777927018 | K.J |
| MARCREVEZU | M | 0 | and the second sec | | | Sim |
| muthada Broad | | | - Contraction of the second se | | | Ruka |
| MUMBERE BEN | 13455 | | | | | - Iti |
| Mowereka Asasio | | | | | 1 | 14B |
| Kihuku Branabasi | m | Mughanza | persont | | 5787420924 5783051198 | K.B. |
| | KARIONIELO MASES BOGINIELE MASES BULAMBALE GEOFFREY Kiberga rainon Membro Joviard Villings Joviard Villings Joviard MASCRAKA-Zeja: MUMBERE BEN MOISEREA Asasio | KARDENIELO MESES M BECEMBRIE MESELS M BUMBALE GEOFFICEY M Kibaya rainon m ROMBO JOWARD M VILLINGA JOWARD M VILLINGA JOWARD M MASCRAKAZEJAN M MUMBERE BEN M MUMBERE BEN M | KARLENALELO MERES M KASEEE KARLENALELO MERES M KASEEE BECEMBALE ABSOLONO M Mughanza BILIMBALE GEOFFREY M Mughanza Kibarza Fainon M Mughanza KIRNAGA TOWARD M Mughanza VIRNANG JOWARD M Mughanza MASCRAKNZEJA: M Mughanza MUKINDO FUZED M Mughanza MUKINDO FUZED M Mughanza MUMBERE BEN M Mughanza MUMBERE BEN M Mughanza | KARLE (MUF) VILLAGE DESIGNATION KARLENALTIO MESTER M KASTEE GMICHO BECAMBALE MESTERS M KASTEE GMICHO BECAMBALE GEOFFICH M Mughanza LCI E)MAR Riberga rainon M Mughanza SEC Traders Kiberga rainon M Mughanza JATTAdope Kiberga Julius M Mughanza JATTAdope VILLAGE FUZZAN Mughanza Pentant MARCRAKNZEJAN MUGhanza Pentant MUMBERE BEN M Mughanza CIP. MUMBERE BEN M Mughanza CIP. MUMBERE BEN M Mughanza Researt Kibury Bombai Di Mughanza Researt | KAME (MF) VILLAGE DESIGNATION EMAIL KARDONISTIO MOSES M KASTEE GMS Choose Knowerson BEDENISTICE MOSES M KASTEE GMS Choose Barnes BEDENISTICE MOSES M Mughanza 2 (C) = DMAR BUMMBALE GEOFFREY M Mughanza SEC Trades Kibarya rainon M Mughanza SEC Trades Kibarya rainon M Mughanza SEC Trades Kibarya rainon M Mughanza SEC Trades Kibarya Julius M Mughanza State Julius Mando M Mughanza State MASCRAKN-Zefai M Mughanza Persont MASCRAKN-Zefai M Mughanza Persont MUMBERE BER M Mughanza CIP. MUMBERE BER M Mughanza Beasart Mushanza Beasart Mushanza Beasart Mushanza Beasart Mushanza Beasart Mushanza Beasart Mushanza Beasart Mushanza Beasart Mushanza Beasart | NAME(MF)VILLAGEDESIGNATIONEMAILCONTACTKARDONKELOMBSESMKASEEERMI ChoMOSTRERATORIANO 085 CS mathingNOR127262BOSENDALEMbseloweMKASEEERMI ChoMOSTRERATORIANO 085 CS mathingNOR127262BOSENDALEMbseloweMMughanZa2 CIC)ManNOR127262BOSENDALEREDIFIERMMughanZa2 CIC)ManNOR127262BULMMENEGEOFFREYMMughanZa2 CIC)760667586UidongaJouriusMMughanzaHIT-adares0760667586UidongaJouriusMMughanzaPart0780667586UidongaJuliusMMughanzaPart07806667586UidongaJuliusMMughanzaPart0783366238MUSMachoMMughanzaPart0783366238MUMBEREBENMMughanzaCIP0783366238MUMBEREBENMMughanzaCIP078338649MUMBEREAsasioMMughanzaReceant0787420924 |





CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: | MAMUGALAN | COMMUNITY | LOMSULTATIONS |
|--------------------|------------|-----------|---------------|
| VENUE: MUGHAM | 24 VILLARE | DA | 1E: 17/10/22 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-----------|--------------|-------|-------------|-----------|
| ł, | Muhindo solomon | m | Mighonto | Prasmat | | 0758766859 | |
| | Kule RAMON | na | muchanza | Reasont | | 07790864024 | mis |
| | Bilra Agnes | F | Muqhanza | Mobile money | | 0722168220 | Build |
| | Mumbere Banzbasi | m | murhan 21 | Peasant | | 0 02100120 | |
| | Kamulhume Moris | M | Mushanza | Saloon | | 5771808022 | Kin |
| | Brambale Muser | M | Migazza | Deasant | | 0775302078 | J.C. |
| _ | Buambare Joward | BN | Mughaza | Peasent | | - onderen | BuJ- |
| - | Thembo Musa | M | Manutsur | Persont | | | Tim |
| 2 | Markany Serry | m | maghanar | Prasant | | 07850996047 | n. 5 |
| 1 | Ben proved more | m | Kabing. | Reasont | | 0775680302 | band. |
| 2 | mujore Enny | m | maghing | peast. | | 0741620740 | |
| - | multiviolo pelus, | r | Mughanza | Pagsont | | a a | m.P |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

MEETING REFERENCE: HANNIG ASTAN 1 VENUE: MUGHXH2X

| COMMUNITY | 601 | NSULT | AT | TONS |
|-----------|------|-------|----|------|
| D. | ATE: | 17 | 10 | 52 |

| NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
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| Mambu Veniline | | M AL ON TH | Region | | | |
| A STATE OF A | F | 5 | | | | mid |
| | M | | | | 2224/12-22 | 8.4 |
| Kabugho Zaulia | F | mughanga | peasanz | | CT I D T V L | Zaka' |
| Muhindo Annah. | F | mughanza | | | | Pringh. |
| Birn Janerasa | F | | the day | | | 6.1 |
| Kabugho Brandy | F | | | | | 16-B |
| Kabugha Anez | F | - | | | | KIB |
| Kabiaho RLESTUS | F | | and the second second | | 0752679998 | |
| Marsa Selevano | 3 | Kabinao | Persont | | | ms |
| MSaereky Jockmi | | , in the second s | Prost | | | mil |
| JTHUNGU UZYEri | | 0 | | | | J+ m |
| | Mbombu Venjiline Bitre maculade MARAHI HABAT Kabugho Zaulia Muhindo Annah. Bitra Jenerase Kabugho Bronda Kabugho Bronda Kabugho Rhestus Mausa Jeleveno | Marine (MF) Mismbu Venjiline F Biire maculate F MARAHI HABAT M Kabugho Zaulia F Muhindo Annah. F Biire Janerase F Kabugho Brondy F Kabugho Brondy F Kabugho Brondy F Kabugho Brondy F Kabugho Brondy F Massa Selevano M Massa Selevano M | Marine (M/F) VILLAGE Marine Venjiline F- Mughanza Bilire maculate F Kiduku MARAHI HABAT M Mughanza Kabugho Zaulia F Mughanza Muhindo Annah. F Mughanza Muhindo Annah. F Mughanza Bilira Janerase F- Mughanza Kabugho Brendy F Mughanza Kabugho Brendy F Mughanza Kabugho Riestus F Mughanza Kabugho Riestus F Mughanza Masa Selevano M Kabingo Masa Selevano M Kabingo | Marile (MIF) VILLAGE DESIGNATION Mombu Venjiline F- Mughanta Pradomt Bitre maculate F Kiduku Radomta MARPHI HABAT M Mughanta Present Kabugho Zaulia F Mughanta Present Muhindo Annah. F Mughanta present Bitra Janerose F- Mughanta Farmer Kabugho Brendy F Mughanta Farmer Kabugho Brendy F Mughanta Farmer Kabugho Brendy F Mughanta Present Kabugho Ricet F Mughanta Present Mahanta Present Kabugho Ricet F Mughanta Present Massa Selevano M Kabingo Present | Martie (MIF) VILLAGE DESIGNATION EMAIL Martine (F) VILLAGE DESIGNATION EMAIL Martine (F) Mughanta Pressont Birra maculate (F) Kiduku (Pádtanta) MARAHI HABAT (M) Mughanta (Presson) MARAHI HABAT (M) Mughanta (Presson) Kabugho Zaulia (F) Mughanta (Presson) Muhindo Annah. (F) Mughanta (Parmer) Birra Janerase (F) Mughanta (Parmer) Kabugho Brondy (F) Mughanta (Parmer) Kabugho Brondy (F) Mughanta (Parmer) Kabugho Brondy (F) Mughanta (Parmer) Kabugho (PARA) (F) Mughanta (Parmer) Kabugho (PARA) (F) Mughanta (Parmer) Massa Selevano (M) Kabingo (Parson) Massa Selevano (M) Kabingo (Parson) | MANUE(MIF)VILLAGEDESIGNATIONEMAILCONTACTMarchartFMughantaPeasantBireMaculateFKidukuRadomta.MARAHIHUBATMMughantaPeasant0777627022KabughoZauliaFMughantaPeasant0777627022MuhindoAnnah.FMughantaPeasant0777627022BirraJaneraseFMughantaPeasant0777627022KabughoAnnah.FMughantaFarmer.BirraJaneraseFMughantaFarmer.KabughoBrendaFMughantaFarmer.KabughoBrendaFMughantaPeasant.KabughoRinetFMughantaPeasant.MassoSelevenoMKabughaPeasant.MassoSelevenoMKabughataPeasant.MassoSelevenoMKabughataPeasant.MassoSelevenoMKabughataPeasant. |



| | SUPPLY SYS | TEM IN | BUHWEJU DISTR | IA AND RAP FOR E RICT AND NYAMU((ASESEDISTRICT | GASANI GRAVI | MINIST | Y OF WATER AND ENVIRONMENT REPUBLIC OF UGANDA |
|----|---|--------------|---------------|---|--------------|---------------------------------------|--|
| | RECORD OF ATTENDACE MEETING REFERENCE: | 4 | | CENTRE | | <u>ч сорозиції</u> E: <u>17/10</u> | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Rino Eveniling | F | Ducherse | | | | 0 |
| 2 | MASIERIEKIA MILIEKI | m | MUGHANTA | | | | Nor |
| 3 | BURD OLIVA | F | MUGHANZA | | | 0781076617 | BILLE CLUE |
| 4 | Masila daudati | F | Mughanza | | | | Masika D |
| 5 | DIFULOZE BILLA NE | F | MUGHANZ-A | | | | D.B Nyamosto |
| 6 | MBAMBU TOPISTA | F | MUGHANZA | | | 0786917109 | STATE |
| 7 | Thungu Syllivia | F | mughtanza | | | | TT-S |
| 8 | mulich Nasana | M | mighanza | | | | m. w |
| 9 | Kihnko mogustine | m | mighanter | | | | N. a |
| 10 | Mbambu Roseman | F | Mughanza | 2 | | 07788411 | 6 12.2. |
| 11 | BALNES Remegio | 11-1 | mughanza | | | 078087682 | BP. |
| 12 | masereka John | | 0 | | | | ~ |



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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: | [ommunit. | CONSULTATIONS | |
|--------------------|------------|--------------------|----------|
| VENUE: MUGHTAN | 24 VILLAGE | KYARUNDA FHB DATE: | 15/10/22 |
| | | County | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------|--------------|-----------|-------------------|-------|--------------|-----------|
| 1 | BLACK GODUNIA | m | | | | 078#355874 | Re |
| 2 | Daricico Libra | m. | myliazza | Propert | | -+0-30000 | J.L |
| 3 | Masilla Ruth | = | motion 2+ | Peasant | | | mr |
| 4 | ndungu semerita | F | mughanza | peasant | | | N.S |
| 5 | BIIRG Grace | p- | Bwito | Peadant | | | B-1 |
| 6 | Masika frisi | F | mahanza | Parsmit | | | |
| 7 | KEEDRAN MUKISA | Ŧ | RTS . | ETS MWE | | 1070301101 | ME The |
| 8 | Joseph Balipuddamize | M | BISIMWE | Senio Socio togos | | 0707851666 | The I |
| 9 | | | | | | 0 10163 1000 | 100 |
| 10 | | | | | | | |
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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M - 7

F-H



| RECORD OF ATTENDACE | 2 |
|---------------------|------------|
| MEETING REFERENCE: | MAAMUGASAM |

VENUE: KYARUMBA TOWN COUNCIL DATE: 17/10/22

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------|--------------|----------------------|---------------------------------|------------------------------------|--------------|-----------|
| 1 | Bwambale Wan | M | Kisange | Clern Lu | E Jahre com | · 0776122717 | Alter , |
| 2 | Bwaganga Robert | m | BINIMANINO | See works | bungangarabat | 0997083465 | Almer. |
| 3 | Bauen Bota | M | #tota Jo | Jourdan | - | 5772901889 | pp |
| 1 | Baghanzerne Hernier | F | bis gain and stating | See prodenty Miching Ktannia | 0786557075 | | Blonk |
| 5 | Billa Josephine | F | Kayembe ce | | | 0784696122 | Dina |
| 3 | Mbombu Zonet | F | Nyakeya cell | y. Cleason | 0785134985 | 0725184985 | Med . |
| 7 | Malereka Lolomon | M | Ryanube made | frincipal Power | 0100000000 | | Share |
| В | Richman Compt | M | Kyanunda cent | GHO | | 0772-363549 | Joseph . |
| 9 | DECENTH DUKISK | Ŧ | BIS MWE. | Scarologist | 101100207101 | 0/03:00/101 | AS-S |
| 10 | Joren Balanddembe | M | BTS MWE | Junio Loudagest | 448.2 - 16 K SH S - 1 - 176 B - 33 | | - Alexant |
| 11 | KARGONEAKED WOLCO | m | KASESE | CLO CIMÍ | Comate com | 0788 129262 | Moses |
| 12 | | | | | | | |



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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M-17 F-27



RECORD OF ATTENDACE

| MEETING REFERENCE: | NYAMUGASANYI | RAT | CONSULTATIONS |
|--------------------|--------------|-----|-------------------|
| VENUE: KYOMDO | | | DATE: 17 # (10)=2 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|---------|--------------------------|--------------|-------------|-----------------|-------------------|--------------------------|-----------|
| 1 | MUKE JOVENAL | M | Kyonso SIC | LCIII C/per | Bamail an | 0774076463 0778518597 | Thomas |
| 2 | Joseph Britisuddenibe | M | BISIMWE | Lemi Sciolarist | | 77859666 | 服 |
| 3 | LUNAL HUILGALI LUNINSFAR | F | 1240NAD S/C | CINIC | Longer mail - Com | 5775706265 | Light |
| 4 | Bira manie sean | 12 | Kyoncho Stc | Svie | Marielicatestical | 0782403769 | 1 " |
| 5 | KANONARIO MOSES | M | KASELE | 660 | | 0788-127262 | Kinlosce |
| 7 | LEODENTA MUKICA | Ŧ | BTS MOE | Sociologiate | | 070300(0) | H. |
| <u></u> | IDEMAE GOTTA | M | 1AA SAD | SAA | 1 densepter How | m DHILIGOL | Gre. |
| 9 | Nebusg Isnopord | m | Knowlie | C187 | - 0.100/- 4 | 0773101872 | SC. |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| - | | | | | | | |



| | RECORD OF ATTENDACE MEETING REFERENCE: COMMUNICITY CONDUCTION CONCENTRATION VENUE: KNOW DO WATER AND INVERTIGATION DATE: 17 Oct 2022 | | | | | | | | |
|-----|---|--------------|------------|--------------|-------------|--------------|-----------|--|--|
| | | | | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | |
| 1 | masilca stella | 1= | Kyanzababi | i — | | | m.s | | |
| 2 | Kabugha Binateta | 17 | ч | | | 075 CADAIOSI | K.B | | |
| 3 | mbamby virinia | | 14 | | | 077249242 | mt. | | |
| 4 | Icyalcimua daudate | 1P | 4 | - | 4 | | Me | | |
| 5 | mbumby midias | 1= | s. 1 | | - | | | | |
| 6 | MBAMAH REGINA | F | KASITHY | | 5 | D7754 KING | MiReash | | |
| 7 | BRESI BUILDALE | F | MUSASA | - | - | | BB | | |
| 8 | KAKIAKIDALAK MOSIS | M | KASESZ | CLO GNU | | 0785 12726) | Fringes | | |
| 9 | MUKE JOVENAL | M | Kyondo Ste | LCI c/peron | Es mail con | 0774076402 | Whenke | | |
| 11 | Bism Manie Lane | P | regordune | SAS | - | 772403760 | Pal | | |
| 12 | Balionddembe Joreph | M | BISMIKE | Senia Social | ogist | 6757859666 | FR | | |
| 1.4 | DEBORAH TOURISA | F | BIELMWE | Sandaria | P | 570200101 | TBI. | | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT

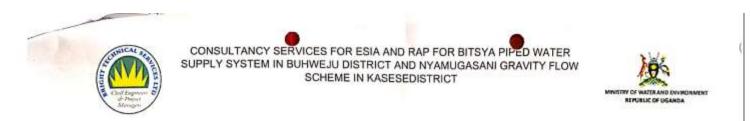


RECORD OF ATTENDACE

| MEETING R | EFERENCE: | Community | Consultations | | |
|-----------|-----------|-----------|---------------|-------|------------|
| VENUE: | KYONDO | SUB-GUNIT | | DATE: | 17/00/2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|--------------|-------------|-------|----------------|-----------|
| 1 | MUSSKI Annet | F | KASOKERO | | | 0775185494 | Aluek |
| 2 | mobroba Graeo | 1=- | KASOKERO | | | 0787734550 | M.G. |
| 3 | Wakimug mauleria | F | KA BICIER | | ~ | - | K. m |
| 4 | Grace mugambi | F | Kaghorus | | - | 077565785 | 1 grave |
| 5 | Biira ELiza | F | Kanyanze | 25- | _ | 07862725 75 | Biira |
| 6 | Kyakimwa | F | n, | | | | K |
| 7 | MUHINDO ESTER | E | Larguorius | - | | 0779502765 | ALCY . |
| 8 | ndungo steva | F | Koghorwe | ~ | | 0787567886 | N.S |
| 9 | Kabygho Robinah | F. | Kyalhyghu | hu | | 07845732.74 | |
| 10 | Masika GEbing | | Kinguahisiki | | | 078611766 | |
| 11 | BILLA ELIZABETH | F | BURUMBIKA | | | 0775127982 | B'E' |
| 12 | Kaykimwa Janpher | F | Burumbika | | | 076114573 | |





| MEETING RE | EFFRENCE: C | DIMMETY CONSULTATIO | 2Cm | |
|------------|-------------|---------------------|-------|-------------|
| MEETINGIN | 2.55 | | | int it |
| VENUE: | KYONDO | SUB COUNTY | DATE: | 17/not 2002 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|--------------|----------------|-------|-------------|-----------|
| l, | BALUKU JAMES | m | KINAABISILO | | | 0775422967- | Brug |
| 2 | Keghel Julius | m | K- ALHUGHUSH | 0 | | 07-53446673 | gross- |
| 3 | Kananga Alofrey | M | Kalemire | | | 077556252 | Strangens |
| 4 | Balewarya Royers | m | Kinyabisik | | | 0751200253 | - 400 g |
| 5 | Mumbaling Gilbert | M | Kagherwe | | | 0761357781 | ZKRATE. |
| 6 | Thenko Rabison | m | Kungabisiki | | | 07872070HI | 12.000 |
| 7 | mucho Enezy | u | Kayhome | | | 2784162664 | Red |
| 8 | MASSEREKS ERINS | M | BUL, GHISA | 17 13 | | 0771200271 | m. Zel |
| 9 | Massiley Juli-de | F | 1casening | | | _ | m. Julie |
| 10 | Mbusa Ignahous | m | Kyondeste | Based Facility | | 0773101872 | -P |
| 11 | | Ŧ | Burumbinza | | | 0706057224 | AND |
| 12 | BALHUBASA ANNIAH | F | Burumbika | | | 0783011056 | B- A |





CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M - I F - 6



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RECORD OF ATTENDACE

S 13

| MEETING REFERENCE: | NAMU | GASATHI | (DMMUNITY_ | GONSY | LIBIION |
|--------------------|---------|---------|------------|-------|---------|
| VENUE: MUGHAHZA | VILLAGE | FGR | DATE: | 17 | 10/22 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------|--------------|-----------|---------------|-------|------------|--------------|
| 1 | BILLA OLIVA | F | MUGH#202A | _ | | 0781076647 | Birra OLiva |
| 2 | MASINA DAUDATHI | F | MUGHANZA | | | | MASIKA D. |
| 3 | BARA NYAMAGAMBODIA | F | MUGHANZA | | | | B. D. Mamage |
| 4 | MBAMBU TOPISTA | F | MUGHANZA | | | 0786917109 | Tang Barrier |
| 5 | Thungu Sylivia | F | MUGHANZA | | | | Th-S |
| 6 | DEEDRATH MUKICA | F | BISMOE | Scolorista | | 070301101 | ABAY |
| 7 | Balibuddembe Joseph | m | ALC: 1 | Emile Sources | | 5707859666 | H J |
| 8 | | | | 0- | | 1000 | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |



| | The function | UTENT. | N BUHWEJU DIST SCHEME IN | KASESEDISTRI | т — 14 F - 17 | | THE OF WATER AND DRVIEDWINENT REPUBLIC OF UGANDA |
|----|--|--------------|--|--------------|---------------------|------------|---|
| | RECORD OF ATTENDACE | 4 | 1 | | | | |
| | MEETING REFERENCE: | | THAMAGAS | 47 | 6.0 | 101-1 | a transfer |
| | VENUE: KABUGHA BU | 16++1 | Y VILLAT | the HARVING | <u>ォリノム</u> DAT | E: 17/18/2 | 022 |
| | | OFV | W | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KANIONIANIO MOSCOS | m | KASESE | CLO GMI | Manuskanopranis ers | 0788127262 | AKMOEES. |
| 2 | BERDRAH MUKILA | Ŧ | STS MUSE | Sociogiety | | 0703001161 | Alle |
| 3 | Bangali costantin | | Kabudaby | LCICIPES | | | inte |
| 4 | BIURMEALE HABASI | M | Kabughaibughacen | | | 0971409409 | 11. |
| 5 | JULY MEAMBY | F | Kabup La bughe a | | | 0761175825 | -vertilier- |
| 6 | BUNNER LE GEOFREY | Sec. | The second s | ESSATES NO | | | atten |
| 7 | 122 /0 000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | m | BWE JIFE | peasant | | 0786342143 | Abertain |
| 8 | City II | | | peasant | | | Bust2, |
| 9 | HYAMAYARD ERIC | m | KIBATHÍ | Plasant | | - | NEW . |
| 10 | Kisukyi SElline | | Kabuahabuaha | Pearent | | | K.S |
| 11 | KAMBESH Agessine | M | Kabuguerg | y pealed | | 0773012325 | KARD. |
| 12 | Bwandalie Morian. | ns. | Kasughe Sug4 | e peasent | | _ | Br. |
| 12 | MABUGHO REGINA | F | Kabughabugha | PEOSERT | | 0785251735 | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

MEETING REFERENCE: MYAMUGACAMI

VENUE: KARIGHARYGHA WILLAGE KYARUMBA TC DATE: 17 10 22

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-----------------|--------------|--------------|-------------|-------|----------------|-----------|
| 1 | Kule Landus | m | painbumbu | 1 Vesent | | #20/100 1 1-20 | Land |
| 2 | Kobgho Jniepher | E | Konbinhie | D | | 0784006432 | 10410 |
| 3 | mbambu mory | F | | ma Peoplant | | 0770666200 | mbamba |
| 4 | muhindo morreen | F | Kabugno puga | | | 07784832 | |
| 5 | Biira Jotroco | P | Kebuquabuque | | | C / / KB345 | Jetreace |
| 6 | Etina malita | F | Kabughabugi | 0 1 | | 07898.7759 | |
| 7 | BURA ANIFA | F | | na Peosal | | P1013 1159 | B-A |
| 8 | MASIKA REBECA | F | | for Descent | | | ANR |
| 9 | KYANWER GOREETI | E | Kabuahaba | La Peccat | | | KiG |
| 10 | Mirabu Bira | Ŧ | Kampedar | | | | moine |
| 11 | Bira ELIZabeth | F | Kabughabugha | - | | | BE |
| 12 | Kabugho Janet | £ | Kabugha | PLCCont | | | |



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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



| RECORD OF ATTENDACE | | | |
|---------------------------------|------------|-----------------|----------|
| MEETING REFERENCE: MAX MUGAS MA | 1 | | |
| VENUE: LABUGITABUGHA JIWAGE | KYARIMEN T | C DATE: | 17/10/22 |
| | | Last the second | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|------------|----------------|-------|------------|---------------------------|
| 1 | NRAZA GRACE | F | Kaloufiga | Persont | | | NIG |
| 2 | Kabuaho mirriam | 7 | Kabuqhabu | na pressant | | | |
| 3 | muhindo Tereza | 7 | Kabughabug | a Reaganz | | | |
| 4 | MUHTINDO ZALMON | m | Bugmugu | | | 0776945787 | The |
| 5 | MULTINGA DOU. KO | M | KANYATS. | | | 076214866 | |
| 6 | muserpilla Joled | m | Bulibo | | | 0784144152 | 2 2 2 2 2 1 1 1 - 2 1 - 1 |
| 7 | Balicuddembe Inep | m | BISMWE | Senie Schaogil | | 0707855666 | 38 |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIFED WATER ALCAL SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M - 41 MINISTRY OF WATER AND ENVIRONMENT REPUBLIC OF LIGANDA F-10 ID 5 RECORD OF ATTENDACE MEETING REFERENCE: Gon Sultation emmunif. 2022 VENUE: MUSASA TRADING DATE: CCA DIREF SEX NAME # VILLAGE DESIGNATION EMAIL CONTACT SIGNATURE (M/F) 1 North Kawonawa TIMPEOS. KAKHONGANO MASCOS M KASESE ETMI CLO 0755127262 2 Musasa Robe maisurela m 077767680 Uli 3 aum MUSASA lottal Unall tanahorm 078835806 4 D M BISIMBA MUSASA CMACH Dates 5 9758149776 RepH mulea sa M 6 musasa Mu Mies 075673733 7 Waling moses M Musasa W Wm 8 Lhwasswera M Jackson mu sasa 0783460616 L·J 9 M BUYINGO Charl musesa an 10 m Mirongo Musasa K.M. 11 Muhindo 1.4 Samuel MSASA m The. 12 chikinemichenlinusegmail.com KYARIMWA MICHEALINE Kim MUSASA

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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHY U DISTRICT AND NYAMUGASANI GRAVITE FLOW SCHEME IN KASESEDISTRICT



| -16 26 | VENUE: MUSASA TR | ADIN | ig CGKITLE | | DA | DATE: 18 10 2022 | | | |
|--------|---------------------|--------------|------------|-------------|-------|------------------|-----------|--|--|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTÁCT | SIGNATURE | | |
| 1 | MULLISOHOZZ iS | m. | Marsan | ICases | - | 078133718 | m. | | |
| 2 | Isembamble.m. Longo | m- | musaga | Kasese | - | 6777295547 | I.m. L | | |
| 3 | Kube Jonazi | FN | musasa | Kasese | _ | 6713627#4 | | | |
| 4 | Surgenza Joseph | m | Kee STELLY | Kasese | - | | 55. | | |
| 5 | Boundale Jookin | n m | nuesesos | Kosese | | 075,63926+ | 80000 | | |
| 6 | mulindo nicer | m | musaca | kolefe | - | 0771639192 | ALL S | | |
| 7 | MUSOLAI FAILH | E | MUSASA | Kasese | | 07-7548390 | | | |
| 8 | Buoambale Joel | m | musasa | Kasere | | 0786551448 | SB250 | | |
| 9 | MUKINE John Balue | m | for sthe | | S | 077-634959 | , 0 | | |
| 10 | BULLIER JOSIA | h | Buette | 14ASDEC | | 0753427858 | BJ | | |
| 11 | Thumbo Zakeri | M | musesu | | | 0776372365 | 172 | | |
| 12 | Maserca Zack | m | musese | Case | | | misely | | |
| 13 | BWAMBALE MOSE | | KASithu | 11 | * | 0771996000 | Bren in | | |
| 14 | LAWAIBWERA JUMAN | | MUSASA | Losese | | 0781929200 | LUTH | | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHN JU DISTRICT AND NYAMUGASANI GRAVITE FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

MEETING REFERENCE: Community Consultations

| E | VENUE: MUSASA TR | SEX | 14 CENTR | The second second second | DA | TE: 18 10 2022 | | |
|---|-------------------|-------|------------|--------------------------|-----------|--|--|--|
| | NAME | (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | |
| 1 | Burambale Adoli-4 | m | musasa | | | 0789923036 | IBABLEU - | |
| + | KULEE WALTER | m | musasa | | | 077767140 | 1. | |
| | Kasule Joseph | m | 1205thu | | | 077774942 | | |
| | Kucé tosa | m | MUSASA | | | 01760220 | | |
| | Baluku Ameni | m | MUSASA | | | - 10000 | B-A | |
| | BURA ANNET | F | Musasa | | | 078343792 | | |
| | Zalimon Bujing | m | Wyon aligo | | | 0784271624 | and the second s | |
| 1 | Baluco Julis | m | musasa | | | No. of the second s | | |
| | KASIBURGHS Foren | M | Musasa | Mobili ser | gmash com | Whatsharp NA | Houbrel | |
| | MERIOMAJOHASON | m | MUSASA | VA | 0.0 | 0772946547 | Mitchiestes | |
| | Mbusa Benjamin | M | masasa | massion | | 077.07000 | 4 | |
| | Mas spens Geo | n | MUSASO | | ZYAFONGI | 079.0755024 | Mauf | |
| | PAS: KO | M | KIBAGH | | CHIONS | 0774782204 | All to | |
| 1 | | m | MUSASA | | | 0 | 1 | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPET WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



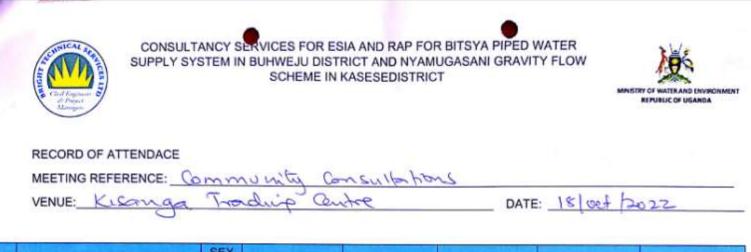
| RECORD OF ATTENDACE | 20 | | | | | | |
|---------------------|-----------|---------------|-------|----|----|------|---|
| MEETING REFERENCE: | Community | Consultations | | | | | _ |
| VENUE: MUSASA | 2 | | DATE: | 18 | 10 | 2022 | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|---|---------------------|--------------|--------------|-------------------|-------|-------------|-----------|
| | MUHINDO REGINA | F. | Musasa | KASESE | | | m.R |
| 2 | KIZA ANNET | F | MUSasa | KASESE | | 0786077411 | 14 · A |
| 3 | MASIKA MART | F | Musasa | . 1/ | | 077879399 | -M#D- |
| 4 | Birg Shering | F | MUSOS | 1 ASSR | | | ~ . |
| 5 | Balijond dowle Joup | m | BISMONE | Servin Saratorest | | 0701859666 | 12R |
| 6 | walente Amos | m | Finyabisilei | Kasade | | 0777294910 | ACH |
| 7 | Bulenny Zephania | | Finyabisil | 1.2.1 | | 6775196537 | |
| 8 | NASON KAKOLE | | 1 | - | | 0776129361 | NIKAKOLE |
| 9 | | P | Kindabisi | Varere | | 078919-9878 | 2004 |
| 1 | " Thembo samon | m | Buthy | KASESE | | 0783350573 | fut |
| L | 1 DEDENZ muhinds | F | Kinyabisiki | | | 3 | Pi |
| 1 | 2 Tedi Rukuga | F | Kinyab sic | 16ASSSE | | 0783406074 | 7.9 |





CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT MINISTRY OF WATER AND ENVIRONMENT REPUBLIC OF UGANDA RECORD OF ATTENDACE Consultations MEETING REFERENCE: monito DATE: 18/00+ 2022 VENUE: KISAMAA Trading an CONTACT SIGNATURE SEX DESIGNATION EMAIL VILLAGE NAME # (M/F 0774408663 Pascal Land lovel 1 Katalebacell Kayenga Laying m. 2 0773481219 Cumt Land Lord Kisonga all Folfre mi Kanot afilm 0706776322 3 Lule Moris M Bala 4 0775203232 Land Lord m Kanwenerg Mamurineburg Seo 07866112 5 B. Phay F Milhando Phay and Lon Batsemache 6 Kataleba Land land 14 0773675336 hule m 7 No Katoleba YP LCI 0787120603 M. Brombal M.Musungu 8 Nion. 0782445576 and lord Kabarung' Wilson m. Kayembe 1 9 CS CamScanner AS land lord Katimba NO Konalo m when 10 12AYEMB 0774056555 Riel PIL · M 11 Land Lond 0785024135 MUKERECHE RAUBEN KATUMBA M -12 0782669223 MBALE M 7 OSTUA KARWEMERA



| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------------|--------------|--------------|-------------|-------|---------------|---|
| 1 | Requestor Acquitine | m | Kyrauns ic | | | 077472779S | dom. |
| 2 | Bulanbale Hearty Beldin | m | Kynenma T.C. | | | 0780739776 | Gitthe and by |
| 3 | Muttolito Tom | seq. | Kuprumbuto | | | 07-837-8 9658 | And a |
| 4 | Dira Juhal | F | Kywww.baTe | | | 0785392987 | JB |
| 5 | BAHA LAZARD | F | kyarup | | | | BAHAT |
| 6 | Muhindo Klikon | m | Kjammba The | | | 0779594638 | |
| 7 | NZUKWABEN | NIM | 0 | | | - | A |
| 8 | MIREMBE CALVIN | m | 14 A | elp YAMA | | 0750209668 | Monthem |
| 9 | mbambu Zonel | F | KISonpa CON | | | 67747-27182 | |
| 10 | Kabugho Juliana | F | Kakunyu | | | | 14.5 |
| 11 | Kischba Oliver | F | Kakunyu | | | OT THOLETON | 001 11.000 |
| 12 | Kabugha Rosemon | | Kalcunyy | 1 | | 077035132 | |

| | | | | | | | REPUBLIC OF UGANDA |
|---|---------------------|--------------|--------------|---------------|----------|------------|---|
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | Con | monity | Consult | atons DA | TE | |
| | VENUE: Kisanga | na | and in | ANC . | DA | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | MUGER-OR BEOBLE | | HASMMERK CEL | | | 0' | Mubdern |
| 2 | mbusa Chrispus | | Kanoomeng | | | | |
| 3 | Exep Baliaddense | | BISIMWE | Surve Society | 181 | 0774118492 | asting |
| 4 | | | | | | oto1859666 | -BS |
| 5 | | | _ | | | | |
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| Ľ | | | | | | | |

| | CONSULTA SUPPLY SYS | NCY SE TEM IN | BUHWE UDISTR | A AND RAP FOR ICT AND NYAMU ASESEDISTRICT | BITSYA PIP S W IGASANI GRAVIT M-36 F-8 | MINISTRY | OF WATER AND ENVIRONME EPUBLIC OF LIGANDA |
|------------------------|---|-----------------------|--------------------------|---|---|--------------|--|
| | RECORD OF ATTENDACE MEETING REFERENCE: VENUE: VENUE: | omr Ti | RADING | Consult CONTRE | ahons DATE | M=35 F=08 | J44 2020 |
| | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KAKIONIAKIO MOSOS | M | KASESE | GINT CLO | 085 Cg main | 0785127262 | Haroses |
| 2 | KIKUKUMO JOEKNUS | m | KIOPALISIKI | CIPICI | | 0786270723 | Jamp |
| 3 | Kuado ludhoka Rubere | L.M | Kunyabiciki 1/5 | Swieacher | | 0771440442 | 42 |
| 4 | Kamala Andreu | | A 1 | K BLONDE | 3 | 07899757 | Askerine |
| | AGUAR DESCRIPTION OF | - | 1 | | | | |
| 5 | MAK AIREN .B. | F | 16 m red nois | a la | | 1777429501 | MB |
| 5 6 | MAKLAIREN B. | | Kin Johnski | 4 | | 0777429501 | MB |
| 1000 | MAKLAIREN B. NGLUNDIKK PHILANIR BULICA RASED | | Kinyubisiri | | | 0777629501 | N.A |
| 6 | NGLUNDIKA PHICALUR | m | | | | 6778480085 | N.A B.R |
| 6 7 8 9 | NOUNDIAN PLUCALUR BULICA RASED NEWALES Miberry Macereker Tacks | M | Kinyabiski Kingabiski | | | | N.A B.R Mith |
| 6 7 8 9 10 | NOUNDIAN PLUCALUR BULICA RASED NEWALES Miberry Macereker Tacks | M | Kingabiski Kingabiski | | | 6778480085 | N.A B.R |
| 6 7 8 9 | Noundition Philippines BULICA RASED Newales midering Macereter Jacks Bucombode James Bucombode James | M M M F M | Kinyabiski Kingabiski | sei. | | 6778480085 | N.A B.R Mith |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



18/10/2022

RECORD OF ATTENDACE

| MEETING | REFERENCE: Con | monsty | Can sultat | bue |
|---------|----------------|-----------|------------|-------|
| VENUE: | KINYABIEIK, | TRASPATE. | CENTRE | DATE: |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|------------------|-------------|-----------------|-------------|---|
| 1 | Bwambale Ginaan | M | KINTMERSHAN | Lett clp | lotangungero fo | 0761773564 | P |
| 2 | BWAMBOLE MATIYA | M | KAGHORWE | PERSMIT | Sugar 10, Com | 0782641727 | |
| 3 | KUULE ROBERT MWHY | a m | | | | | |
| 4 | MUHINDO RICHARD | wh | KINJAMISIK | FARMER | | 0774580244 | the second se |
| 5 | KBUSO BYASHINK | m | KARADA | | 9 | 27289218 | mulindo Roh |
| 0 | Kaberrer Tadoo | M | Kinychisiaci | | | | - |
| 7 | BKAMBAN MIKA | m | Kinyabisia | 1 | - | 0787760099 | Browlingthe |
| 8 | Tames Rinero | M | Kalorsho | peagent | | 0181975651 | B ANA |
| 9 | Kayanda Gidio | M | | Resant | | -1014 19651 | Kieng |
| 10 | BALUKU CHRISTOPHOR | 125 | Kastorwe | FARMON | - | 0776134828 | Chateges |
| 12 | MVMMERE Godiwin. | m | Kor Hingabier Ki | Hanuasti | ~ | 100101000 | Murex |
| 2 | Lucky John Desi | m | Kimalisik | Manyasti | - | | 12 |





CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

MEETING REFERENCE: Community Consultations VENUE: KINTOBISIKI KABERERE TRADING CONTRO DATE: 181 10/2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-------------|--|-------|---------------|-----------|
| | Kule LANDENCE | in | Burumbikg | | | OFFERENCE | Ant |
| 5 | NUNEREHOR 32TOP | m | MHERERE | KASESE | | 0784848532 | SAR |
| 3 | MASISTANAL DAVING | м | Kintabisic | | | ST \$267 SUTS | pulad |
| 4 | BWAMBALE BLEX | M | Kimpbiou | ci Kinyabiski | | 072537897 | Han 1- |
| 5 | Youmia Gasittu | m | | the second s | | 078909135 | 1 4.12 |
| 6 | KIGHOMA Deneoi | m | Kinyabiski | KA-SUSE | | 078603399 | 59 King |
| 7 | Biira costnee | FF | 0 10 |), | | 0772311094 | COSENGE |
| 8 | ne valess maciko | P | 11 | 1 | | 077044989 | |
| 9 | Munque Deging | F | Kag borne | 2 | | | 102 |
| 10 | matagass voice | P | Kinyabiski | 4 | | | mil |
| 11 | Butimbale David | M | KinyabisiKi | 1 . / | | 0760804823 | Bui Do |
| 12 | Kasule christophr | M | Kaghorwe | | | 0772951798 | Am |

| | CALMER AS ALS | |
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| 6 | Chell Brannen B | |
| - | madin | |

CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIZED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



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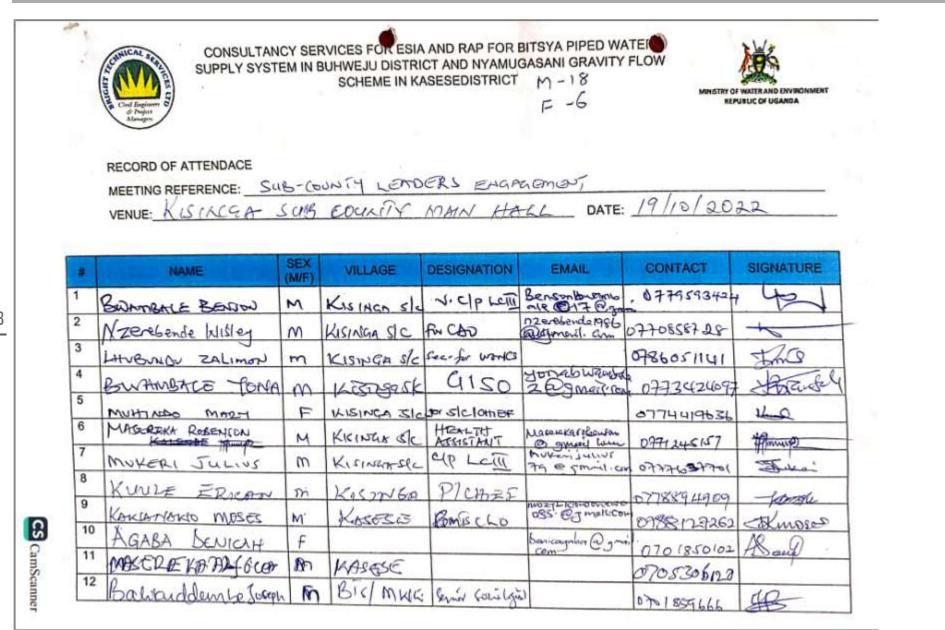
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RECORD OF ATTENDACE

MEETING REFERENCE: Community Consulta hours VENUE: KINTABISIKI | KABERERE I RADING CENTRODATE:

| # | NAME | SEX (M/F) | TALL AND A DESCRIPTION OF | DESIGNATION | EMAIL | CONTRACT | |
|----|--------------------|---------------|---------------------------|---------------|-------|-----------|-----------|
| | MBAMBU SYLVIA | m | 1 | | | CONTACT | SIGNATURE |
| 2 | MASEREKA MAKOT | 102112 | Minyabisihi | | | | |
| 3 | BALUKU JANES Q. | M | KinyaLisiki | | | | |
| 4 | Busambake Yosia | M | Kaghonve | | | ONGLADIO | Thugs |
| 5 | BURA OLIVER | m Fo | KinyaLisiki | | | 077977373 | Patersic. |
| 3 | Kule Finmoni | | Kindabisiki | | | 078285477 | |
| 7 | multingoleibawira | | Kingabis i di | | | 078546233 | |
| 3 | Baliarddonte Jogh | Constraint of | Kingabisik | | | | mic |
| 9 | 2 million & Joseph | M | Bisymul | enti Cealogii | | 978755666 | 38 |
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| | RECORD OF ATTENDACE | | | | | | |
| | | NN | COUNCIL L | EABERS E | NGRGEMENT | | |
| | VENUE: KISIKIGA 101 | SIN | COUNCIL | HALL | DATE: | 19/10/202 | 2 |
| | | | | | ~ J | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATUR |
| 1 | Baluta Alfred | m | 1055579951C | TICLER | altred boln En > | 982401527 | Spin |
| 2 | MWAHULHWEH GLEAFFRE | y m | KisingerTie | D/ Ourdela | 13 Juner (m | m 07880674 | |
| 3 | Balianddembe Joseph | M | BRIMME | 0 | OLT PARTY | - 6701853666 | 1 Ann |
| 4 | Nyatate Kabuko Bothy | F | Kusunger TK | H Inspector | Comail 10m | 0781981436 | AR |
| 5 | Kamalha Maureen | ł | Kisinga TCC | AEngineer | Keimallamaneize | 0716488606 | Nhalli- |
| 6 | Kasambargene Genikher | F | Kurinto Floom | | maentpheregm | un un offere | |
| 7 | AGABA DENICAH | F | 0 | | Denicagaloggam | 1.0701 9.50102 | AR 9. |
| | | | | - 1 | THE A REPORT OF THE IV V | | +n |
| 8 | KAKIONAKIO MOSES | M | KASSAG | Cimi cho | ess @ 3 math ce | 0288127262 | ALOSOS- |
| 8 9 | | M | Ktasar Kisimpile | PTR | KUNSZAKB | 0772983605 | Amoses |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M - 7



RECORD OF ATTENDACE MEETING REFERENCE: COMMUNITY CONSULTATIONS VENUE: KASITHU PARISH OFFICE KONDO SLOUNIT DATE: 19/10/2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|-----------|-------------|---------------|------------|-----------|
| | KARIANARIO MOSES | m | KASERE | Brischo | westskewsnews | 0758127262 | A Inteses |
| | Takwende Ivan | m | KASITHU | Persent | | 076102390 | Ja lo |
| 3 | Bwambale costa | m | Kasithu | pease | 1 | 07774276io | te |
| 1 | Kabanyera . Safina | F | 14osita | pease | | | 14.5 |
| 5 | MUHINDO AGINES. | F | Kosith | PEase | | | m.G |
| 6 | Kabutirula | F | Hasith | pease | | | 14.00 |
| 7 | MUSORI-DEVOTE | F | KASTTh | 11 | | 0787366966 | ES\$ |
| 8 | MASIKA - GORET | R | KASITA | ۱ (| | | |
| 9 | muhin Do Jddoy | FI | Isasithu | 71 | | 077904567 | 6 m k |
| 10 | masika Jannet | F | Ka Si thu | peasent | | 076069197 | 1 MS |
| 11 | Ring Brenta | F | Kasithu | peasent | | | BB |
| 12 | BHra Rosemary | F | Kasithu | Paasent | | | BREY |



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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATEF SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: | COMMUNITY CONSULT | ATIONS |
|--------------------|-------------------------|------------------|
| VENUE: KASITEFU | PARISH OPPICE/KNONDOSIC | DATE: 19/10/2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------------------------|--------------|------------|--------------|---------------------|--------------------|-----------|
| | KANANIGA EDSON | M | KASTIHU | | Kanangaadson Dama'i | 0758305259 "com | Audone |
| 2 | Bwambale youani | m | Kazithu | | 0-0-0 | 0761610474 | |
| 3 | KANYAHA JOSEPH | m | Kaenth | | | 0771449095 | (a) reph |
| 4 | Balvarddenke Joseph | m | ISTS AMORE | Sociolognes) | | 0751859666 | 3PS |
| 5 | · · · · · · · · · · · · · · · · · · · | | | 0 | | | |
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| | SCHEME IN KASESEDISTRICT M-12 Ministry of Water and Envisonme Republic of Uganda Ministry of Water and Envisonme Republic of Uganda | | | | | | | | | | |
|----|---|--|-----------|--------------------|--------------------------|---|-----------|--|--|--|--|
| | MEETING REFERENCE: | ECORD OF ATTENDACE EETING REFERENCE: <u>LCADERS</u> ENUE: MURIKUNIYU SUB COUNTY HALL DATE: <u>RO/10/2022</u> | | | | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | | | |
| | BUSAN RAFE WAN | M | Mustanyu | Subcounty a | HEF work-ble | 0772186510 | 3-A | | | | |
| 2 | VAGUSABE JOHES | F | MUNKUNTU | Planner | Valmasibeymes @ | ocn 73597409 | Red | | | | |
| 3 | MIGHT SUSAH | Ŧ | MUNKUNYU | tor cro | susannightig @ | 5781498475 | AB | | | | |
| 4 | BINGA JAWE | F | minin | panishchig | By Leucine Br | 0774408043 | Th | | | | |
| 5 | BIIRA SILIVIA | F | Kacungtro | | birasiliuia is a mai | a lower to be to the second second second | Rest | | | | |
| 6 | MRAMBU JANECIRACE | F | MUNICUNIU | A CLOUR'S ASSISTOR | Mandaubularegoodies | 0787447423 | -ATTAC | | | | |
| 7 | SUMBA SCOVIA | F | MUNKOPHU | SECRETARY | | 0761522288 | Saus. | | | | |
| 8 | TIBASIMIKA JACQUELING | F | NKUNYUI | 1/C MUNKONY | tibesimupper | 0172651435 | Jackiz . | | | | |
| 9 | Menon Ivan Kapuru | M | Munkunyu | AD | mbwakapun @ gmail.com | 0777309752 | 4 Am fue | | | | |
| 10 | Pasaviza Ausselr | W | Munkerne | 14 67.50 | | 0777293914 | - Aller | | | | |
| 11 | TINKASIMIRE LOUI | | Kacungis | ELDER | | 077878293 | TIL | | | | |



CONSULTANCY SERVICE FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWE U DISTRICT AND NYAMUGASANI GRAVITY. LOW SCHEME IN KASESEDISTRICT



| - | VENUE: MUNKUNU | | SUB-COUNT | 4 | DATE | : 20/10/202 | 2 |
|----|----------------------|--------------|---------------|-----------------|---------------------------------|-------------|--------------|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Mibust Simeon | N | NKunserI | ELDER | | 0784592559 | She |
| 2 | Balianddom Le Joseph | m | BISIMWE | Semia Socialona | | 0701259666 | - |
| 3 | KAKGANAKLO MOSCÍ | M | KASSESE | ami cho | nazyskaoonano 185 Og maik-oo | 0788127262 | Annocos. |
| 4 | BANUTURAK 1=18-50 | om | 12 stunger Sp | for L.c.s | | 0759737631 | Bartos |
| 5 | Bucusale 40753 | M | Kisingu | tor LC-3 | | 0774889730 | Topen |
| 6 | Luce vicent | m | Kiswao | woulder | | 078576397 | Jege |
| 7 | KASungho J | F | Kisinege | ~ | | 075057935 | . Kas |
| 8 | Kabugho Jertuda | F | Kisanga | | | | 3.1 |
| 9 | Masereka Francis | E | Kisanac | | | ~ I | ~ |
| 10 | KASORO TADEO | m | Kisanga | | | 0785383494 | K.T |
| 11 | ITTUNGU MANWERINA | F | Kisanga | | | | |
| 12 | JTHUNGU SADRESS | F | Kisanga | ~ | - | 07828216467 | J . Soel=055 |
| 13 | MUSOKI SIKOVIA | F | KISanga | | | 16 | M.S |
| 14 | BIIRA Teddy | P | 15. Janga | | | 0779943899 | BIT |



| | and a | Temperature E | | | SCHEME IN | TRICT AND NYAMU | | | 您 |
|----|-------|---------------|---------|--------------|-----------|-----------------|-------|-------------|------------------------|
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| | RECO | RD OF ATT | ENDACE | | | | | | |
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| | VENU | E: | | | | | DA | TE: | |
| - | | | | | | | | | |
| # | | NAME | | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | BA | UKUS | 2120410 | M. | MUNKONY | se appein | | 077.5677550 | anto |
| 2 | | | | | | | | 011361250 | party - |
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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHW DISTRICT AND NYAMUGASANI GRAVIT LOW SCHEME IN KASESEDISTRICT M -12-15

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RECORD OF ATTENDACE

MEETING REFERENCE: COMMUNITY CONSACTIONS 00/10/2000

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|-----|------------------------|--------------|-----------|-------------|--------------------|-------------|-----------|
| 11, | KAKIONGAKIO MOSES | M | KASESE | Gali CLO | 10245 Comart - Con | 0788127252 | Kenoses. |
| 2 | ISONGO SIMON | n | KISTALGA | CIP LCI | | 0788532377 | SID2 |
| 3 | Burgenbale M. Barnabas | m | Risanga | peasant | | 0789377454 | Month. |
| 4 | Bauk Aukanjo | m | Kilanga | perdand | | 078714646 | |
| 5 | marchi Jamos | m | Kisaga | Bola | | 07-81396946 | And- |
| 6 | NOUNGU JOSEPh | m | , | ~ | | | ND.F |
| 7 | MAISKA Sharan | m | | | ii 50 | | |
| 8 | Mikable Fredrick | M | | | | 2 | Freit |
| 9 | THEMbo Stivin | m | Kisanga | Mendo | 4 | 07606833 | |
| 10 | MUHESI MARSA | | Kisanepce | PecsiAnto | | 0778030 | 1 |
| 11 | mbambu Bibien | F | 161 Sanga | _ | - | 07783424790 | mb. z |
| 12 | SIBENdiro Joseph | m | | Reasonsi | | | |
| 13 | BIIRA Teddy | P | 19150nga | | | 077323059 | 00 |
| 14 | Bortunddense Freph | m | BIS | Sociologist | | 0777743079 | B.T. |

| RECORD OF ATTENDACE | | | | | | | | | | |
|---------------------|-------------------|--------------|------------|-------------|-------|--------------|-------------|--|--|--|
| | VENUE: KISANIGA 7 | LADIA | ig contine | 9 | DA | TE: | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTÁCT | SIGNATURE | | | |
| 11, | MBUSA RAFAIR | M | Kisanga | PECKSHAR | | 077929 \$111 | Song : | | | |
| 2 | MRUSA. Lidium. | M. | Rescuere | Peasant | | 0775-284133 | CHI. | | | |
| 3 | Burnhal Bambas | M | Kisanga | Peaspent | | 2787529130 | 6MASsonball | | | |
| 4 | | | 2 | 1 | | | | | | |
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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWESU DISTRICT AND NYAMUGASANI GRAVITICOW SCHEME IN KASESEDISTRICT M - 16 6

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| | VENUE: KYALHUGHU | THU | TRADING | CENTRE | DATE | : 20/10/20 | 22 |
|-----|------------------------|--------------|-------------------|-------------|-------------------------------------|-------------|------------|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1., | KAWENAKIO MOSOZ | M | KASESE | BASCLO | 111276 Kewaranoo 085 CJ Mark Cem | 0728127262 | thioses. |
| 2 | Bwambole Sele | m | Vy He Hu GIAN THE | PERSANT | | 0752225361 | fin. |
| 3 | John MBUSA | M | Kyalhughut | | | 0781980081 | John |
| 4 | MRSacka Harizon | М | Hyahyahit | malimi | | 0777661495 | - 44115 |
| 5 | Baluke Tadeo | m | Kyalhush | | | 07765-88348 | RIT |
| 3 | MULLINDO NOAH | - 11.1- | 1 Pi | | | 077220747 | ADui-u |
| 7 | Burnhale ONIZ | 10000 | 10 | A ibinba | | 018582400 | |
| В | gabulyEti Kule | n | Kynthighut | 2 Binbu | | | gn. K |
| 9 | Mouse Seti | m | liphigh | | 07 | 077163500 | ABU to |
| 10 | Bilra sitaluzi | F | K-YALhuth | | | | |
| 11 | manida Vot. | M | La LI Brai | | | 075429 | 046.9 |
| 12 | Mberte Juliu | M | in the second | | | 078424 | 0169 |
| 13 | mbambu Betridg | F | Kyalhughulu | | | 0785128699 | 1 total |
| 14 | TIBILI BYONU K. ASASIO | M | 11 | PEASANT | | 0775203360 | Fribillyni |

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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY LOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE MEETING REFERENCE: CONTINUNITY CONCEALIONS VENUE: KYALHUGHUIHU TRADING CENTRE DATE: 20/10/2022 SEX # NAME VILLAGE DESIGNATION EMAIL CONTACT SIGNATURE (M/F) 1 Seknapp Sdevesets Sellu m Kuahudauth 2 KyALHUGHUIHN PEASEUT Birg BETTY t 0782588988 B.L. 3 KyALHUGHUITAN PEASANT pulikeria muhinda F 4 Juliet 0975509372 mJ T Whisp DOGA masike PERSON 5 BALLIKY SELVERI Ky ALTHERHAN 10m PJ=454213 12 6.5 6 7 KARKI GHUTH PEASMIT MBAMBY MARGRET 07830 64555 MARAN MARCO 7 Enerto Maden Jackson #A 0760776564 u! 11 8 MWE Seria Socidegist m aliandense Jooph H 0701859666 9 10 11 12 13



| | RECORD OF ATTENDACE | TEM IN | | KASESEDISTRIC | JGASANI ONAMI | MINISTRY | OF WATER AND ENVRONMENT |
|----|---|--------------|-----------|--|-------------------------------|-------------|-------------------------|
| | MEETING REFERENCE: VENUE: KYAKAGONZI | | H LOUATIV | HALL | DATE | 21/10/201 | 22 |
| | VENUE. N ISKITONE | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Mberg Stephon | M | Namugasan | CIPL:CUI | Reverse phon | 0772920870 | No book |
| 2 | Burnbaletohne | -n | Marature | HU | Emerces | 0776858677 | (Pri |
| 3 | KARUNGII LIDIA | F | 159921 | Guo | Kesman Fie | 0783028999 | Krydig |
| 4 | JB - Balicu Odembe | m | Bismuin | Senor Sociation | act | 0701834666 | The C |
| 5 | Ngazzi-BVnot | M | Komuli | SES | | 9 077524B | 48 678 |
| 6 | Monday Jacob | m | pwentutte | Councillor | | 075459974 | s mile |
| 7 | Kagnin SAM | m | ISAAZi | COUNCILLON | | 070375202 | 0 |
| 8 | NORMURANI AMOS | M | K-pserda | contillor ta | + Utmasegn | | tr.P |
| 9 | MBEZIMA PHOEB | F | Kakonie | councilla | | 0739313319 | NEP- |
| 10 | MUGHENHI LINCORN | m | Kyasenda | | Lincornmyteryi Ramail. Com | 07-98771091 | 41-7 |
| 11 | KOBUSINGYE JOVIA | F | ISAAZI | concloter | Con an com | 0773912426 | VI |
| 12 | BULP LOICE | F | Lowe | of the local division of the lateral division of the local divisio | | 0779947546 | Lis. |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



| RECORD OF ATTENDACE | | | | |
|---------------------|------------|------|------------------|---|
| MEETING REFERENCE: | Leabors | | | |
| VENUE: NMAKATON ZI | SUB COUNTY | HALL | DATE: 21/10/2022 | _ |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|----------|-------------|--------------|------------|-----------|
| 1 | KALUNGU JAMAS | M | RWENTUHE | enuneil | | 0992924521 | Kalning |
| 2 | NJUNG EDWAND | m | SIC HAVA | P/2hmet | | 677283037 | |
| 3 | KAKGONGARGO MOSES | M | | amí cho | MOZIEKONONAS | | 16 |
| 4 | | | 1 sacan | win cho | COM | 0788127252 | Knoses |
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| | CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M - 8 F - 2 | | | | | | | | | | | | |
|---|---|--------------|---------------|--|-------------------|-----------------------|-----------|--|--|--|--|--|--|
| | RECORD OF ATTENDACE MEETING REFERENCE: <u>LEADERS</u> VENUE: <u>KINYBANASEKE FICOUNCIL HALL</u> DATE: <u>211012022</u> | | | | | | | | | | | | |
| | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | | | | | |
| | KYAMAKYA GONEST | M | KNYAMASERE | CIPL'an | Kynnessenst Dr. | 0774408095 | The are | | | | | | |
| | BRIGHTI GABRIEL | M | KINHAMMALEKE | OUT | puribright to Cam | and the second second | boa-is. | | | | | | |
| | Hon nuesige moses | m | Kingomaseka | sec for 2 works | | 0777744486 | Jung | | | | | | |
| | MULTIWA AGANATIA | m | KINYAMASCH | CE SAA | 07626344406 | 0773980001 | Artia | | | | | | |
| 1 | BUJUNG BEATRACE | F | hin-jamassi)4 | SEC for Social Servic | e e | 07.755203241 | PR | | | | | | |
| | BNAMBACE JULIN | M | 12 | ArticTAT | | marco 0782660 | a there | | | | | | |
| Ì | MLINDA XBRAHAM | M | LINAMASEKET | production | | 0742396008 | TR THE | | | | | | |
| 8 | JB Balianddembe | m | | Senior Soat Loop | 54 | 0701859666 | TTP- | | | | | | |
| | | F | Vin yamascike | | | 0784183767 | Kannit | | | | | | |
| 0 | KAKIONAKIO MOSES | M | KASESE | ani cho | | 0788127262 | -# | | | | | | |
| 1 | | | | and the second | | V1001011104 | -Empses | | | | | | |



SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW

MINISTRY OF WATER AND INVPORMENT REPUBLIC DE UGANDA

RECORD OF ATTENDACE

NEETING REFERENCE: COMMUNITY CONJULTATIONS VENUE: MUGHANZA KLATER TREATMENT PLANT DATE: 27/10/2022

F-12

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|----------|-------------|-------|------------|---|
| 1 | MBAMBN LEVINA | F | MUGHNZA | PEASANT | | 0782434461 | ML |
| 2 | PURAMBALE ABSALO | | MUGHANZA | LCID | | 074152562 | () |
| 3 | MUHINDO JOEPRED | 101 | MUGHAN2A | | | 0776929862 | and the second se |
| 4 | MUTHAKA APRUNALI | M | MUGHANZA | PEASTIJT | | 0774677713 | - |
| 5 | MBAMBU EMMANUELL | F | MUGHAN2A | PEASANT | | 072763289 | _ |
| 6 | KABNGHO JANET | F | MUGHANZA | PEASANIT | | | KIJ |
| 7 | MASEREKA NELSON | M | MUGHANZA | PEASANT | | 0776739327 | dif |
| 8 | BUIAKYA BITRANCE | F | MUGHANDA | PEASANT | | 0, | |
| 10 | Brign bale Mosis | M | Mughanza | pegsont | | 0775302078 | Thit |
| 11 | MASEREXA ASASIO | M | Mughanza | Peasant | | 078763200 | SAR |
| 12 | Bira Regina | F | mughanza | Peasant | | | B-R |
| - | Kabugho zaula | F | mughana | peasant | | 0762381808 | 2.1 |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWIEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REPERENCE: Comp | MUNITY CONSULT ATIONS | |
|-------------------------|-----------------------|------------------|
| VENUE: MUGHANZA | TRRAFIMENT PLATUT | DATE: 27/10/2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | S GNATURE |
|----|---------------------|--------------|-----------|---------------|-------|------------|-----------|
| 1 | MBWANZA B JOHN | M | MUGHANZA | PENSMUT | | 07603720 | 7 Abelin |
| 2 | MUSHINGS AGARESS | Ŧ | MUGHANIZA | REASANT | | 076210282 | s Agress |
| 3 | Muhindo Auguste | as M | hughor | PESANT | N. | | 7595. EAA |
| 4 | Billio Eveniline | | muqueinza | | | 5772382678 | |
| 5 | Bwambale L | | Mughanz | | - | 0741204659 | 1 |
| 5 | Tom Kayanda | m | mighawze | | | 0783345261 | |
| 7 | Masika Daudati | F | mughanga | | 1.2 | | b.m |
| В | mbamber FLorg | F | mughanza | | | | D.m |
| 9 | Musika Many | F | mughanza | Peosant | | ~ | mon |
| 10 | Balianddenle Joseph | M | BISMUE | · Sociologist | | 0701859666 | H |
| 11 | 1 A. | | 1 | | | | |
| 12 | 1 10 10 | | | | | | |



| | Lucana Cond Bandware | | SCHEME IN | KASESEDISTRIC | F - 11 | MINIST | TY OF WATER AND ENVRONMEN |
|----|---|--------------|--|---------------|------------------|------------|---------------------------|
| | RECORD OF ATTENDACE MEETING REFERENCE: | | ANUMITY ADING CE | CONSULIATIO | DATI | : 30/10/2 | 022 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KAHIDALAKIO MASES | In | KASGEZ | GIMÍ CLO | 6.85 Contraction | 5788127262 | Thurses |
| 2 | KARUGHO JULIA | R | XASIEMIRIS | 6 | | 0781571066 | 2 |
| 3 | BILLA ELIZABETH | | | DENSANT | | 0773227189 | |
| 4 | Visembo sulan | 1 | and a second | PENSAN | | 07732271 | y Kisen |
| 5 | MASEREVA GUDISO | M | Kascmie | | | - | Atto |
| 6 | MUHINDO NEVELE | | Kaschire | 1 | | ~ | MART. |
| 7 | NZABENE LOSET | E | rasomie | Peasant | | 0775516287 | Neoret |
| 8 | K-IAKIMWA MAGA | ET F | | PEASant | | 07777604 | by marcil |
| 9 | mba mbu mahu | 1 | | PFasant | | DITILRI | 722 Make |
| 10 | NZOBINDO CUALES | m | KUAN 20BIAI | peasont | | 0774686185 | 12 · C |
| 11 | KULE Pauli Sikiryasosi | M | Kasemire | Peasant. | | 0788635804 | Attpart. |
| 12 | MBAMBU VALERIA | F | Kosemire | peasent | | 0774145581 | m.V |
| 13 | mulihindo | F | Xasemine | peusonb | | 0786761870 | m |
| 14 | Kinyabwire Joseph | M | Kasemire | Regiant | | 0781109350 | Kil N |

| 1 | |
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| | Sucara area |
| | ENVER |
| | Call Freinen |
| | C Property Managari |

CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHW LU DISTRICT AND NYAMUGASANI GRAVITIC LOW SCHEME IN KASESEDISTRICT



| # | VENUE: KASEMIRE NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------------|--------------|-----------|-------------|-------|-------------|-----------|
| 1 | MBAMBU BENTRICKS | 1= | XASEMIALE | DeaSart | | 0784449673 | m.B |
| 2 | MASEREKA DAGHARA | m | KASEMIRE | PEGSANt. | | 07818220009 | mip |
| 3 | MUHINDO ROSEMARY | E. | KASEMIRE | peasant. | | 678610 9657 | m.Q. |
| 4 | BIMBAMBU NYAWILI | F. | KASEMIQE | peasint | | _ | n · N· |
| 5 | Burmbelle passicle | M | Darconin | Deagant | | 073931079 | 4 Hatries |
| 6 | BALIKUDDEMBE JOLEPH | m- | Bismwe | Sabbaist | | 07518556666 | HE . |
| 7 | | | | 0 | | | |
| 8 | | | | | | | 3 |
| 9 | 16 | | | | 1 | | |
| 10 | | | | - | | | |
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| 12 | de la | | | | | | |
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| 14 | | - | | | | | · · · · |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M - 31



RECORD OF ATTENDACE

| MEETING REFERENCE: | COMMUN | MY CONSULTATIONS | | | _ |
|--------------------|---------|------------------|-------|------------|---|
| VENUE: NSCALT | TRADING | CENTRE | DATE: | 30/10/2022 | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----------|----------------------|--------------|-------------|-------------|-------|-------------|-----------|
| 1 | BWAMBALE JANES | S | NSenyi | 34386 | | 0782150781 | 25.06 |
| | Muhindo ERi | m | NSensi | | | 078373693 | 7-50-7 |
| 8 | BALUKU Mughengini | m | Nsnui | | | | |
| <u>.</u> | Kakusi mataya | m | Bulichisa | | | 0776951581 | |
| ŝ. | LHUHALIAN KELLIAMIT. | M | NESENY | 1.6 | | 0792028453 | T.W. |
| 8 | Sabiti Netten | m | Nisen! | | | 077423007 | SAGAT |
| N | Kasitori Soma | M | Rusese | | | 1 1 1 1 1 1 | Soma |
| 1 | Baluku WILSon | m | Buzra | | | 077555748 | BIW. |
| 0 | Bouche Mosas | m | Nordi | - | | 677 0782637 | workers |
| 0 | Jana Lulo Kong | nn | Useny | | | 0779630693 | A |
| 2 | Byanchange david | m | Lisenyi | | | 0784112181 | Bd |
| - | Balituddenie Jriph | m | Stadiogiel. | | | 0701859666 | TR |





CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



| RECORD OF ATTENDACE | | | | |
|------------------------------|--------------|-------|-------|----|
| MEETING REFERENCE: COMMUNITY | CONSULIMIONS | | 1 | 1 |
| VENUE: MEETTY TRADITIG | ETTRE | DATE: | 30/10 | 22 |
| VENUE: 1 DECT 1 THESE THE | | | 8 | 1 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|----------|-------------|-------|------------|-----------|
| | makanka Joren | m | Buzz | stada | | 0788861031 | m Joseph |
| 2 | Musianika Jeseph | F | Buriera | Bucanesawa | | 0282702590 | - |
| 3 | DODRAR TOLIKISK | F | MWE BIJ | Socialist | | 0703001101 | AL_ |
| 4 | SION AMATUHURIRA | M. | MULE BIS | VALUED | | 0772908923 | Alteria |
| 5 | DAVID SSEMPALA | M | NWE/BTS | YALUGE | | 0701575403 | atsiat |
| 6 | JOSEPHINE NALULE | F | MUE/BTS | SURVERR | | 0753191504 | Pent |
| 7 | CAROLINE AMATO | F | MWE/BTS | SURVETOR | | 0750508172 | Arlei |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | 4 | | | | | | |
| 11 | 11 | | | | | | |
| 12 | | | | | | | |

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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT

MINISTRY OF WATER AND ENVRONMENT REPUBLIC OF UGANDA

RECORD OF ATTENDACE

VENUE: NSCATEL COMMUNITY CONSULTATIONS DATE: 30/10/2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|------------|-------------|-------|--------------|-----------|
| 1 | Muhindo to pasito | e m | KaBira | Cameri | | 0782/4735 | : M- |
| 2 | Busambale Kinter | M | Karambi Gu | | | 078142262 | B. late |
| 3 | Muthani Peter | n | Karambi Ce | 1 pensons | | 0782764529 | m. Reter |
| 4 | Balwellts kangs | M | Namyi | × 1 | | 0786964 | = MPans |
| 5 | Busanbale mores | m | KATLINURA | RUCA | | 07735107 | n mose |
| 6 | BWAMBALE AGANTIYA | m | Kabira | 11 | | 078869643 | BA |
| 7 | THEMBO ERISA | M | BUZRE | T. | | 0750837104 | Alle |
| 8 | Kanwa Beney | M | Nsenyi | peasand | | 677218453 | 2 Jules |
| 9 | Malidadi Mulindo | m | NSeniji | Leasant | | 04737/5830 4 | Hulmit |
| 10 | mukoby Jului | m | NSenje | Preasent | | 0757529.9 | |
| 11 | masereka Jimmy | M | ko | parset | | 0760838926 | k.J.B. |
| 12 | Muhindo Greof | M | Nsenyi | persant | | 0788412758 | Acafuj |



| | CONSULTA SUPPLY SYS | NCY SI | BUHWEJU DISTR | IA AND RAP FOR RICT AND NYAM KASESEDISTRIC | F - 3 | | V OF WATER AND ENVIRONMENT REPUBLIC OF UGANDA |
|----|--|---|---------------|--|---|------------------|--|
| | RECORD OF ATTENDACE MEETING REFERENCE: VENUE: <u>MUHOKYA</u> | and the second se | | ONESULIS | a second s | : <u>3110</u> 62 | 022 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KANONIANO MOSES | M | KASEEC | RIMI CLO | NOZILSKOWOTUWE 193 Q.J MORLOW | 0785127262 | AKHLOSES. |
| 2 | DAVID SSEMPALK | M | LASESE | GMT /BTS | | 0701575903 | Tootu |
| 3 | Guma Robert | m. | Mulhalt 2 | LOTI | - | 67795547 | And |
| 4 | Balipuddemte Siseph | m | MARBIS | Senir Socialogia | | 0701859666 | The |
| 5 | THEMBO ERIKANA | m | michopera | LEA | | 077897284 | tando |
| 6 | MASSIGGED TRASI | m | MUHISETH | SPERMER | | 0785102121 | me. |
| 7 | KABURING GERTENS | F | Muttorcys | Seremy | | 0773651600 | Gur- |
| 8 | Adin Lincholin | F | mehoraik | HA | | 078390713 | the- |
| 9 | Bigemere Aldalalitu | M | Muhokya | LCICIP | | 0702663222 | Alfigene |
| 10 | 1thungu Fennifer | F | muhokya | PTATIC | | 0783914753 | Fingu |
| 11 | Kato Jowasmi | m | KISONGORA | Vilcam | | 078691637 | -700 |
| 12 | MUSABE LEONARD | M | KISONGORA | CIP | | 0782872447 | |





| RECORD OF ATTENDACE MEETING REFERENCE: | Communo Br consu | KINTIONS |
|---|------------------|------------------|
| | TRADING CENTIRE | DATE: 31 10 2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|-----|------------------|--------------|--------------|-------------|------------|-------------|-----------|
| 1 | MARY MRUPA | E | Winesleerbal | Peasant | | 0798197991 | mause |
| 2 | CHRISTMAS NAPHAE | F | NHAKABALE | STUDENT | | 0772919076 | 9 |
| 3 | Kikege Horelin | n | Kehororo | BUSINES | | 078750386 | |
| 1 | mulindo your | m | Ruswagha | | | 078215476 | 1 |
| 5 | milinto villion | | Nyakabal | | | 07842113 | 110 |
| 3 | Mubindo IsmanL | | Busuagua | Imans | | 07758328 | |
| | Balluci moses | m | mughete | Russess | | AAURIAN | Rowi |
| , , | MOT ATA | F | Makabale | | abight Try | THOUSIST | THU |
| | KABUGHO QUEENIY | - | Nyakabale | | Com | 075181928 | Grankes |
| 10 | Kibaba Francis | m | mughete | Driver | | 0753766059 | Khancis |
| 11 | Masika Kataling | | mughete | Farmer | | | m.E |
| 12 | Singesimer Ci29 | F | Mugheto | peasant | | 097-4310990 | BG |





RECORD OF ATTENDACE

MEETING REFERENCE:

| VENUE: MUGHETE | E Trading | Centre | DATE: 31 10 2022 |
|----------------|-----------|--------|------------------|
| | | | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------|--------------|----------|-------------|------------|-------------|-----------|
| 1 | MASEREKA ISAAL TASOM | m- | MUghpte | | | 0779941772 | me. |
| 2 | MARERELO Amoro | M | mugnicle | | | OF 8 FOTOSS | 1 |
| 3 | TEM 60 DNIZI | m | 11.11 | | | 0772860 | 11.02 #1 |
| 4 | mighendenin Lunce | m | BUSDAP | | _ | 0775923.65 | W II |
| 5 | Baluka ERISA | M | myghete | | - | | Anis |
| 6 | Kule Zalay | in | | menser | 4.102001 | 6077298560 | |
| 7 | Maloneka Jurgeon | m | maticte | | Contesting | 61293183 | Sume . |
| 8 | Longino mabani | m | manche | | | 0773985916 | las |
| 9 | KULE KITZA | M | mughet | | | 67860392 | fil |
| 10 | much boks | son | nughte | PlChner | | Otta Gm | P. No |
| 11 | Baliendembe Trop | m. | Bis | Sociologist | | 0711859666 | 500 |
| | | | | 0 | | | |







RECORD OF ATTENDACE MEETING REFERENCE:

| | VENUE: | | | | DATE | | ~ ~ |
|----|--------------------|--------------|-------------|-------------|-----------|-------------|-----------|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | Richard Bumbale | M | | Famina | | | Bombale |
| 1 | BUNHANTELLE YOFES, | | | Familitar | - | 078214712 | By |
| | brambalo SADDACE | | | Finit | | 0774805476 | the ! |
| | BASHBASA | m | | Fanks | <u> </u> | 077365135 | 5 Ems |
| | Francis Suduelo | in | | tanh | 1 | 078416584 | 3-22- |
| | BACIHENE NASURUBIN | M | BUSWAGHA | STUBENT | | 0787193335 | - |
| | SIMIRIAN TAYIRWE | M | MUGHETE | Farmer | | 0782750102 | Ser PD |
| | Enos mulengo | in | mughete | Lay Reade | - | 07796766E | |
| - | BIGAMBO ALLAN | m | NYakenac | | | | bigambe . |
| 0 | Lisence Bac | 3 | NYAKABARE | Brutte | Lisme enc | 0789457793 | Bridge |
| 11 | THASOMA SAIMON | m | MUGHETE | FERMER | - | 0773562211 | Suge |
| 12 | KULP Jones | N | MUGHETE | | | 0774 522239 | deja |
| 13 | Kygbvilne Tadla | m m | Mughete | Tailar | | 377800 455H | 4-18 |
| 4 | mburanza philip | M | lighter cal | Formar | <u></u> | 0775923127 | Kubs- |

| | - | | | N KASESEDISTRIC | R BITSYA P. IUGASANI GR CT | | STATUS AND INVIOLMENT REPUBLIC OF USANNA |
|----|---------------------|--------------|-----------|-----------------|----------------------------------|-----------------------|---|
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | | 15 | | | | |
| | VENUE: | | | | D/ | ATE: | |
| | | | | | | | |
| # | NAME | SEX (M/F) | | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 2 | Katukevine Gete | 2M | mugele | BUSINEX | | 6773/1116 | 1914 |
| 3 | Kikuly Josephit | m | KIIMBU | Fornier | | 07991337 | |
| 4 | Rhampeli Roma | n | Kychineca | 1.1 | ~ | and the second second | - |
| 5 | Hosia Paleta | m | mughte | formion | _ | 07729900 | 6.87 |
| 6 | BALUKU JOHARD | m | BUSWAGHA | FARMER | | 01763921 | CHR ' |
| 7 | BURA EVALIN | NE F | | | | CI ICS III | |
| 8 | Mullindo maga | F | Marcabale | Forvine | - | 67 | Mm |
| 9 | KINGE Galan | Pm | Nyarabo | le formas | | 07#51968 | |
| 10 | mumbere BREA | V m | Nyalh-eye | 11 | | 07605375 | - 1 |
| 11 | MUKUNDI ALBLAT | m | Nyokeya | IJ | | 076080020 | |
| 12 | | | Nakamble | | | 078598923 | |
| | THEMBO ZADOKI | M | nyakamble | TL | ~ | 0778304534 | TZ |

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| attra | 1 |
| Gell Eiginan | 5 |
| Contraction of Project | 9 |
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RECORD OF ATTENDACE MEETING REFERENCE:

| # | VENUE: KIRAMBAIRO | SEX | CONTRACTOR AND A CONTRACTOR | XIIRE | DA | TE: 31/10/20 | 122 |
|----|---------------------|-------|-----------------------------|-------------|----------|--------------|---|
| 1 | | (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 2 | Thembs Augustine | m | KiRAMbaira | Parmer | - | 0774194098 | T.G |
| 3 | Kakuti m' Amzalen | n | Nyabible | | - | 078781440 | |
| 4 | Masseella Lobor vy- | m. | N | to prosont. | - | 07748515 | the second se |
| 5 | Bighanza Erican | m | Nyakabale | Fermer | -12 | 0775742664 | Alar G |
| 6 | MWANGUHYA AMOS | m | VILLAMBAHA | 0 | - | 0780312533 | |
| | KASANDE JULIUS | m | Keptoky A | 11 10 | - | 0741620500 | 14 |
| 7 | Busanbale | m | Cocovey | 1) | - | 0/83758273 | 1. |
| 8 | Kunquimbire wille | m | | V | | | Kilt. |
| 9 | matayo water | the M | Kelhansbeiro | 1 1 1 7 | Print in | 078274808 | the second s |
| 10 | murangulista Nasan | | 191/hand | 14/2 | STV. | 20234150 | |
| 11 | mas or ter nifred | M | Kilambino | al l | - | | 1405 |
| 12 | MASERFIGA DANIEl | m | 14 them barro | villades 1. | 12 | | Hanno |
| 13 | MBakubanha etiyen | m | Kilhanshan | | - | Tribujes | 1.1 |
| 14 | Bwomhahe Joward | | Kilheimharro | dep. | - 1 | V | BJ M |
| 5 | mwangunga zefenia | m | Tilhandaoiio | Realand | - | and might | M.Z. |
| 5 | BWAMBALD ABRAHAM | m | NYAKabala | A possibil | - | 0784636954 | BA |

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RECORD OF ATTENDACE MEETING REFERENCE:

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------|--------------|-------------|------------------|--------------|----------------|-----------|
| 1 | Muhasa Asapri | m | NV914 aming | Lamer. | 077348754 | - | Adul |
| 2 | Ababake Elizabeth | F | | Bussingebran | -110401- | 078/051622 | |
| 3 | Bwambale Haber | in | Kilhambai | peasue | 07893,6468 | C ISIN DILLARS | N.S |
| 4 | THEMBE Nona | M | Kilandivo | | 0788776491 | - | Nona |
| 5 | Hypra Reservi | m | Kianhio | Care | 0441195140 | | du |
| 6 | Inventurya kest | m | kilhombaile | | 0779015637 | - · · · | Turk . |
| 7 | Kimende David | м. | Nymdes | Requet | 076261874 | _ | IN M |
| B | Jengaganda David | m | Gret | Dover | 5705818015 | | S.S |
| 9 | NUMBERE AUGUST | M | Killiambook | P TUSIPOS | DITTAL | | tur |
| 10 | Broundale Joon | | without | 15 . | 098-43 Giras | and a state | AR |
| 11 | Kuli Kibuba Ronald | M | Kilaupma | Sugar l. | T175601718 | | Royal &. |
| 12 | Mhuse Mustarfa | m | Kothenban | Teacher | 1782 20163 | | Australa |
| 13 | MAJERAKA DOMIAND | 19 | Killamenso | 111 | 0760813186 | - | KAR |
| 4 | Boluzy Josenwij | 1 01 | Kelambain | Pratant | 0 78920 5400 | | Bar |
| 1 | Balikudekobe Joseph | M | BTS/MOE | Serier Socialgit | 0 | 0701859666 | SE. |



| 100 A | RECORD OF ATTENDACE | | | I KASESEDISTR | | | ADITY OF WAITS AND DY ROMAINY REPUBLIC OF DEANDA |
|---------|------------------------------------|---------------|---------------|---------------|-------|------------|---|
| ALC: NO | MEETING REFERENCE: VENUE: | | | | DAT | E: | |
| | | | | | | | |
| à | a. Nome | 1SEX (MIE) | WILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | 1 NGUNUNU JOSEPH | M | KILHAWARATIRO | FARM 62 | - | | Nons |
| | 2 Mbusa Steven | m | Kilhandan | 11 | | | M-S |
| | 3 KANZ ADOL MASEREKA | Na | 11 | 11- | | | M.M. |
| | 4 Mbaluhembastevin | Mi | NJakabala | | | 078726994 | |
| L | 5 Muhinio AlFired | M | 1011hambarro | | | 0787392076 | MF |
| | ⁸ Kabole simion | M | Migreenlal | | - | 077359451 | Kashala |
| | Raturku Agustine | m | | | | 1 | |
| I | 8 BINA YERESL | F | 1 Sul-Int | | | 1 | Bura y. |
| × | " Jostes' numer | m | | | | | |
| | 10 Zephania nua | M | 1.500 | | | | |
| 2. | 11 Kule Alexation | M | KILL | | | 17519643 | |
| E- | 12 nuapplya, ENOR Kabo suha Mhu | a M | | | | | mbridge |

CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M-56 INT OF WATER AND ENVIRON FURINE OF DEALINESS F - 18 RECORD OF ATTENDACE Community CONSULIATIONS MEETING REFERENCE: VENUE: KINYATEKE TRADWG CENTRE DATE: SILIO 2020 SEX NAME VILLAGE DESIGNATION EMAIL CONTACT SIGNATURE (M/F) 1 Farmina F Noteke Kangoro mk Mari TLOT135/4 2 F Violet Maheze. primina 711225 3 KULE DINAG M (MAS 0787597467 imi 4 - Kunest M mulin 745597 4940 5 3 Muten Teke 0773642387 M heerent 6 KIMVatelle river 076002630 RO LUKA LISWANDA 7 - tote Capenter 0703363521 Tinyatere M IANKALSD) UINERIG 8 0731952561 Copenta Mundateke Jose paul m 9 Peasant 07753332224 14 Kingtebe Timothy ahampih 10 CS CamScanner LEBAYANDA ELINS Isdayanda Espinari 0773194187 leacher Kinysteka M 11 0775516276 escal Muthahinga Jocknus M Kungetel 12 Reunisthewiger PETSANT 28457084 MUTHATTAN GA JACKSON





| RECORD OF ATTENDACE | |
|--|------------------|
| MEETING REFERENCE: Community Consultations | |
| VENUE: KINYATERE TRADING CENTER | DATE: 31 10 2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|---------------|-------------|-------------|------------|--|
| 1 | Baluku Vicento | M | Kinyateke | | VICENT Dawa | 0771440433 | and the second |
| 2 | Masika Agners | F | Knyatore | | | - | M-A |
| 3 | Buambale rosofu | m | Kinyateka | | | 077647340 | |
| 4 | Millimbe Longno | m | Knyalas | | | 078253029 | |
| 5 | Hotofo Stephen | m | Engatere | | | - | H- stept |
| 6 | Baluke apples | M | Wingatesie | | | 070336267 | 0.0 |
| 7 | BALLIKU MATAYO | m | Kingeter | 1 | | 0781850189 | Bim |
| 8 | MULLINDO DIJUROSE | F | 161 n-19 Leva | | | 0771039973 | IDTR |
| 9 | Billa Heresi | 7 | Knygteke | | | or othe | BJ |
| 10 | Feresty Kilmas | F | Kingater | | | | Restri |
| 11 | KABUGHO SOUT | F | Kingatere | | | 070719663 | Garet |
| 12 | Bahiku Nelson | Cr. | Hugateke | | | 0753971484 | Binels |





CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| | | 1 CONSULTY | | |
|----------------|---------|------------|------------|-------|
| VENUE: KINTATI | the Tro | DING CONTI | DATE: 3110 | 12022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-----------|-------------|----------|------------|-----------|
| 1 | Mutolo Take | M | | Michanic | _ | · _ | MP |
| 2 | KUZA WELSON | M | Kingateke | 1 | < | 07847589 | |
| 3 | HON MARSERS PAUL | M | KINHATEKE | | - | 078076404 | 1. |
| 4 | BILRA MARY | F | Km yA TEK | FAMIERS | 4 | | B·M |
| 5 | 1BANGO SUZANA | F | KINATERE | | _ | 0751730302 | susan. |
| 6 | KABUGHO VIOLET | IL | KIMMATERE | FARMES | | | K.V |
| 7 | BILDA JENIPOZA | F | KINYATEKE | PADMERS | <u> </u> | 0701887826 | BIT |
| 8 | BILDA PEDEPETUA | F | KINYATEKE | farmer | | 0781831620 | B-P |
| 9 | KULE MUSYANGENDO | ng | KINYATEKE | Former | - | 0742495200 | 1111- |
| 10 | LSEBAKARYA PHILLE | MONON | KINYATZE | Farmer | _ | 0774056 | |
| 11 | Mumbere Josia | | Kimateke | ferm | | 6178953420 | teral |
| 12 | | | impaterie | | - | 5785106918 | |

| | The Contract | | N BUHWEJU DIST SCHEME IN | KASESEDISTRIC | г | | TT OF MATER AND ENVIRONMEN |
|---------|-----------------------|--------------|-----------------------------|---------------|-------|-------------|----------------------------|
| | Ŭ | | | | | | NEPUBLIC OF UGANDA |
| | RECORD OF ATTENDACE | ~ | - | 121 (L. 14) | | | |
| | MEETING REFERENCE: | | moning | | | | |
| | VENUE: KINYATI | REG | TRADING | CENTRE | DA | TE: 31/16/2 | 022 |
| | | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Kule haurent Sitellow | in M | Revashije | reasent | - | 20112525705 | For |
| 2 | Bilhaghinna Johns | 1.00 | Rwabihung | peasent | - | 07887336 | 95 Barry |
| 3 | Kibunea FELESIT | | Kinyateke | peasent | - | - | M.F. |
| 4 | Bunknege DelSon | m | Ruchilin | Rosent | - | - | BN |
| 5 | MASIKA ANIFA | F | Kin Yatake | Peasaul | | 07603415 | AT. |
| 6 | Bira latraci | F | kinvertake | PreiSeal | | ARYUKCEN | - Hong |
| 7 | RASIGHOWIEJA SELAND | m | Kungase | 11 | | | BAL |
| 8 | BWAmbale Joseph | | LiwYATEKE | | | | 1990 |
| | MABBE SAINON | m | Knyleter | 1.1 | 13 | 11 | 20 |
| 9 | | M | KINJAKKE | (1 | - | 073460243 | tel |
| 9 10 | BALYKY GODWIN | | | | | | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: | NUNITY | CONSULT | ATTONS |
|--------------------|---------|---------|------------------|
| VENUE: KINMATEKE | TRADING | CENTRE | DATE: 31 10 2027 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------|--------------|------------|-------------|-----------------|------------|-----------|
| | THEMBO WILLYOMOON | m | Kingetek | | | 077253085 | thembs. |
| 2 | BUMBLESE ARRAHAM | m | KINTALAK | | | 0782778182 | |
| 3 | Lebry Salt M. Robert | M | flingetere | | Mrueb p.b Qgm | 787340458 | There - |
| 4 | Namusake Gladuse | F | Kinyatake | | | - | NGP |
| 5 | Kikeghet Stephen | M | Kintatelee | | | 0782049940 | |
| 6 | Mughumberroa | M | Knyatek | 0 | | 0784851135 | |
| 7 | Mabese Negio | M | Kinyatek | | | 670336095 | 11 |
| 8 | JUMA MULITHO | M | UNA ATOLE | | | 0772584108 | |
| 9 | hur moreos | nu. | Kingpitch | | | 07547932 | Ber |
| 10 | BARMBALEJOTHAM | m | Kinyateve | | procendare acon | | |
| 1 | | | Kiny texe | | magerera | 0781731270 | B.T |
| 1 | 2 BWAMBARE JOZEPH | | Kinyateke | | | · | NA |





| RECORD OF ATTENDAC | E | | | | | | |
|--------------------|-------|------|------|-----------|-------|------------|--|
| MEETING REFERENCE: | Commu | MITY | Cons | ULTATIONS | | | |
| VENUE: KINY | ATELE | TRAD | INGI | CENTER | DATE: | 31/00/2022 | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-------------|-------------|-------|------------|-----------|
| 1 | Mbusa Herring | ~ | Kingsteice | | - | 07033645 | ay |
| 2 | Kangentu yo Jimmy | m | Kinyoteke | | | 0779993736 | |
| 3 | BWAMBARE RAULANS | n | Kalere | .* | | 0707795684 | 111 |
| 4 | BALLE, TOHAISON | m | Kinyateke | | | 078228175 | |
| 5 | Mumbere Coline | m | Kanyateke | | | 07068464 | |
| 6 | Biira Kezia | F | Kinyateke | | | 0707875 | |
| 7 | TSONGO SAIMON | m | Kingaty | 2 | | 078775 | 7438 75 |
| 8 | multeringa Moses | h | Kinyatesce | | | 077562344 | A THE |
| 9 | Muribe possino | M | King fet | L | | - | Mpos |
| 10 | Moserecce Mex | M | Kin jaleice | | | 075524855 | I Alex |
| 11 | Marchi Alex | M | Purchihanga | | | 5771155350 | MAR |
| 12 | Bibarobale Johnm | m | Kingedere | | | 578232901 | Shuam5- |





| | RECORD | OF A | TTENDACE |
|--|--------|------|----------|
|--|--------|------|----------|

| MEETING RE | FERENCE: COMMUNITY CONSUL | TAGIONS |
|------------|---------------------------|-----------------------|
| VENUE: | KINYAIEKE TRADING CET | TRE DATE: 31 UCT 2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|------------|-------------|-------|------------|--|
| 1 | Muhindo Scovia | R | Kongatero | | | | M.Score |
| 2 | Thankithe zakayo | n | beimosteke | | | 077259846 | 7 Ti Zaka |
| 3 | Kasitles Emmanue | m | Kingsteke | | | 0754636943 | K- Onenu |
| 4 | Baliaddembe Jup | m | BIS | Sociológ SI | | 070889666 | まま |
| 5 | Kawonawo Moles | m | BIS | clo | | | MAS_ |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | 14 July 14 Jul |
| 9 | | | | | | | |
| 10 | | | | | | _ | |
| 11 | | | | | | | |
| 12 | 2 | | | | | | |

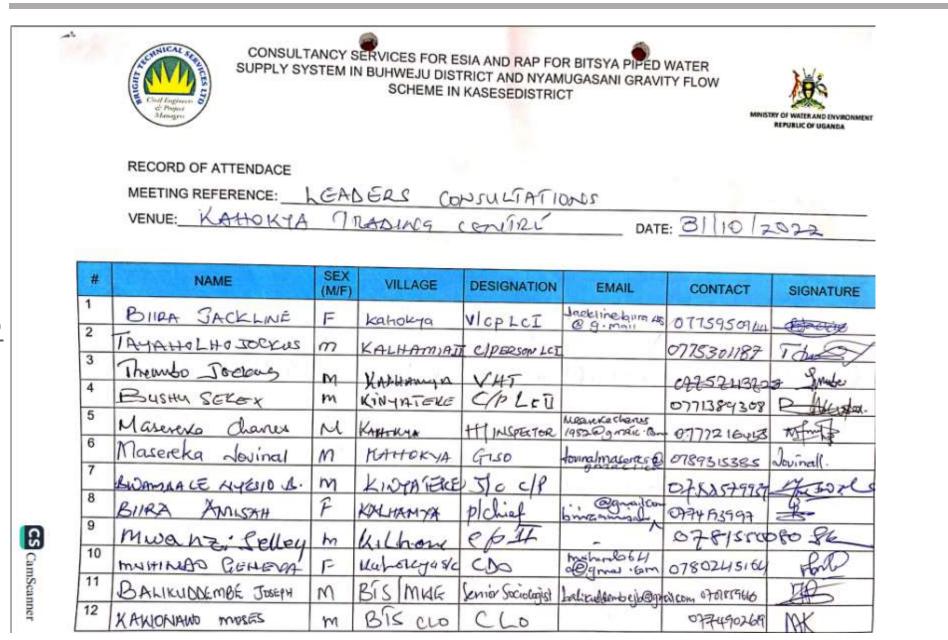




| MEETING REFERENCE: Commo NIT | Dow SULT | 8-110-5 |
|------------------------------|----------|-------------------|
| VENUE: KINYAGEKE TRADING | CENTRE | DATE: 31/10/ 2022 |
| | 1 | - A - |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|-----|-------------------|--------------|-------------|-------------|-------|------------|-----------|
| 1 | muhindo Juliet | Ŧ | Kinyate Ke | Pesant | ~ | 0760920523 | |
| 2 | KIRONGOTSE OBED | m | | BUSSNESS | - | 078925996 | |
| 3 | Hunger Divas | Ŧ | Kingafeke | dure - | ~ | | |
| 4 - | Bina Manifere | Ŧ | Kingateke | 0 | | 0703365128 | 1 |
| 5 | mbamby Jounet | r | 16 markle | pequant | | 0741272488 | |
| 6 | KWIRATHWPWE STAND | m | 2 w Hothere | 1 | - | 07514982 | 58 mg |
| 7 | Bumbwese wilson | | Rwaloshungu | Plasant | - | , | |
| 8 | matsongan Wine | | the materie | | | 0775468951 | y - 1 |
| 9 | rolansorgan alli | - m | in magaine | peone | _ | 0773466957 | Shin |
| 10 | | | | | _ | 1 1 | |
| 11 | | | | | | | |
| 12 | | | | | | | |

| | SUPPLY SY | STEM | SERVICES FOR E IN BUHWEJU DIS SCHEME IN | TRICT AND NYAN | ALIGASANI CDAVA | WATER TY FLOW | 100 |
|----|----------------------|--------------|---|--------------------|-----------------|------------------|--------------------|
| | S. Proper | | | | F - 5 | MINZ | REPUBLIC OF UGANDA |
| | | | | | | | |
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | Le | ADURS | CONSULIA | 102/5 | | |
| | VENUE: KATORYA | SICOU | WITY MAIN | HALL | DAT | E: 31/10/2 | 022 |
| 12 | | | | | | | |
| # | NAME | SEX (M/F) | | DESIGNATION | EMAIL | CONTACT | SIGNATUR |
| 1 | MULLE VENSED | M | Kahoryg | Schef | algueil.com | EPH-1942241 | 19 -21 |
| 2 | Beluke Asmosio | en | Contoning | Corwills | 070003813 | | The |
| 3 | Muthan Vince | HE M | habito | CIPLOT | 07822549 | 4 078225849 | Adamie |
| 4 | TSONGO SANJAVRI | m | | | 0777293353 | | Assand |
| 5 | BIIRA MARY | F | Kghokya P. School | Hlteacher | Seator | 0782758696 | |
| 6 | KULE DIDAS | M | | | 6787607467 | | AIDAS |
| 7 | MaserekaJackson | M | Murambi EI | C/F LCI | 0785681631 | | Sind |
| 8 | EIBILHOUDIRE STEPHEN | 0 | and the second second | 2cTCIP- | | 0703362581 | Thre- |
| 9 | Kittondo Herezon | m | RWEBIHUNFY | | 0773004458 | | Strag- |
| 10 | Masila Jozoline | F | Kahokya Ecd | Courses - Cold - F | 0775784392 | NUMBER OF STREET | |
| 11 | Thembo Johnson | m | Kahorya s/c | | | 0783112664 | |
| 12 | BALEYI GIPION | | KALHAMIAI | | 1077/80.8059 | 077180859 | 210 |







RECORD OF ATTENDACE MEETING REFERENCE: COMMUNITY CONSULTATIONS VENUE: KATTOKYA TRADINCS CEN/12C DATE: 31110/2022 SEX # NAME VILLAGE DESIGNATION EMAIL CONTACT SIGNATURE (M/F) KONYAMUNYU Juna KAHOKYA 07-81933772 Thating m MUTOKA 2 Fallasano Musbrokawa Johnson mutatra 100 0703369291 3 BRa Muithing Mutaka 0775548925 -4 R. GWALP Halania 0717309939 SAR 17 71 5 APA KALLSKUA CA\$691955 #1 MATINA MATST 6 Kahoiux 0787038382 timmy m 7 Kanakyo m LEV 078877655 dmit 8 TIBARA HO TO-BM Kangal MADL. -9 BWAMBALE 5 078515725 Ba in 10 Kambage Dollika Kangle m meiber 07806699 11 MUHMOO HARDERT n Raholya true WWW 0781278392 12 Bwambale Abbuno Buss Kahokya 0787089392 m -Brich 13 BAAM DALE JOCKIN m pro 14 BALINBASA ANDAH T Kahok-a Bankh Banic

317





| 1989 | VENUE: KATTOKYA TE | | G CENTRE | | DATE: 3/10/2022 | | | | |
|------|--------------------|--------------|-----------|-------------|-----------------|------------|-----------|--|--|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTÁCT | SIGNATURE | | |
| 1 | MULTAINEWA VINCENT | M | Acholya | JP LOI | - | 67822847 | 20 Aleman | | |
| 2 | Busambale may | 52 | KALHAM | | 077-12276 | a offician | 1 | | |
| 3 | MUHINDO BREAN | M | KALHAMIA | | 0774581121 | | The . | | |
| 4 | MANASEREDA BENSON | am | RALHAMA | BodBod | | | B-W | | |
| 5 | KULE YASON' | m | Kahak JA | Bod Bod | | 0781866489 | K.Y | | |
| 6 | KUF LARROWS | M | Kalwaso | Peasunt | | 0773667958 | Cauto. | | |
| 8 | Muttineto ALER | m | Valhamie | person | C | 0752526013 | | | |
| 9 | Kyabuphawa EZiRon | m | Kabokua | Peacan | 2/ 11 | 0777017187 | Alte_ | | |
| 10 | Rumphindoire. S. | m | Kontokyce | Boseness | 0772261058 | | V.S. | | |
| 11 | ALLAGATA MAZON | 877 | 1 | | | | | | |
| 12 | KULL KIBINGO | m | KAHOK JA | | | 0759589137 | | | |
| 13 | Prinwimburg Paul | m | 11 11 11 | Bassens | 075861372 | 0789589/57 | K+K | | |
| 14 | Oldinman KATTO | m | RALHAMIN | Bussmest | - | 0753988776 | The way | | |
| 14 | BUPMBALG ALPREP | Ma | KAHOMM | Busenell | 078446060 | 042 | ALPRED N. | | |



| | CONSULTA SUPPLY SYS | | SCHEME IN | RICT AND NYAMUG | | 600.0 | STRY OF WATER AND ENVIRONMENT REPUBLIC OF UGANDA |
|----|---|--------------|--------------------|-----------------|----------------|-------------|---|
| | RECORD OF ATTENDACE MEETING REFERENCE: VENUE: KANDKYA | COM | MUNITY SING CEN | CONSUL | ISTIONU DAT | E: 31101 | 8022 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTÁCT | SIGNATURE |
| 1 | Muhindo-Domai | | Kahohyp | Farmer | | 077452 | 315 ADeres |
| 2 | Kide Amesio | m | Kalhan | + Farmer | ~ ~ | - | Bribe |
| 3 | Reduku-Julie | 1.1.1 | Valuar | by Forme | y | 0740575318 | Bis |
| 4 | pulling prichad | m | NYARURGA | Famer | - | | mik |
| 5 | Bwambake alberts | m | korham-14 | famer | - | 070675845 | a peart |
| 6 | Mhadu HLEX | M | Lalhermy | Famel | | | |
| 7 | Kuranburgh | m | Prost | Former . | | _ | A V |
| 8 | Kyakone Agnes | F | Kahokyon | Furner | | | Agnes, K |
| 9 | Mpanfor Hellena | F | Kahokya | Farmen | ~ | | Hellens B. |
| 10 | Kiza levos | F | Kahzkya | fame | - | | Kiza. |
| 11 | Viira Jane | F | Kahokya | Diamit | _ | 077851008U | Jone . Thu . |
| 12 | Batahana John | M | Kahokya | Businegman | | OFFI SICOUN | Damet's |
| 13 | Birn Janet | 1 m | Kahokya | geague | | 0707851666 | Sto N. |





| | RECORD OF ATTENDACE MEETING REFERENCE: VENUE: KATOKTA- ' | Con | umunutip sing co | CONSU | With 19 | DATE: 31/10/2022 | | | |
|----|--|--------------|---------------------|-------------|---------|------------------|------------|--|--|
| | | | | | | | 1/11 11 | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | |
| 1 | Kialtenta Jung | m | KAHSKYN | - | | 0781974654 | Jund | | |
| 2 | une VEVESio | m | hundaya | | | | Kul | | |
| 3 | KAQubika STEPHENIM | m | KAttokyn | machinics | | 0758FTurso | D-Hullour | | |
| 4 | marati Julius | m | KAHOKYA | bookbody | | 0776616493 | | | |
| 5 | MASERGKA Living | m | KA Hokya | | | | Nul | | |
| 6 | Siburata Davit | a M. | | Milimi | | 07865893 | 57 Storito | | |
| 7 | Kivonjoke Bensa | m | Kaliorija | reasent | | 87316700 | Reat | | |
| 8 | muninda Annet | Ŧ | Kahokya | Pagant | | | P | | |
| 9 | Wanza Dilian | M | Kahokya | Mulmi | | | 300 | | |
| 10 | HON. DEVA EDISON | m | Kahoga | Engrace | | 0739035490 | -21052 | | |
| 11 | MUHINDO MISUSS | F | Kanoky | | | 070-124.00 | nan- | | |
| 12 | Balyke vollitan | m | Kaloky C. | - | | 0780130033 | Bup | | |

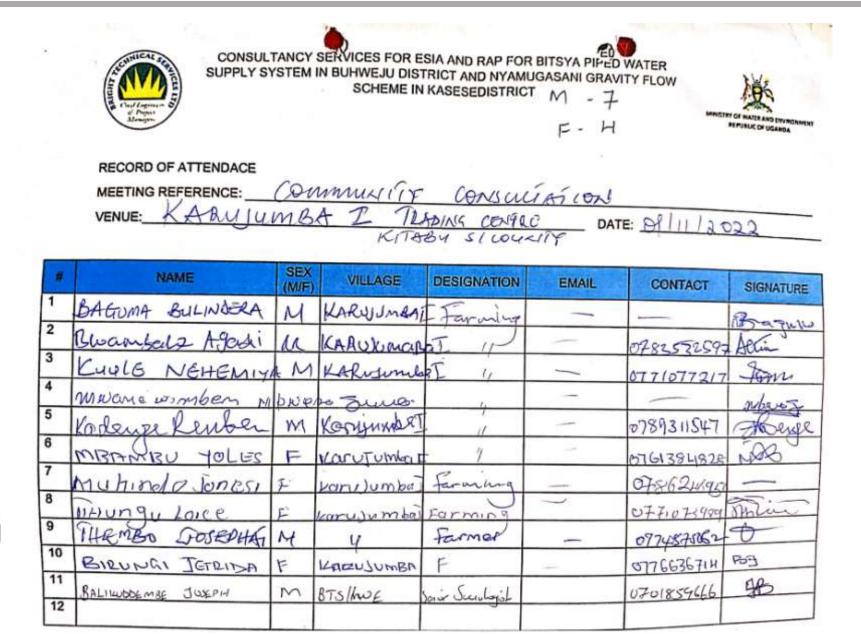


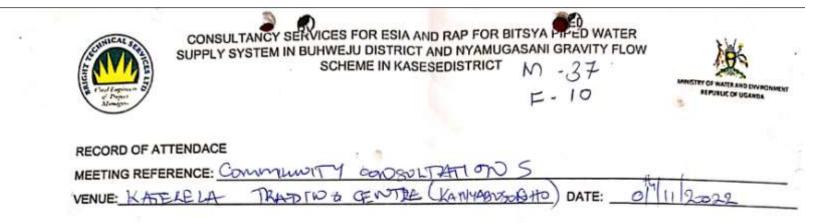


RECORD OF ATTENDACE

| MEETING REFERENCE: | | Coor sunta | Lhai |
|--------------------|---------|------------|------------------|
| VENUE: KIBISTRE | TRADING | CONTRE | DATE: 01/11/2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-----------------------|--------------|-----------|--|-------|------------|-----------|
| 1- | THUNGY SUZAN | P | KIBISINE | Reasant | | 0773596999 | Suzuna |
| 2 | BILLA VALEDIA | F | KIBISIDE | 2 | | 0778625304 | Raenia |
| | Muhinelo many | F | KIBISIDE | 11 | | | min |
| • | Masing Edesi | F | LIBUIRE | 1 1 | | | m.e |
| 1 | BIIRA VIRINIKA | | KIBIJIDE | Pregnant | | - | BV |
| 3 | ASUMUE HOUES MULLINER | f | KIBI SIRE | Resent | | OTT 589397 | MA |
| ' | K-bikimura mary | F | Kibisire | 11 | | - | K.m. |
| 3 | Masika AGNER | F | MIBISIRE | 11 | | 0762221408 | M.A |
|) | KABUGHO MERY | F | KIBISIRE | 11 | | - | M.K |
| 10 | MBAMEN JOILY | f | KIBISIRE | .(1 | | - | MIS |
| 11 | | 5 | KIBISIRE | the second s | | - | MB |
| 12 | SIBITAR RAWNES | ni | KIDISIDE | Persont | | - / | 5.R |
| 13 | BALIKUBSEMBE JOSEPH | M | Bis/mwf | Senior Suc Lyist | | 0701859666 | Ste |





| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------------|--------------|-------------|--------------------|-------|------------|-----------|
| 1 | Bandar Julich | Ŧ | Vamplasgo | antini: | _ | 0779102858 | Samber O. |
| 2 | Kyakinnon Elizat | Ŧ | Kangoberono | andin | _ | | E1.29. K. |
| 3 | Thurson Jones | 5 | Kanyabhsar | Omitimi | | | Fringy.J |
| 1 | MUHINDO FOITH | F | 11 | omulimi | | 077393600 | m. edit |
| 5 | Kyabanav and 1880 | 2 25 | Kahyabusqua | diffence | 1 A | 57794 5397 | RAP |
| 3 | Kabutho yonere | | 1) | Shutini | 1 | 075 | 1 |
| 1 | Thurse my se | Ŧ | 11 | mumi | ~ | ~ | TU |
| 8 | Bulambale surgeon | M | Konyabesoft | former | - | 078680349 | inst |
| 9 | Muserelke Jahna | M | Kanyobusof | stomer | | 0786/09/04 | mart |
| 10 | BALUKO AUGUSTIVHE | M. | | 0000 | | | Bach |
| 11 | BALI LUDDEME JOSE 1741 | M | BTU IMWE | Soniar Sugularista | | 0701859666 | HE |
| 12 | | | | 0 | | | |



| | C Fuel Pagner | | | | | 10000 | THY OF WATER AND DAVIDAMENT |
|----|---------------------|--------------|--------------|-------------|-------|--------------|-----------------------------|
| | | | | | | | and outside |
| | RECORD OF ATTENDACE | | | | | | |
| | () | min | NITY O | CONSULTAT | ons | | |
| | VENUE: KATERELA | | TRANSING | CENTRS (K | | TE: 1 1 2 | 020. |
| | | | | | | | - 14 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Kube Lena | m | Konyab Soro | Mechanic | | 0760132198 | Mars |
| 2 | Kale Richard | M | Kanipson | | | 0774408077 | |
| 3 | Bwombale pabrick | m | 11-cn while | termer | | 077726599 | 1 0 |
| 4 | KANGAHUTA ENOS | | Kentre 61509 | | | | K. ENOS |
| 5 | member | m | pos | | | | |
| 6 | Elias majereta | m | Hangahoof | the | | 0)0882424 | Ebol |
| 7 | ICI bu bu mutayo | m | 0 | up | | 077030176 | 9 |
| 8 | BWAMBALE | M | ASD . | B·J | | 077132634 | 1 00 0 |
| 9 | BACQUIMA ALPRES | 3 | 1(| B.A | | 0780766376 | RE |
| - | 0 1101 | F | · - 1] | Omdini | | 076611788. | B.C. |
| 10 | Bwande Consinces | + | ., | mulimi | | 0 1 1 0 4974 | |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: COMMUNITY | CON SUL TATOWS | |
|--------------------------------|-------------------------|--------|
| VENUE: KATERELA TRADING GITTLE | (KANABUGOGHA) DATE: 014 | 1/2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|----------------|-------------|-------------|------------|-----------|
| 1 | MUHINDO JOHN | M | KANYABU SAR | b Furning, | John Muhine | W078750238 | 87 Muite |
| 2 | | nel | | Farning | | - | Mis |
| 3 | Herrico Hezellia | M | | forming | - | - | WHE. |
| 4 | Mbusa yasamu | M | Konyobuserghe | Forming | |) | 2 |
| 5 | MUKUND MILTON | M | RANYABUS O GHA | | - | 0781645064 | mation |
| 6 | Mbusa Rajasi | m | Kanyahusogh | anutini | - | 0785316515 | mabu |
| 7 | MASFERICIKA TOHN | m | WANYABLISOCHE | Farring | - | ~ | miDrotta |
| 8 | Mosereka Rononi | m | KOAYabusogle | farming | - | - | M-8 |
| 9 | Kule Aron | M | Kanyabu Sogh | Farming | 1 | - | |
| 10 | Muthab.nea LIVING | M | Kungabusout | Farming | - | 0773013404 | All |
| 11 | Kabuero Tomoria | F | Kanyabusagne | | - | | |
| 12 | Mugish Jocium | | Kanyabusay ha | | _ | - | |



REPUBLIC OF USANDA

RECORD OF ATTENDACE

MEETING REFERENCE: COMMUNITY CONSULTATION'S VENUE: KATERELA TRADING CONTRE (KANYABUSOGO) DATE: BITH 2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------------|--------------|------------------|-------------|----------------------|-------------|-----------|
| 1 | MUMBERE GODFREY | M | KANYABUSOGHA | | gallifret munber Bar | | Noniti |
| 2 | BALUKU ASIMEI MUTHALEYA | m | KUNYABUSE EHA | | | 0788391068 | Anne |
| 3 | BHAMBALE BIZALERI | m | 16ANYABUSOGHA | | | 0779504610 | Friendate |
| 1 | KANGALIGHALI RAULENOO | M | | | | 0.772282181 | t.L: |
| 5 | ILULE SAMUSON | M | 16 ANY ALUGA | Hin | | | |
| 1 | MUSERERA VENUS | N | Karpeh 200th | x- | | 0785786992 | Und |
| | Musenera Tunasi | 3 | LANJAHUCHA | | | 0711443798 | mite |
| 3 | Kyakara Kegi | N | | | | 078057865 | Juno |
| 9 | MASGREZZA ANA | 2.Stin | >6 Konyabus | .Thy | | 077950 | 17034.00 |
| 10 | Bakyta Samuel | m · | U U | 0 | | <i>v</i> | BS |
| 11 | hup solomon. | m | themerbas | y la | | 077163919 | > 14.8. |
| 12 | Kulle yona. | m | Keycebour | L L | | 077428366 | your. |

CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT M-39. CITY OF WALLS AND DAVID F-45. REPUBLIC OF USANDA RECORD OF ATTENDACE MEETING REFERENCE: Commund ing (DPSULTATIONS KABIRIZI VENUE: TRADING CENTILE 11/2022 DATE: O SEX NAME VILLAGE DESIGNATION EMAIL (M/F) CONTACT SIGNATURE UWAGIRA Rabinzi CPLCI ACIDOD MASLUSZUS Rusa 2 Peshent abriz 126131 3 Fim Pesare glades OFT 0 722135 500 Cipitin 4 Besond M USIV12 mu 5 Pelus Pes.out 0778382446 1 n Kabirz. 6 KALERIA Kalwa 078384(252 Forming misaki M Kabini 2 7 0750557765 Vabirizi Fame. Ka Jane F 8 Kabzylo Lermon 511121 Shoron 9 ć Labirizi Biira farmer CS CamScanner 10 Farmer obriki Leconce hask -11 Liviz Farmy MS mon SUB 4. V 12 Jimy f unc 0 SUN 100

| | RECORD OF ATTENDACE | Com | MUNIT | KASESEDISTRI | Consult A | TY FLOW | THE CONTRACT OF THE CANADA |
|----|---------------------|--------------|-------------|--------------|--------------|------------|----------------------------|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KALEMBA LENGWO | M | KABIRUZI | MACHANIC | 0777636293 | 0777636793 | kih. |
| 2 | KABUGHO JETRACE | F | | PERSONT | 0779746269 | | |
| 3 | Singoma Joekim | S | KaBIPAZI | POASPNI | 0788144580 | | - rues |
| 4 | Melhumuz A Beno | | KaBiR/20 | Peusant | 0785202015 | 07852005 | Asiet |
| 5 | Komobakunte Amos | m | KaBiRiza | Peasont | 07860768 | | Karent |
| 6 | Kato EFUMM! | m | Kobilili | | ~ | - | KE. |
| 7 | MUHONJa | M | KAbaku | 4 | | | |
| 8 | Masinga Hice | F | reabirizi | | 078689934 | | ou ce |
| 9 | muundo Grace | F | icicibirizi | | | | |
| 10 | KAGURE JACOB | m | Kalarizi | | | | |
| 11 | haber lou Aarmy | F | Valourizo | | 576060919173 | 4 | SAY8 |
| 12 | Ebier Kypicisume | F | | forsant | _ | | flira |



| | RECORD OF ATTENDACE | Com | MVH1F4C | BASULTATI | عم | Mag | REPUBLIC OF UGANO |
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| | VENUE: KABIRI | 21 | TICON | Re | | TE: 0//11/2 | 022 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNAT |
| 1 | Mugisha Sulait | M | Kabin'z: | Onulou | | 0786242726 | 1000 |
| 2 | Kampade North | M | Kablizi21 | Onution. | | 0100242726 | Kal |
| 3 | BWAM54(e | M | KARME | | | - | the |
| 4 | Kato Jomes | M | Kabi vizi | farming | | - | Kato |
| 5 | Mkyima Moses | M | Kabirizi | Pailor. | | 0780404077 | |
| 6 | Bagonza Milton | m | 1 | Business | | | Bram |
| 7 | Mbank Aidah | F | Kabivizi | Decent | | | Man |
| 8 | Tumosime | M | K | | | 077065044 | 2 Frank |
| 9 | Kagoro Jacob | m | () | VH.T | | 0775721570 | - Cler |
| 10 | Rapu Grisch | F | 1 | | _ | | |
| 11 | Bilm Doyce | F | 11 | Peasurt | | - | Bline |
| 12 | Moseleke Isual | m | 11 | Farming | | | Mage |



SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

VENUE: KABIRIZI T/CONTRO DATE: D//1/2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|----------|-------------|-------|------------|-----------------------------------|
| | MASIKA NAUME | F | Kabirizi | Farming | | | Masnika |
| 2 | masika relina | F | Kabiriz. | Farming | _ | 0781922939 | m. Felin |
| ١. | HEUNGU JUSTINE | F | Kabirizi | Farminy | ~ | 0787038050 | TI |
| ŀ | Rabube Micules | F | Kabinzi | Farming | | - | Maeilisi |
| 5 | BURA JACKLINE | F | Kabirizi | Sermina | ~ | 077758509 | salet |
| 6 | Bamby Grad | F | Kabinzi | Family | - | | Bas |
| 7 | Kaloughe Mary | F | | | | 07754/7941 | Contraction in the contraction of |
| 8 | Masilka Josemony | H | Kabiniz | farming | | | Masilker |
| 9 | Dunan Jorgim. | M | Kabinzi | Bisines | - | - | mon |
| 10 | Kabuho Rosemary | Ŧ | KabinZi | | - | - | Roudd. |
| 11 | Kule Ronald | M | KapinZi | forming | - | 0786340997 | Maker. |
| 12 | 2 Makes Augustine. | M | Kabin | Onulion | - | | |

| | Alemager | | SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT | | | | | | | | | |
|----|---------------------|-------|--|---------------------------------|-------|---------------------|-----------|--|--|--|--|--|
| | | | | MANSING OF WALLS AND INVIDUMENT | | | | | | | | |
| | RECORD OF ATTENDACE | | | | | | | | | | | |
| | | lom. | MURITY | CONDIL | KIIDN | | | | | | | |
| | MEETING REFERENCE: | 11 | TCENTRE | + | DAT | E: 0/11/20 | 0.0 | | | | | |
| | | | 1 | | | E: <u>viji / 20</u> | 99 | | | | | |
| | NAME | SEX | LUNDAOT | | | and the second | | | | | | |
| * | NAME | (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | | | | |
| 1 | Muhinde Josephin | F | Kellarizi | Family | - | - | | | | | | |
| 2 | maissier mearica | F | 11 | Funturg | / | 6 | | | | | | |
| 3 | puentoque Andra | 10 | 11 | | | | | | | | | |
| ł | | F | 0 | | - | | | | | | | |
| 5 | Ketomaloi Feutu | E | | | - | | | | | | | |
| 3 | Kebugho mergra | | // | | - | | | | | | | |
| 7 | mbamber guine | 1- | 1) | | | | | | | | | |
| | patrick noewold | a M | 17 | | | | | | | | | |
| в | maska percer | M | | | | | | | | | | |
| 9 | Bura Ulive | F | 11 | | | | | | | | | |
| | | - | 24 | | | | | | | | | |
| 10 | miscimiau Jacon | _+ I | 21 | | | | | | | | | |



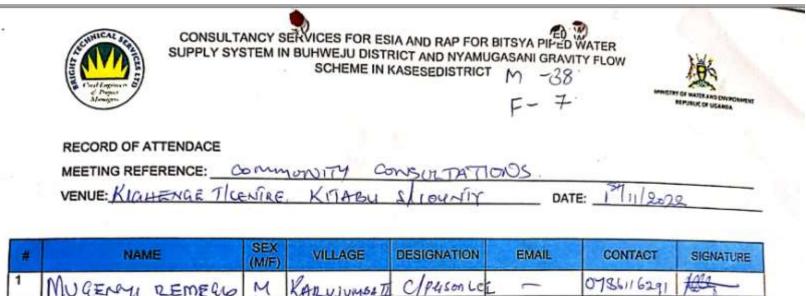


RECORD OF ATTENDACE

VENUE: KABIRUIZI TICENTRE DATE: 01/11/2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-----------|-------------|-------------|------------|-----------|
| 1 | LIXOHWA DAVIS | M | LABIRIZ-I | Splai x. | 0187314282- | 0481314282 | Sto |
| 2 | Atomesa John. | M | LABIRIZI | ELAER. | | | - |
| 3 | MASEREKA FESTO | M | KA812.21 | | 0789348452 | 0789348452 | Miller |
| 4 | Kyren we lesa mos | m | Katrum | FAMOR | - | 0771632085 | Finder |
| 5 | ATUHA ANNET | F | Kabiriz, | FAMER | 0770563001 | 077036350 | Ante |
| 6 | THEMBO ALECKSON | m | Kabirizi | Farmar | 0784040674 | 078404067 | y Chil |
| 7 | THEM BO HMOS | m | KADITIZI | 1 | 0786142282 | | Amos |
| 8 | Robert u Johnson | M | Kabirizi | | 077978594 | 3 | Thous |
| 9 | MBUZA ABRAHM | M | 20161121 | furmer | | 0778583660 | Mbusa |
| 10 | | F | Kobinzi | | ~ | - | - |
| 11 | | F | KubiriZ1 | | - | - | 10 10 |
| 12 | | M | 11 | PEASANT | 0778204819 | 077627078 | Noticetto |

| | Carl Sugar | | | RICT AND NYAMUG | | MARTIN | OF WATES AND LIVENDING NT REPUBLIC OF UGANES |
|----|---|--------------|--------------------|-----------------|----------------------------|---------|---|
| | RECORD OF ATTENDACE MEETING REFERENCE: VENUE: KABIN | | NUNISY JICENTIA | CON SULLTAT | ک م _{ہ ک} DATE | 01/11/ | 2022 |
| * | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Hounges Immore | | Kabinizi | forming | - | | Imaconhote |
| 2 | No Zaleta | H | Kontin 21 | Funing | | | Nogalet |
| 3 | Missika Surah | - F | Kabinpi | Faring | - | | Megickan M. has |
| 4 | Mharby Outist | F | Katinzi | Dunline | | | Veronicia |
| 5 | Vermilla Mostike | F | KabinZi | andini | - | | 1 |
| 6 | Muhando Ekezia | M. | Kabim21 | 5 1 | | _ | |
| 7 | Broambale Rosia | M | Kabinzi | onutini | | | 5 |
| 8 | Kothsuje Veronia | F | Kabinzl | ondina | - | | |
| 9 | Masilk Janife | FF | Kabinizi | 11 | | | |
| 10 | Muhendo Dorena | a M. | 17 | 1 | | - | |
| | DI Macisu | aF | Labinz | onulin | - | | |



| | | Comme 1 | | | and have not an a state of the | |
|----|-----------------|---------|--------------|------------|---|--------------------|
| 1 | MUGENAY DEMECO | M | RAILUJUMBATI | C/P4Son Le | - | 0786116291 |
| 2 | WELE WILSON | | KIGHENG | | - | 077687535 Delee |
| 3 | Baruker Simon | 1.000 | | | - | - Sincer |
| | Bwambale Erius | M | karujumba | - | 5 | 0781770670 ALErius |
| 5 | Ihungy Pesi | F | Kigheng | Farmeng | ~ | 0777585790 1.P |
| B | Biling Famig | F | Konjuby II | - | - | - B.F |
| 7 | Kabugho aneti | F | KanimbaII | Farming | 5 | - K.A |
| 8 | BWAMBALE RAPHEL | m | Kighenge | diF.5 | - | 0775563497 800 |
| 9 | Konfawera James | m | Kighenge | PSnt | - | 0708551468 22005 |
| 10 | Bahuli Aeya | M | Kighlerg | | - | 077365004 Banga |
| 11 | Jugume ERINIST | M | Kigs-enge | lensant | - | 07777972F |
| 12 | Kabaganahie | m | Kighenge | | - | 0784171543 KM |

| 56 | Support | PLY SYSTEM IN BUHWEJU DIST | AND RAP FOR BITSYA PIPED WATER RICT AND NYAMUGASANI GRAVITY FLOW KASESEDISTRICT | MANUSCRI CO MANUS AND EMPROVEMENT REPORT CO UCANEA |
|----|-------------------|----------------------------|---|---|
| | RECORD OF ATTEND | | | |
| | MEETING REFERENCE | COMMUNITY | CONSULTATIONS. DATE: 01 | 41 0000 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT SIGNATU |
|----|------------------|--------------|------------|-------------|-------|-------------------|
| | Brom RALE Rogers | M | Kenshanse | Farmer | | 2786169196 Brit |
| 2 | Yofma mascelka | m. | Kiquarete | Former | | อาาานารณ |
| 3 | Baluku Costa | m. | Kan Juns | T. | - | 0787573797 |
| • | Kule Alan | m | Kanjumba | Kitanner | | 0782663603 Kulea |
| 5 | uoveri | M | Bulle | Farming | - | 0781811887 05 |
| 3 | KLIS Endo.K. | m | VI GHENK | & Funny | | 077133490 % |
| 1 | masenerio-S- | ni | Vianin | per 1 1 | - | 0789989447 m |
| 8 | BOLUNG FUGASL | | II I | 1, 1, | - | ()+00 (113-) |
| 9 | Busque R. | vo | rwente | 20 teanne | | 0788750467 R |
| 10 | | m | Kaviejum | | ~ | Kiiza |
| 11 | Kiiza Venesio | M | KonjuntaTe | Omulimi | | 0117636374 - 2000 |
| 12 | mukeber sames | m | Kaculuma | Busness | | United |

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RECORD OF ATTENDACE

| MEETING REFERENCE: | COMMON ITY | (CON | SULTATIONOS | | | | |
|--------------------|------------|--------|-------------|-------|----|-----|------|
| VENUE: KIG HENGET | GENIRE | KATABO | SLOODNTY | DATE: | 01 | (11 | 2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-------------|-------------|-------|-------------|-----------|
| 1 | BAGONTA FASCO | M | KanjuntaI | Farming | | 5785874414 | Bigoma. |
| 2 | Maserica Jolam | M | Karupuba | Peasant | _ | 0785479765 | 1 . U D |
| 3 | Brog Moale Jimmy | 5 | 5 | . רר | (| 076053003 | Borning |
| 4 | TOMU BAYU | ma | | | | 077729 | 18 90=00 |
| 5 | BISOGHO SElly | m | Karyunto | r | r | 076-12106 | 75 Samuel |
| 6 | Veferia Magere Ka | M. | KangintaTt | faming | - | - | Magare Ka |
| 7 | KASINA BASEMA | F | KIGHEGE | peasant | 2 | 0787253397 | 12 BASEMA |
| 8 | Bura annet | F | 12aru jumba | peasant | ~ | 5760594667 | B.F |
| 9 | 1 010 | M. | Karyumbat | peasant | - | 0773320727 | |
| 10 | mighida Gabrier | | Karutumba | | - | 0 15/ 20/10 | Paul |
| 11 | Barnika Jafari | M | Karapubrill | Farming | - | 07788591606 | Vile. |
| 12 | Kule Lawrence | 2 | Karnjuta TI | Prosperit | - | 0777924412 | pine. |

| | Linninger. | UTEM I | SERVICES FOR E N BUHWEJU DIS SCHEME IN | KASESEDISTRI | ALLCACAMI OP ALL | TY FLOW | THE OF MATER AND INVIOLAND |
|---|---|--------------|--|---------------------|------------------|--------------|--|
| | RECORD OF ATTENDACE MEETING REFERENCE: | Com T | MUNDITY LENTRE 1 | CONT LIFABIU S C | DULTANO | | 2022 |
| ¥ | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | Masiika Jeseline | F | Kenimber | Farming | - | 077814354529 | And the second second |
| | Bing Jovia | F | Kani InT | Farming | | 0776297234 | |
| _ | Muzanzi Pantaleo | M | Kangint | Farming | | 0770R4 (252 | Manzi |
| | Muchimua Alice | m | Kanjumber | Faring | ~ | 077978598 | Ke. |
| | KABUCIHO JEMIMAH | M | KARUJU NORAT | FARMINKY | - | 0781098194 | QMD- |
| | MBAMBU KIHIKIA | 3 | KARUJUMBA | | - | 0761573889 | and the second sec |
| | Balulas Uncert | M | CARUJUNBA | Gen. Sec. | Balukuv Dre | w 0781936UU2 | your. |
| | Sanagandà David | M | BIS | BT.S DRiver | - | 0705898895 | dor- |
|) | Baliluddunde Jaseph | м | 275 /mg | Servi Soculyul | | 0701859666 | 郜 |
| ī | | | | | | | |
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RECORD OF ATTENDACE

CONSULIM Community MEETING REFERENCE: VENUE: BUSKIAGHA 2022 DATE:

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|-------------|---|-------|-------------|------------|
| 1 | Kalende venesio | M | BUSWHGHM | FARMINZ | ~ | 07128/6574 | v. Kalende |
| 2 | mumbere Jeremayi | | BUSWIAGHM | FARMINE | - | 0782601404 | mŢ |
| 3 | MASEREKA Amon | 5 | BUSWA GUA | FARMING | ~ | 078897055 | An |
| 4 | Kimpessa URIG | M | BLADOGHA | | ~ | 67028955 | NI . |
| 5 | moreneker willia | n M | Burswayther | | - | 018607774 | |
| 6 | 0.000 | m | Buswage | A 1. | - | | BRABIN |
| 7 | | | P | familing | - | 07-27-97604 | 1 |
| 8 | - Muni | m | BUSWAGHA | FARMING | - | 0777638121 | - CP |
| 9 | RALUKU JOKARD | m | BUSWAGHA | the second se | - | 078930 | 4267 |
| 10 | | M | BUSWAGHA | FARNING | | | t. tra |
| 11 | | 1 | BUSWAGHA | FARMING | / | 07822848 | 18 50 |
| 12 | | | Buswagha | Farmer | - | 07821547 | 66 40 |



| SUPPLY SYSTEM IN BUHWEJU D | RESIA AND RAP FOR BITSYA FIFED WATER | X We |
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| | IN KASESEDISTRICT | 梁 |
| d Prod Lagence C | | MINISTRY OF WATER AND DEVING NAMEN'S |
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| RECORD OF ATTENDACE | | |
| | 7 CONSU (JATIONS | 1 |
| MEETING REFERENCE: COMMONT | Cano jo Lin loro | and the second se |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-----------------------------------|--------------|-----------|-------------|-------|--------------|-----------|
| | Bura Margret | F | Buswagh | Fiaming | | 0778622388 | Margicte |
| 2 | V . | F | BUSWAD | | _ | 0772358192 | . K.J |
| 3 | Kighing Jetrida Kabugho Esther | E | Buswaghe | | | 078547021 | |
| 4 | | E | BUSDAGIA | | - | 0773364744 N | nargret |
| 5 | mbembu margret | - | Brand | | _ | 0785929768 | LOVEN |
| | KABUNO BRIJET | 1- | 12 -laak | | | 37736423 | 19 |
| 6 | Hellen Bakal | | Bushagn | | _ | 077079428 | |
| 7 | HABERT MUNDAL | M | Dela | | ~ | 07855960 | 于场和 |
| 8 | BALIEU SATAV | M | BUShop | | | | 12m |
| 9 | RWANDALE SLOW | hm | Buswag | | | 0771902807 | But |
| 10 | Buscupbule Johnson | M | Buswagh | e taumae | | 0785790079 1 | WER |
| 1 | 1 Muthalbo Neerson | m | Bushappio | F | -, | 0786917673 | ul |
| 1 | 2 Kiburg Fred | m | Eusmaghe | F | | U Her | |



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| RECORD | OF | ATT | END | ACE |
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| MEETING | REFERENCE: GOMMON WITY | CONSULTATIONSS |
|---------|------------------------|----------------|
| VENUE: | BUSWAGHA. | DATE: 9 11 202 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|-----------|----------------|-------|------------|-----------|
| 1 | XATO DAVIN | | Buswagha | Familia | _ | D7600820 | 61 |
| 2 | Kule Kiiza | ng | preirach | | | 1730724 | - / |
| 3 | MASEREKA RAULIANO | | | Farming | _ | 0760111575 | |
| 4 | SEAMA GANDA DAVID | M. | · BTE | BTS | | 0705818045 | |
| 5 | BALINDEMBE JUSPH | M | BTISTMUSE | Sonie Socilist | | 0708159666 | 195 |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
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| 12 | | | | | | | |

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| | E Continues E | | SCHEME IN | RICT AND RAP FOR B RICT AND NYAMUG KASESEDISTRICT | M-7 | | 使 |
|-----|----------------------|-------|-----------|---|-------------|--|--------------------------|
| | E Pares Mengre | | | | | And the second sec | OF WATER AND ENVIRONMENT |
| | RECORD OF ATTENDACE | 1 | | | | | |
| | MEETING REFERENCE: | DMI | 2011JALLA | 004551151 | S | | |
| | VENUE: KAGAKIAO | T | CELL . KI | CONSULIA | TIDAL | - D2. 11. 0. | 2.40 |
| | VENUE. 101 1014E0 | | LESE MI. | SIALUA TIC | DONIUL DA | E: OXIII. K | 022 |
| 4 | | SEX | | | T-Design AV | | |
| # | NAME | (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Muhindo Geore | M | Kagando I | | | 0776633116 | Farmed |
| 2 | MUSIME NELSON | PM | Kaganda | GLECKE | | 07726868 | Zandon |
| 3 | KULE SALATIEL | m | Karmilo | | | SAS9500TA | tur |
| 4 | MAKLO MAATIE | | | abe | | 077257ไหร | a a |
| 5 , | BILL ROCKIE BAUN | n m | Van Deile | Larmer | | 077959353 | Pland . |
| 6 | DIII ROCUE BAU | ND | Kagando | TEAWER | | | |
| 7 | BWAMBALE HENR | 9 | BISMOULE | | | 0701859666 | ne |
| - | Badiand dente Joseph | m | 121311040 | June jun | | | |
| 8 | | | | | | | |
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RECORD OF ATTENDACE

Community consultations MEETING REFERENCE: VENUE: KAMYAMOBE TICONIRE -KISINGA SIC DATE: 2 2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---|--------------|--------------|--------------|--------------------|---------------|-----------|
| 1 | KANYONYI WILSON | м | Kangughstei | C Mon 201 | Kazanji 1950 B | 6783586433 | The |
| 2 | BLOMMBALE PEARE SADRA | En | KAMighBell | resident | Bonnts Lupica Bill | nL 5785610612 | Band |
| 3 | NYANGOMA SADRESS | F | KAMUGHOBU | * | | 0760276535 | then |
| 4 | Joren haladdente | m | MKOEBIS | Speciologiet | - | 0707859666 | HAR - |
| 5 | BLOOMFORLA ALFRED | M | KAMUCHORES | Pusini | 0788-533284 | - | 100 |
| 6 | KABUGHO AIde | F | Karrughobe | Ĩ | | | te-AR |
| 7 | Kabupo Joekson | m | Kamuglobe | | 0777210085 | | 00 |
| 8 | Them bo phenibus | m | Vanighter | | | 078320201 | 8th |
| 9 | Abole mutos | m | Komignobe. | r | OALLISGS18 | | Hen |
| 10 | | m | Kanugholne 2 | | 0774193721 | | Q |
| 11 | and the second se | m | Kang 1251 | | In risa willy | 0775 500515 | |
| 12 | and the second se | M | Kamughose I | Social was | 2 Demailion | OTTASUSIE | |



| | VENUE: KAMMatto | BE | Mcentre 4 | KISING& SIG | DATE | : <u>02/11/2</u> | 022 |
|---------|---|--------------|-------------|-----------------|------------|---------------------------------|---------------------|
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Mumbere Berson | m | Konulyobe | | 0778696199 | | Munikan |
| 2 | BASISA FREDRICK | M | Kannippoke | birector vision | 1.0- 10179 | 0782186140 | The - |
| b. | Masika Jozolina | F | Kanughobe | | | | Masile Jooli |
| | MUMBERE GILBERT | m | Kamughoke | STAFF AT VISION | | 0789209155 | Reside Johon |
| | BWAMEA ROBERT | m | KAMUEttre | | | 0779 00 2402 | a |
| | MASERicks. Edwards | P | KAnne GHONE | | | 8743142478 | State 1 1 1 1 1 1 1 |
| | Maurka Rukia | Ŧ | Kamughobe | | | 0781804133 | |
| | Kule Binazeri | M | Kamuahobe | | | 077730843 | B |
| 1 | | _ | 5 | | | | 1000 |
| | | | | | | | |
| 9 10 | MASIKA SHARON BIRA ANNET MULINDO ASOSID | FFF | KAMUGHOBE | | | 0762612156 07855 8 79 | 18A |
| | 17 11 | Kan | UGHOB | 2 | | 078179028 | - Mar |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT

> REPORT OF WATER AND ENVIRONMENT REPORTS OF USANDA

RECORD OF ATTENDACE

MEETING REFERENCE:

| VENUE: RAMMA HOBE 1/ce | whe KISCHLAA | slc | DATE: 02.11.2022 |
|------------------------|--------------|-----|------------------|
|------------------------|--------------|-----|------------------|

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|---------------|-------------|-------|-------------|-----------|
| 1 | Mary Kasulena | e P | Kamughob | ez Resident | | 01850650-39 | MK |
| 2 | Biirg Judith | F | Kamughot | | | 07836807 | |
| 3 | ARON, Busande | m | Kamuahob | - | | | A·B |
| 4 | mbambu Roda | F | Kamughob | p TT | | | m.R |
| 5 | Kabugho Ruth | F | Kamughob | Īī | | | K.R |
| 6 | Makona John | M. | 17 | Resident | | | MJ |
| 7 | KOBUSINGE JOVIA | F | 12 | 1) | | 0784825434 | |
| 8 | MULEON JULIET | F | Kamuphobel | 1) | • • | 0753281597 | |
| 9 | Birra Josefine | F | Kamughobel | Resident | | 0786059262 | B.J. |
| 10 | Ruilly · Kabooko | F | Kumughobej | 1.1.5 | | 0799553353 | |
| 11 | | N | 1carninghober | Resident | | 0782028240 | Pott. |
| 12 | | F | Kamughobe | 111 | | | <u>L</u> |



RECORD OF ATTENDACE

MEETING REFERENCE:

VENUE: KAMUGBOBE PICENTINE KISIKIGA SIU DATE: 02.11.2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|--------------|-------------|----------------|------------|-----------|
| 1 | BURA ANIGENESI | F | Kamyghobe TI | Rectes | 1. | | 1.1 |
| 2 | RALKEKADIKE | | KANW Phohot | < · · | Conta Sont Son | 0777303965 | BIE |
| 3 | Mbambu mary | F | Kaninghober | | | 0789571583 | mbanbu |
| 4 | Kato Taddius | M. | Kanughober | | | | KIT |
| 5 | Kabugho paskazia | E | U U | | | | KP |
| 6 | ASIMWE JOCKIM | m | 41 | | | | AJ |
| 7 | Grace Kasulenge | F | Konyghobel | Resident | | 0101130100 | GK |
| 8 | MABUSA ADEL | m | Kamughde | I | | 0789232665 | |
| 9 | MPSAMBU SOMOLE | 10000 | | | | | AT SE Ida |
| 10 | | 1.12 | KamughobeI | | | 0782156353 | Derina |
| 1 | 1 0 0 1 | m | 11 | Reservant | | 0734673690 | 0 |
| 1 | 2 Ribanja mary | F | 11 | 1' | | | |

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OF WATTE AND DAVING

RECORD OF ATTENDACE

MEETING REFERENCE:

VENUE: KAMMUGHORE ALCENTRE KISCHIGA STOMWAT DATE: D2.11.2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|------------|-------------|-----------------|-------------|-----------|
| 1 | K-bugha Ancetozi | . 8 | Kamughone | Dosident | | KA. | V.a |
| 2 | Mesercice PasicaLI | w | 11 | nestlant. | | mio | hors |
| 3 | MASEREKA DAN | M | Kanghsbeit | 11 | | | MD |
| 4 | Bira Zulien | F | N | ų | | | Bira |
| 5 | MASGREKA HANNIWAD | m | 1. 1. | 1x = ex | | 0780149069 | |
| 6 | BALUKU EZRA | m | 11 | () | | 073211-3384 | 0 |
| 7 | BILONIS REBERT | n | 11 | 11 | hoteri sour | 07739203 | Y Ch- |
| 8 | MUKERI JULIUS | 3 | Kisi-gaste | - ch Lein | 79 @ gmail. cut | اطود مجادون | 0 |
| 9 | SEMA-GANDA DAVIS | M | Grab BTS | GTTS Driver | | 0705848095 | Store- |
| 10 | PALLERIALIO MOSES | м | KALESE | GMT CL. | | 0788/28262 | H MICES |
| 11 | | | | | | | |
| 12 | | | | | | | |

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| | and stand against a | | | KASESEDISTRICT | F-3 | Annual Co | TO WATER AND ENVIRONMENT |
|----|---|--------------|---------------|----------------|-------|-----------|--------------------------|
| | | | 8 | | | | |
| | RECORD OF ATTENDACE MEETING REFERENCE: | Com | MIDADIY | CONSOL | | | |
| | VENUE: KAJKIENG | | | | | | 0.0 |
| | The part of the second | ~ / | Harden of Con | | | | 2.0- |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | Kinguna Trugalas | | Kiguerle. | CP 2CII | | 0773cran | 1-10: |
| 2 | Mulis do Gol | 1 m | Ing other | | | 078789120 | 1 (|
| 3 | Ew-urbale Douge | m | | | | 077817126 | |
| 4 | NZYABAKE ANOR | | F | | | 07898570 | 13 |
| 5 | Kiese musa | m | | | | 0786400 | 229 |
| 6 | Kull bourk | m | Komeno T/C | | | 078198755 | <u> </u> |
| 7 | Mil into find | 4. | Kanpoere | | | 277247528 | |
| 8 | Munhar Educe | m | 100 | 2 | | | |
| 9 | Kamba bear | m | A | 1.1 | | 077736347 | 1/11/0 |
| 10 | Kula Since | ny. | Kaiwage | | _ | 07890863 | 75 400 |
| 11 | Muhindo Goutre | A AI | Lagenge | | - | 078927057 | 5 Atour |
| 12 | Kelle SERALT | Im | 21 | | | 077752674 | 17 Kt |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: | COMMONTY | CANSULTATIONS . | |
|--------------------|----------|------------------------|-----------|
| VENUE: KATWENCE | TRAD ING | CENTRE KISENGAS COATE: | 2111/2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|-----|---|--------------|-----------|-------------|-------|-------------|------------|
| 1 | Bitaka bekson | M | Kajweng | | | 0771095492 | Du |
| 2 . | John Kibira | m | Kalinenge | τ | | | |
| 3 | muhindo Henry | M | 11 | | | 0772891054 | Amiller |
| 4 | Asaba Lozio | m | Kalwence | | | 078072564 | |
| 5 | Naillesie Mason | M | Kaywing | 2 | | 0780361613 | New |
| 6 | R. Kesi | m | Kajwenge | | | 077244 | 5977 |
| 7 | Masereka janakaisai | m | Kunywango | | | 077705288 | Mgu: |
| 8 | BALUKU AUGAStin | | KATWENSE | N | | 0777295113 | |
| 9 | medondo | F | KATWEREY | | | | Medonde |
| 10 | | M | NYABome | 1 | | 07-81990271 | parenter u |
| 11 | and the second se | m | KAMAHANG | | | 078662508 | the |
| 12 | | F | KDMA | | 1 | 0785103 | ou on of |







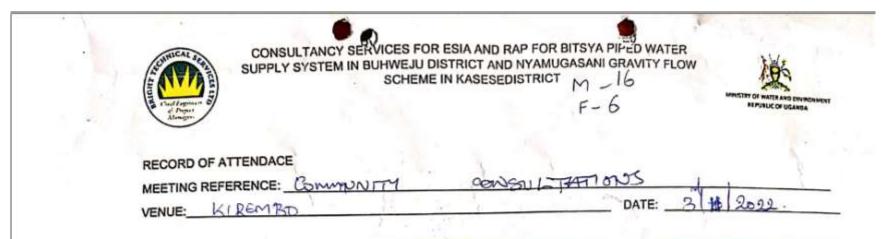
RECORD OF ATTENDACE

| MEETING REFERENCE: | Community | CONSULTATIONS | |
|--------------------|-----------|----------------------------------|--|
| VENUE: KAIWENCE | TRADING | CENTRE KISINGAS/CDATE: 2 11 2022 | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-----------------|--------------|------------|-------------|----------------|-------------|-------------|
| | Muhindo Nicodem | m | Kajwenge | | _ | 078398431 | R |
| | Evanis, masika. | m | Kapirenge | C | 1 | | EM |
| | nucisa MUNTU | m | hanvenge | Sec. 1. | \sim | 0777650798 | (a) |
| | Busimba Peter | m | Bamattao | a | - | 0781966 | 16 D. Peter |
| | KULE Junes | M | BUSINE | 1 | - | 078423054 | |
| | Notiwa Francis | M | thick wahn | aj | ~ | 0787730369 | 17) |
| | Margh Stephen | 2 | Karengeic | | | 0774981377 | Dimmuhi |
| | Muhindo Amuri | Malo | Kamughoben | Farmer | muter. Menus | 070793285 | Stel |
|) | MUKERI JULINS | mole | Kisima sec | LCILCIP | | 0788127262 | Amores. |
| 10 | KAWANAKO WASE | m | KASESE | Montest | Ogmail . com . | 07051212045 | All I |
| 11 | SEMAGANDA DAVID | M | 373 | QUITAINER | | 070859666 | - |
| 12 | | M | Bis/MWis | BASIMKIE | | •10 | |

349





| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------|--------------|--------------|----------------|-------|-------------|-----------|
| | BWAMBALE GEERLA | | KIREMBOCE | Glsecrephy | | 0785355446 | Alta. |
| | MARENE KAJEAN-MAR | 1.000 | KIRGONSO | | | 0782053719 | |
| | Bwambale Joshua | m | Kirembo | | | | SER |
| | Then to B motivo | M | Wire mbo all | former | | 0775929497 | ~ I |
| 5 | Komyombrue Boreph | M | Kipemb Cell | Reasont | | 6785558451 | Sund |
| 3 | MATKULTA JOCKUS | M | Unembo | | | OPTE 54547 | brive |
| 7 | MASEREIKA JOLIKUS | | 31 | 1, | | 077729491 | |
| в | EDMON TARIBARA | 1.1 | (ji | K | | 0787231 | 100 |
| 9 | Buambale nugusting | m | 11 | | | 07621429 | 10 |
| 10 | Kemanyo Dockim | M | Kimanka | | | 076230232 | 胡四 |
| 11 | HZIABAICE JULIEI | F | Kiremi | Hartwine | 2 | 078512920 | SHOP |
| 12 | RALIKUBKEMAE JOSEPH | M | BTS/MWF | Senior Saulogo | | >0701859666 | AB |

| | CONS SUPPLY | ULTANCY SET SYSTEM IN E | UHWEJU DIST | SIA AND RAP FOR B RICT AND NYAMUG KASESEDISTRICT | BITSYA PIPED GASANI GRAVI | TY FLOW | MARTER AND DIVERSINGLA |
|---|---------------------|----------------------------|-------------|--|------------------------------|------------|------------------------|
| | RECORD OF ATTENDACE | | WNTTY | CONSULT | | 194 | |
| | VENUE: KIREM B | Ø | | 20 | DA1 | E: 311 200 | 12 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | ËMAIL | CONTACT | SIGNATURE |
| | Kunne | DUME | in analy | himme | | 772882383 | 62 |

| # | NAME | (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|-------|----------|---------------|-------|------------|-----------|
| | BALUK URA | HM. | Kirembo | busines | - | 0778827852 | p |
| | MBABAZI REGIE | | Kirembo | Faumer | | 078052295 | Pesnes |
| | MASIEADOROTHY | F | | 11 | | 077261325 | s ni.d |
| - | MHUNICOU ELIZABETH | F | Kirembo | Enerrolled mo | ellfr | 0762331831 | 1 |
| 5 | ONERE CHRIS | M | Firembo | coshier | - | 0779025638 | and |
| 8 | KABAFUNJO M.B | F | KIREMBO | | | 077950275 | 10 |
| 7 | KULE IVAN | M | KIREMBO | | | 077675946 | Accel |
| 8 | MUMBERE PORISIO | MA | Kibrango | | | 0979139028 | page |
| 9 | SEMIGANISA BAVID | M. | BTS | Gut Salla | | | Naitos |
| 10 | RIIRA NIEVERLESS | F | Kirembo | BUSINESS | | 0788776128 | (decer) |
| 11 | 15ther MILVERSE | | | 1 | | | |
| 12 | | | 11 | 190 | X | | |

| CONSULTA SUPPLY SYS | ANCY SERVICES FOR ESIA A STEM IN BUHWEJU DISTRICT SCHEME IN KASE | ND RAP FOR BITSYA PIPED WATER AND NYAMUGASANI GRAVITY FLOW ESEDISTRICT M - 42 F - 43 | MINISTER OF WATER AND ENVIRONMENT ARPUSELS OF UGAMER |
|--|--|---|---|
| RECORD OF ATTENDACE MEETING REFERENCE: VENUE: NKUNYU I | COMMUNITY TRADING LENTER M | CONSULIATIONS | 11.2012 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------|--------------|-------------|-------------|--------------|------------|---|
| 1 | BAMUTULALL EXPENSE | m | 1/15mango | Sec Sial | | 0789727631 | Baren |
| 2 | SirikAM2 MARC | m | | Presant | - | 077603785 | Amiles |
| 3 | KIMBKIMBULE Lawrence | m | | Peasant | - | 071178097 | And |
| 1 | BACHATI NOOGHE | e m | | I Finner | - | 077621157 | Hoatet |
| 5 | BUSAMBOLE HAS | 1.0 | Nilling | 1 E Farmer | - | 98142153 | P |
| 8 | Baluku Dawid Kenzum | 0.00000000 | Nhungut | Farmer | - | 078369581 | Ser |
| 7 | MASCEDIAN BRIAN | M | NKANYU II - | Farmer | - | 0778035172 | AXT |
| 8 | Bisogho Selly | AM | NKupy4 II | Farner | 19 <u>11</u> | 07839345 | 87 Brung |
| 9 | Baluku Anoustine | | Nkun | Farmer Br | 100 | 0781339 | 92 BANGIN |
| 10 | Edembe Pasikoli | m | APange Th | Farmer | 1 | 07803400 | 1 Sper |
| 11 | mumbers Nelesoni | M | Vatande TI | Farmer | - | 076151754 | is mumbere |
| 12 | muchinda mayika | m | KabandeT | Furna | man of | 07871987 | 60 DS- |
| 13 | hip ound of hiter | 77 | K USUP 1 | . Jeans | | 077329 | 13455 |
| 15 | Seregened mines | ++. | FMIKAL | Conde | 1 | 174643 | and the second se |
| 16 | Kyakimwa Scovia | - | Nkunyuz | 1260.00 | - | 2100010 | 142 . |

| | | | | | | CF WATER AND ENVIRONMENT |
|--|---|---|---|---|---|---|
| RECORD OF ATTENDACE | | | | | | |
| A State of the second second second second | m | WWITY O | ONSULTA | TONS | | |
| | All and the second second | | | | E: HUY | 2022 |
| in the local second | | CHERO | | 1.1 | 1 the second | 1. P. 1 |
| NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| Lyakimwa Greven | F | Katandal | | 1.1 | 07866395 | 27 KG |
| fellen Kabugh | F | Nekunyu II | - Citra | Alle | - | HK |
| Live Victoria | Ŧ | NKungvI | | | 078605665 | 36 BV |
| | F | Vatandar | | 2.73 | - | Misules |
| -11.4 | F | | 8 1 1 L M | | 07848234 | 7.6 Jun |
| | Vad | A second s | ·I | | 078217422 | 4 Law |
| | - | | | | 07822345 | 62 Bayor |
| | - | | | | 0783670 | 797 |
| | | - | the second s | | 077689779 | 50 Sund |
| | - | S. A. M. T | St Str | 1.6 | 07859331 | 57 |
| | | | | | - | A |
| Kabugh Aven | T | Received a los | | | 0785216137 | 7855778 |
| | MEETING REFERENCE: CO VENUE: NKUNNU I VENUE: NKUNNU I YaKimwu Geeven Lelen Kabugh Bira Victoria Magin Ka Misules enere Tibalmeray umwe baze Lau boy Bertoye Nubughambara Qui Sunday Jones Bira Jong | MEETING REFERENCE: COMM VENUE: NKUNMU I TRAN MIE Yakimwa Grewen F Julien Kabugh F Julien Kabugh F Suira Victoria F Maga Victoria F Maga Ka Misules F enere Tibothieroup F Umwe baze Laukord Toy Bertoya F Nubughgmbara OU M Sunday Jones F Bira Jong F | MEETING REFERENCE: COMMUNITY O VENUE: NKUNYU I TRADING JENTRE MAME SEX VILLAGE YAKIMWU GUENEN F KOHANDATI FULLEN KADAGO F NKUNYU FULLEN KADAGO F NKUNYUI STIRG VICTOVIG F NKUNYUI DAIFIKA MISULAS F Katandali ENEVO TILGALMERAJ F NKUNYUI UMW E BAJE LAU KARDANA F NKUNYUI | MEETING REFERENCE: COMMUNITY CONSULTATI VENUE: NKUNYU I TRABING GENTRE MUNKUNY MAME SEX VILLAGE DESIGNATION (MIF) VILLAGE DESIGNATION (JaKimwu Gueven F Kortandati Luten Kabugh F NKunyu I bira Mictoria F NKunyu I bira Mictoria F NKunyu I bira Mictoria F NKunyu I muse baze Lau Kadaya F MKunyu I umuse baze Lau Kadaya F MKunyu I biya Bertayo F Kasungu Nubughambara ONI M Kalandati Sunday Jones F MKunyu II Bira Jong F MKunyu II | MEETING REFERENCE: COMMUNICITY CONSULTATIONS VENUE: NKUNYU I TRADING ENTRE MUNKUNYUS/OT. DATH NAME SEX VILLAGE DESIGNATION EMAIL Yakimwu Gueven F Kotaudatu Lulen Kabugho F NKunyu i Stira Mictoria F NKunyu i Stira Mictoria F NKunyu i Data Ka Misules F Kataudati enevo Tibathueray F NKunyu i Umwe baze Lau Kaidaya F NKunyu i Sumwe baze Lau Kaidaya F NKunyu i Nubughambara awi m Kalandati Sunday JONEC F NKUNYU i Bira Jong F NKUNYU i | MEETING REFERENCE: COMMUNICITY CONSULTATIONS VENUE: NEWNOU I TRADING PENTRE MUNICUNTOS/OT. DATE: HTMIT NAME SEX VILLAGE DESIGNATION EMAIL CONTACT Yakinnuru Gulven F Kataudau 078663937 Julen Kabugh F Nkunyu I |



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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT



RECORD OF ATTENDACE

| MEETING REFERENCE: | COMMUNITY | CONSULTATIONS | a second s |
|--------------------|--------------|---------------------|---|
| VENUE: NKONTUI | TRADING GENT | re into home to det | DATE: 4" (11 202 |

| | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------------|--------------|-----------|-------------|-------|------------|---|
| 1 | Studay Joseph | m | Kimenago | | | 078179566 | SATINON |
| 2 | DEJA Sime | m | Kasungui | | N. C. | 0717308413 | |
| 3 | Byonnhenga Roma | in | NKun-JU I | | | 07742764 | |
| 4 | BAZARA Jozefu | - | Almanui | | | 078181241 | - |
| 5 | Barkengusa Livia | | KiMAGO | | 16 | 07897400 | the second se |
| 6 | idense Aliqued | | NKUMUII | | | | 1.0. |
| 7 | Masuran Julia | F | NKUNUS | | 100 | 07,8078347 | ME |
| 8 | Kanuge Jetrudan | F | NKUNYUTI | | | | Kany |
| 9 | Masika Mary | r | Kasunguli | | | | Masire mant |
| 10 | Biira Race | F | Alkunger | | | 07822620 | |
| 11 | munindoJana | 1.1.1 | MASURT | | | 077584352 | M.Jahe |
| 12 | KNBUGHA -JAYER' NGURAA | | Kusuna | 1 | - | - | 21 |

13. Muthelb ali chintmet Nkuny 14. Mbambu Nyesi M Nkuny 15-Muhunde Jam M Mauny 16 AGMBA M Maunu NGUNGUE

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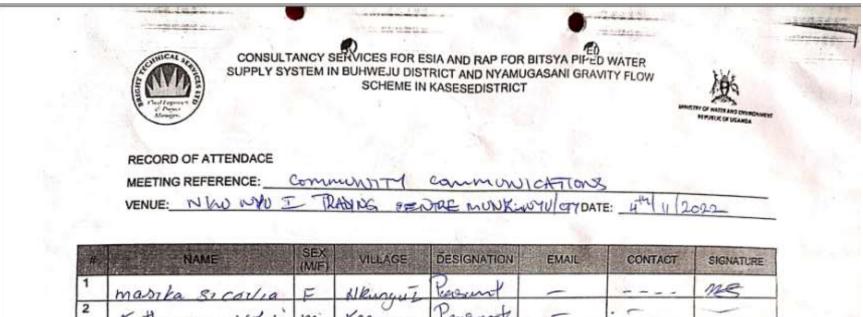


| RECORD OF ATTENDACE | | the second se | |
|---------------------|----------------|---|--|
| MEETING REFERENCE: | COMMUNITY | COMMUNICATIONS | |
| VENUE: NKUNYU I | TRADING CENTRE | MUNKUNTUSTON DATE: Why 2022 | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|---|------------------|--------------|------------|-------------|--------------|------------|-----------|
| | Kisa Alboa | F | KASUNTAN | Farmer | - | 3772-2644 | |
| | FHENGU MIKLON | AF | | | - | 077938152 | |
| | Rabugno Sovieur | | NEUNJUI | Farmer | - | - | - |
| | Muhindo Cosmas | M | Alkingo T. | Peasant | - | - | Abenes. |
| | Kyakimwa Lanet | F | NKunyhi | Deabart | - | 077096664 | |
| | Alipo Michael | M. | " | Peagant | - | 078853837 | 61 |
| | MASEREILA. EXP | m | Kasungu] | Pasant | and a second | 072065336 | 4 Gt Pack |
| 2 | Billyko Johnson | m | NEUNYUI | Farmer | - | 0780286569 | Bit |
| 0 | Rwamzale Jackson | M | Hatonolas | Frince- | [| 0777391478 | |
| | mughuda Josephe | m | Kingamat | former- | ~ | 87 | mis |
| 2 | mithing Hose | m | noxing | Familie | - | 57759235R | Albea |
| | MUMAHA SiM | 0,0 | lie | tari-cr. | - ' | 0779014 | 900 |

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| 1 | masika sicolia | F | NRUNGUE | Keesent | - | | MES |
|----|---------------------|-----|-------------|----------|---|------------|------------|
| 2 | Kathurany Yotise | m | Kasuncu | Pensont | - | | - |
| 3 | Libale ming M | m | NKUNUT | | - | 078127 499 | 2 Mbat |
| 4 | Edisoni sinindi | m | Mkumuz | d | | | - |
| 5 | Refi Kathany John | F | NKuppeT | 11 | - | | - |
| 6 | Bura Sileva | F | NEWniged TI | Famer | - | - | 0 |
| 7 | Kune Jorona | m | | Former | - | 077574574 | 29 margret |
| 8 | Birra margret | F. | NIGUNTOI | Farmer | - | 07733622 | |
| 9 | Malsila Aginge | P. | NICUNTUI | Farmer | | 07224300 | 14 . 3. |
| 10 | Kabuguo suzana | [=· | NIGUN | Person | | | Q . M |
| 11 | Nayzabake Roissmany | - | NK | Project | | 67835495 | man |
| 12 | Masika Mary Jane | F | NK | focusant | | 01855495 | 4 |





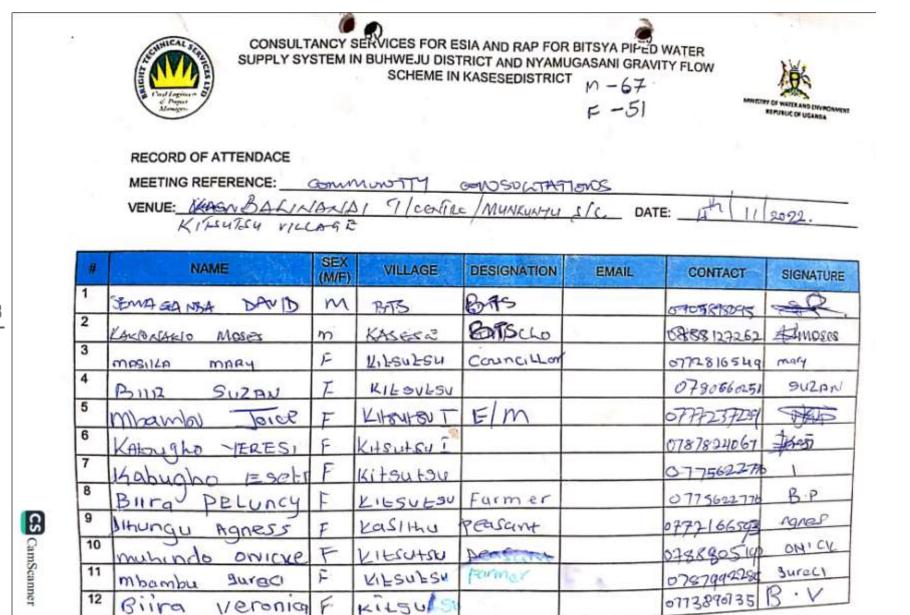
RECORD OF ATTENDACE

MEETING REFERENCE:

VENUE:

DATE:

| Ť. | NAME | SEX (MJF) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-----------------------|--------------|-------------|-------------|--|--------------------------|--|
| | Masika sisiria | M | NIGUAYU II | | and the second | 1 | and the second s |
| | Mbamboo sadress | | NIGUNYU I | 25 | 1 | 100 | |
| | munindo doronika | | NHAUNYUA II | 1000 | N. | 07844616 | 47 |
| 5 | NUCSI MOAMOU | M | MIGUNYU I | | 1 | <u> </u> | |
| | 14abuquo Janefa | F | NIGUNYU I | 5 | | | |
| | Kabuguo Agines | F | Iscitanda | 1 | | | |
| | Bagheni Grace | F | NEUNYUI | 1 | | 077302302 | - |
| | Masereka Udo Kasukutu | M | NKUNYU 7 | N. | | 0787579493 0760442959 | |
| | Palya Racheal | F | NKUNYYI | 1 100 | | | |
| 0 | Keti Mubunga | Ŧ | NKURUT | 10 -1 - | | | |
| 1 | | r F | NK | | | 0775845737 | |
| 12 | GRACE Kakukulu | F· | NE | 1 | / · | 0985568855 | () () |
| B | | F | NIL | - | | 078252207 | 1 |
| Ц | Nyakato Mary | F | NIKY | | | 0787785 | 1H Way |
| 5 | | | NEWITE | | | | Legw |
| 2 | Birra Legini | 9. P | Viennide | - | | | 0 |



| | SUPPLY SY | STEMI | SERVICES FOR ES N BUHWEJU DIST SCHEME IN | RICT AND NYAMUG | BASANI GRAV | ITY FLOW | CO INSTERANO OVICERNA ITURIK CO UGANDA |
|---|---------------------|--------------|--|-----------------|-------------|----------------|---|
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | COM | MUNITY | · Common | 1CATION | よ. | |
| | VENUE: KITSUTSU - | RAD! | NE CENTRE | MUNCONYU | SIC. DA | TE: 21 41/10/2 | -12 |
| | | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATUR |
| 1 | Musa houbi | m | KITONTSU I | | | 678334849 | 1 AL |
| 2 | KULE KENJO | M | الدرجاري | F. | (+ | 077103 7782 | Laura |
| 3 | BILIAMBALE ROBENI | | KHSutsu | flurse | | 0789314651 | BINE |
| 4 | muhinda Batrace | F | 121254254 | F | | | ser |
| 5 | Mamahi Angala | F | KILSULSU | Farmar | | | namah |
| 6 | mbambu Janet | F | Kitsutsu | farmer | | 078783351 | Nor. |
| 7 | Mutindo Moreen | | kitsutsu | Farmer | | 0774042171 | page |
| 8 | Kibaizuli Jakini | F | 12,1sulsu | Farmer | N | | Jollini h 1/ |
| 0 | Aina Kombi | m | Kitsutsu | Farmer | | | AK |
| 9 | | | Kitsutsu | Jannar | | 0785970297 | |
| 1 | HULE BENET | m | 100100 | | | 078-20390 | |



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RECORD OF ATTENDACE

| MEETING REFERENCE: | CommUNITY | CONSULTATIONS | |
|--------------------|--------------|------------------|-----------------|
| VENUE: KITSUTSU | T/GENTRE MUN | WINTO 3/ COUNTY. | DATE: W 11 2022 |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|--------------|-------------|-------|-------------|-----------|
| 1 | Moumbu betty | 7 | Bulumbadele | PEW | | 0779069255 | man , Lob |
| 2 | masika Hodesi | Ŧ | KITSUISY | peasant | 1 | 07707 90054 | 1 |
| 3 | Masura Sarah | E | KITSUISU | pea font | 6 | | MIS |
| 4 | Muhiwa J Ratamba | m | By mobo dele | 2 | | 0775266298 | Hommest. |
| 5 | KULINDirola asasio | un | Kistustus | | | 07-8958552 | Kun |
| 6 | Bira Ruza. | R | Buhimbadde | Regbert | ~ | | 6B |
| 7 | Sarah ASDELD | 12 | Kitenten | 1111 | | 0787585313 | SA' |
| 8 | Bakallania Tours | رديد | WITSUTSU | Dearat | - | ane set | , top |
| 9 | Janet Yohong | P | 1111 | 1111 | | 077661566 | JY. |
| 10 | Kambale M. | R | bymbriddle | 1111 | | 0773-627628 | LOU |
| 11 | Burambale Hora. | hi | KASTANI | 1 | | 0775955262 | Blob. |
| 12 | mas on Ka mutiba | 5 | Kitsuts | 1.1 | 1 | | ma |





RECORD OF ATTENDACE

| MEETING REFERENCE: | Commonity | CONSULTATIONS. | |
|--------------------|-----------|--------------------------------|--|
| VENUE: KITSUBU | T/GENTRE. | MUNKUNYUSKEM DATE: 4th 11 2012 | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|------------|-------------|-------|------------|-----------|
| | Byra JUMET | ١F | KILSULSO | | | | JULALI |
| 2 | Masika SSKa | 1F | Kitsutsu | | ñ | | sskie |
| 3 | MUHINDO BRIGNET | F | Kitasuta | | | | AB. |
| 4 | KULE MICAH | M | Kitsutsu | | | | 1/20 |
| 5 | MASERENA Johnson | F | | | | OTTURTIOS | (22) |
| 6 | Ittembo SAMUEL | m | Kiisuisu | | | 0784696177 | |
| 7 | MASILA Costace | F | KIESUESU | | | 07544407 | restace. |
| 8 | SEMAGANDA DAVID | M | BTS | Gut Dover | | 0705898015 | and the |
| 9 | Bira micheelm | F | HS_jtsutsu | | | 10 | B.m |
| 10 | MASIKA JOVIA | F | KITSUTSU | | 8 | 0785652 | 0 |
| 11 | Burgmbace Neckson | m | Kilsoisu | | - | 0772880816 | Butt |
| 12 | | 1 | KITSUTSY | | | | fores |

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| | RECORD OF ATTENDACE | | SERVICES FOR ES IN BUHWEJU DIST SCHEME IN | RICT AND NYAMU KASESEDISTRICT | GASANI GRA | VITY FLOW | MICH MARTE AND DAVIDDANCE BIPTISK OF USEANSA |
|-----|---------------------------------------|--|---|----------------------------------|------------|---------------|---|
| | MEETING REFERENCE: VENUE: KITSUTSU | TROS | NTRE MON | GON SULTAT | LONS. | ATE: 4 M II | 2022 |
| | NAME | SEX (M/F) | | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | Kabisto Jane | E | Keterty ic | | | | |
| | | 1. | 1Kitsutsu is | | | | |
| - | Burnhole mayle | m | Ketsutsyis | | | | |
| 1 | Mulindo Enos | m | Kitsotni ic | | | | |
| -1 | Rovembale Nalon | m | Kithuthyie | | | 0789330387 | 3. |
| - 1 | matsetsi Danes | m | Kitsuby ic | | | 0781239625 | |
| ſ | | | Kitsufsut | | | 078918650 | THE |
| + | mumbere Joseph | 0 | Kitsytsu | | | 789445890 | NO |
| - | Rule Geofrey | m | Kitsutsu | | | 077044787 | |
| , | | m | KITSUTSU | | | 0774988390 | Fairthe |
| | Buambale Obed | | KATANDAT | | | 0775417703 | Ampaul |
| | SABUNI JOCKUS | M | KINGUISU | | | 07-87-4418467 | Met. |





2021

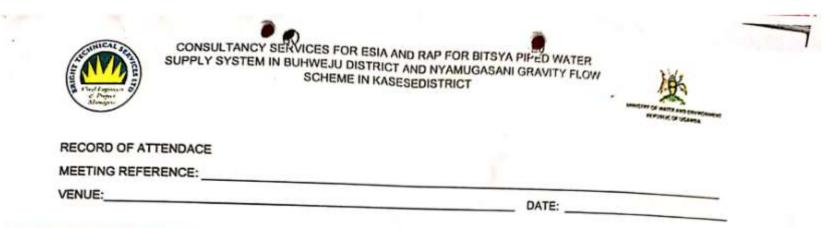
RECORD OF ATTENDACE

| MEETING REFERENCE: | COMMUNITY | CONMU | VICTIONS . | |
|--------------------|-----------|-------------|------------|--|
| VENUE: KITSUTSU | J'ICENTRO | MMNIICUNSYU | | |

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------------------|--------------|------------|-------------|--|--------------|---|
| 1 | MASILA MARY | Formal | KL-SULSUI | Conneillor | and the second sec | | and the second se |
| 2 | | | | Councillan | | 07728:6540 | moly |
| 3 | Muleghosya Ainey Tastru Kikom | d m | KITSUBU | | | | Ready |
| 4 | | PL M | 11 | | | 07-72311 094 | THU |
| 5 | Banywana | m | KITSUISU | | | 077 9013795 | - Banob |
| | Brennigele ERind | m | 1. | | | 07849175 | HAF. |
| 6 | Kule WilFred | M | A | | | 0762251991 | 3000 |
| 7 | Mumbere Jimmy | m | this Sutsu | | | | Sury |
| 8 | BHSULULU | m | wulison. | | | | tup |
| 9 | Buampale George | | KITSOTSUIT | | | 0772774712 | |
| 10 | Kalenderfascal | | Byhimberle | | | 0787736570 | |
| 11 | NATIO MASERERA G | M | KITSUTSHI | 6 | | 0101000 | |
| 12 | Masereka JED | 30/ | Kitcust | | | 0725281 | Edel |

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| CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT | | | | | | | | | | | |
|--|-------------------|--------------|----------|-------------|--------------------------|---------|---------------------------|--|--|--|--|
| | | | | | | | | | | | |
| VENUE: BALINGANSI TURTING / KISUISY VILLAGE DATE: 11-2012 MUNKUNTU SILOUNTY | | | | | | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | | | |
| 1 | makara Coline | m | Kitzuten | formers | Manager and State of the | | Contraction of the second | | | | |
| 2 | TUMUSIME JO | USI | | famers | | | | | | | |
| 3 | Benson·13 | M | Litenten | Farmers | - | | | | | | |
| ł | BURG JONES | F | Kitsutsu | famers | | | | | | | |
| 5 | ESMUS ISmalhabira | F | Kitsutsy | Farmer | | | | | | | |
| 3 | Masika JackLine | F | Kitgatan | Farmer | | | | | | | |
| 7 | mbamby unice | F | Kitenten | Peasant | | | | | | | |
| 8 | Masika Jesca | Ŧ | Alland | Recent | | | | | | | |
| 9 | mastry tesca | F | | Farmer | | | | | | | |
| 10 | mis makwana | F | | Present | | | | | | | |
| 11 | Bija heer | F | | Romant | | | | | | | |
| 12 | Bila addoch. | F | | A | | | | | | | |



| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|-----------|-------------|-------|---|-----------|
| 1 | Kul inipites a pau | 6 M | the State | billinder | | 978605988 | |
| 2 | Baluky Dand | - | Vasitty | peasan | - | 77886au | |
| 3 | Kikony Jo Sol | m | 1 | former | r | 1 | - 55 |
| 4 | Thembo Aurid Findo | 10. | KHOUTSU | T | 1 | 09799224521 | ALC |
| 5 | MASCHERA ACOUST | 1000328 | KISOESU | _ | / | 07859746 | 0 |
| 6 | Know B. | m | 1 | 1 | 1 | 1 | |
| 7 | BWAMRALE R | m | | | | 188 2587 | 64 |
| 8 | masika mukuhi | F | - | - | - | 9785959 | 3 |
| 9 | BURA JOYLEEN | F | | | | 078141272 | Gener |
| 10 | turele monence | m | - | - | | | |
| 11 | Kues asasa | M | Kitsute | for | - | pu- | - |
| 12 | KaSulenge m | m | Kitsuter | | | | |

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RECORD OF ATTENDACE

VENUE: BALLNAND TICENTRE / KITSWIGU VILLAGE DATE: HTM # 202 WONTWOND S former.

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|----------|-----------------|-------|-------------|-----------|
| | Kadembr.m | m | Kitzahi | for | - | - | |
| 2 | Boito charles | m. | Kitsutur | clahei | | 00979297900 | bet |
| 3 | BALIWODEMBE JOSEPH | M | BTS/MUDE | Senis Sucelogia | | 0701859666 | H |
| ŀ | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
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| 11 | | | | | | | |
| 12 | 2 | | | 1000 | | | |





RECORD OF ATTENDACE

VENUE: BALINGANDI FICENTINE / KITSUTSU VICCAGE DATE: 4th 11. 2022 MUNIKUNTU SLOUNTY

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------|--------------|----------|-------------|----------|---------|-----------|
| - | markenians Richard | In | Katzuten | former | 1.4.2 | | |
| 2 | musema anastes | aF | Kitsufie | | - | | - |
| 3 | The salone | F | - | - | - | | |
| 1 | ndibia Edita | m | - / | | 6 | | |
| 5 | MUMPERE ROBAL | M | | | | | |
| в | KINNANGA Josefu | m | | | | | |
| 7 | Mowende Vene | in a | | | | | |
| 8 | Invitido Jouig | À | | | - | | |
| 9 | muhindo midiro | F | | | <u> </u> | | |
| 10 | | m | | | - | | |
| 11 | | 5 | | | A | | |
| 12 | mumbere BdigA | m | | 1 | | | |

| | CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT | | | | | | | | | |
|----|--|--------------|------------|-------------|---------|-------------|-----------|--|--|--|
| | RECORD OF ATTENDACE MEETING REFERENCE: VENUE: | | | | DA | TE: | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE | | | |
| | Bwambale Alex | m | Ictsutsu | Balahoda | | 077545446 | CHER | | | |
| | JORG Kule | m | K'tsutsut | mulimi | | 5784425 | GRJ | | | |
| | MBAMBU SYLIVIQ | F | KiteSutai | | | 078142732 | SILIVIO | | | |
| | mbambu Jenevel | F | 12125u25wi | Farmar | | 0782365514 | lonever | | | |
| 5 | MASIKA VINiLandor | Ĩ- | KILSULSU Z | faimal | | 076111 4327 | | | | |
| 3 | BWAMBALE YOLGO | | Kitsutsu | Bussineumen | | 0773659920 | | | | |
| 7 | NLebus Alexander | m | | Burisenan | | 0773-2664 | Date | | | |
| 8 | The and the ponder | | | | | | | | | |
| 9 | | | N | | | | | | | |
| 10 | | | | * | | | | | | |
| 11 | | | 1 A. | | 1.1 | | | | | |
| 12 | | | 1 | | · · · · | | - | | | |



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RECORD OF ATTENDACE

MEETING REFERENCE: _ CONSUL/051025 eavers VENUE: KITABY SICOUNTY HALL DATE: 07-11. 2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------|--------------|-------------|-------------------|------------------------------|-------------|-----------|
| 1 | Kyana Steven | M | Kitaby sk | H/ASSistent | - 1 | 0773714457 | 0 |
| 2 | MASTICA SAMPORT | F | ICItabu SC | Cha | Saduasinasikag Qamail Com | 0773254934 | |
| 3 | NOOBYA FACKRON | Ne | KITABUSE | Subconicht | 2.00 | | 0.1 |
| 4 | KYANA ROBENT | M | KI TABUSIL | 10 | provil-com | 078208218 | P |
| 5 | mullo Robson | 5 | Kipstu sic | Pichnel | 759 8 Jonan Cr | | 1.0 |
| 6 | Mbaluhonba madeste | m | 101 tabus/c | V HT | 0784721228 | 0784721228 | |
| 7 | SEMAGANDA DAVIS | ,5 | BIS | Gent Sour | Englad con | 07-05898095 | Alt. |
| 8 | BALILUBBEMBE JOSEPH | M | BTS / MUDE | Server Socialonia | 0. | 0701859666 | 報 |
| 9 | | | | | | | |
| 10 | | | | | _ | | 202 |
| 11 | | | | | | | Q |
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MANGERY OF WATER AND ENVIRONMENT

REPUBLIC OF UGANDA

RECORD OF ATTENDACE

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MEETING REFERENCE: -COMMUNITY 6CADODS VENUE: BRIANICA TILERFILE NATORATORI S/LOURCH DATE: D7 2000

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|--------------|------------|------------------|-----------------------------|-------------|---|
| 1 | SEMAGANDA DAVLD | Μ. | BTS. | GNTDriver | Canal Gu. | 670589895 | æ. |
| 2 | Mberr Stephen | m | Manuquesmi | CIP Licity | Moennobuile | | Non |
| 3 | Mulindo Chanles | NOT | Bwanica | cinia | maturdichorly major Sjones. | -0771637519 | THE |
| 4 | NDAHURA EDWARD | M | Murun | councillor | Melalinaska | 0783345993 | Marrara |
| 5 | Kisembo matiya | M | BUGNIKAT | CIPILEI | - | 0785120520 | 0 |
| 6 | Mosereta Benet | ue | Cayongo | c/person LC | - | 0775735200 | Alla. |
| 7 | KIPDA RAPATEL | m | muruti | CIRLLCI | - | 678196050 | Wing Her |
| 8 | monara anopro | m | Rienalia | servis | 2 | 271552966 | - Contract |
| 9 | Idamer pericu | | 159921 | pesersat | | 076053505 | 112 |
| 10 | Kahoza Kellen | F | myhumule | Concillor | • | 07705488 | Holo |
| 11 | KAQUENG-11 L-HOIA | F | 159971 | Giso | | 020020 | the second se |
| 12 | | M | BTSIMUE | Soviel Sociality | | 0701859666 | an |



CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT m-10 MINISTRY OF WATER AND ENVIRONMENT F-3 REPUBLIC OF UGANDA 7. G.D Leaders RECORD OF ATTENDACE FGD MEETING REFERENCE: NYAKASONZI DATE: 8'11' 2022 VENUE: SEX NAME DESIGNATION VILLAGE EMAIL CONTACT # SIGNATURE (M/F) 1 PATRICE 0A41556ST Lycher AD JE L Clede m Hampasa 2 Stephen m LCILLelter Manugerini 972-900879 Alra 3 aromagy 1 Mose LCICRESS 0772613419 M Dwentuha 4 0781984425 NAMUGASANI WARGA COUNCILLO Kn PHOEBE F KASANDE 5 m Jenni Sacologist 0751559666 MKUEBIS Baliardembe 0701850103 徑 6 f MWE/BT(Socio logist GABA DENICAH Gini cho 0958123262 Auser MKEISTJ 7 KAKIONAKIO MOSES M K. Hudig

GISO

SAS

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diet

DARISH WHITE Edemican

IGBA ZI

M KAmukali

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Sereka Laurique M Kamuruli

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KARUNGY' LYDIA

CAANZI'B. Viver

Mg EDWARD M

ASINGO EDSON M

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numeroland . sporetester





RECORD OF ATTENDACE

MEETING REFERENCE:

VENUE:_____

DATE: _____

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------|--------------|------------|------------------|-------------|------------|-----------|
| 1 | MULTINAD CHARLES | M | BWANNICA | CITILEN | multicherby | 0771637519 | |
| 2 | BALIKUNSAMBIE Joseph | m | BIS | Sensir saidly is | . 0 | 0701857666 | * |
| 3 | | 28 | - "H | - | | | |
| 4 | | | | | | | |
| 5 | 1 v | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | 1.63 |
| 8 | | | Marshall . | | | - | |
| 9 | We can a married | dis. | | | | | |
| 10 | Mr. as a mar | | | | | | 1 mg |
| 11 | 14 Kur | | | | | | |
| 12 | | | | | | | |

| | RECORD OF ATTENDACE MEETING REFERENCE: | STEM II | murity | CONLSULT | JGASANI GRAVIT F-6 F-6 | Y FLOW | TOP HATER AND DEVIRONMENT REPURSIC OF USANDA |
|------|---|--------------|--------------|----------------|------------------------------|-------------|---|
| | VENUE: HAMUKUNG | y B | L'KA | FRIE S (LO | UNIP DATE | 9.11.20 | 22 |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | KIMWE WILLAM | m. | Hamereungu | Profor | | 0779992576 | (K) |
| 2 | NGAS 90 John. | m | Hamutungu | | | 0716035735 | laran |
| 3 | PAUL KAto | h | HAMO KON GO | | | 0775731931 | Paul |
| 4 | Muhamudu Homanj | M | HAMUKUNGU | C MAN LEI | | 0775253316 | Atturely X |
| 5 | Rwakaseny; James | M | HAMMUNON | ELDEC | | 0781598996 | the the |
| 6 | Kaije wango Selly | m | Harmerun pu | Flder | | ୦୩୮୧୯୫୪୪୧୫ | June and |
| 7 | KANAN ISAYA | M | HAMULUNIN | Area concillor | Kanan 1200507 | 0785376993 | Kaitas.1 |
| 8 | MULAMA DIMUSE A. | M | HAMMellenhu | w and a second | mail.com | 0752676307 | 10 a |
| 9 | Kasasin Roya | M | Hanukne | 111 | 1 | 07B.25 4472 | Kinge |
| 10 , | IUSIME ? KIBOSI | m | Homekwar | Residence | | 07651413683 | Thesame |
| 11 | XILYAXIABO SULAH | M | HAMANKUNGU S | DEFENSE | - | 0757628/92 | Sut P |
| 12 | MUHINDO JAMAL | m | HAMUKUNGU | BALIA | - | 072673707 | Somun |





RECORD OF ATTENDACE

| MEETING | REFERENCE: | Con | mo | WITT | | CauguITATIC | NOS. | |
|---------|------------|-----|----|------|-------|-------------|---------|------------|
| VENUE: | HAMUKU | NGU | B | L. | KATWA | SUB-GUNTY | DATE: _ | 09/11/2022 |

| | MAKE | (ME) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---------------------|------|--------------|-------------|-------|-------------|-----------|
| | Muhamudu Ismail | Nº1 | Hamukungot | | | 076204908 | the |
| | Alihabwa Jeremiah | M | Hamirkong | A | | | Aguo . |
| | Sentonas Rathid | n | HAMU KUNGU A | * | | | 0. |
| | Muanear GopFUEL | M | Homesengepie | 00.000 | 4 | 0772328961 | Au |
| | Boym Jumeis | 01 | Hankings | ~ | | 0482336737 | fran |
| 5 | loombire bayid | m | Hamukunku | 11 | | 0706446552 | -10- |
| | Raburamn Ramadhan | m | Hannkungn | Ir | | 0700730542 | K2 |
| В | MUGARRA NELSON | M | Hanversy | 17 | 4 | 07-7420.500 | Hourson |
| 9 | Kyomumaryy, Gettind | qF | Hamuerey | 1/ | | 0778457258 | de. |
| 10 | Kemigisha Evelyne | f | Hamakanga | 10 | 11 | 0705847548 | Kengto |
| 11 | MUTATIZWA JACION | w F | HAMVEUNG | M | 11 | 0707766315 | Joneare |
| 12 | MHUNGU BECKT | F | 11 | 11 | 7] | 070308150 | Mar - |

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RECORD OF ATTENDACE

| MEETING REFERENCE: | Commonity | CONSULTATIONS. |
|--------------------|-----------|------------------|
| VENUE: HATTURE | . BPARISH | DATE: 09/11/2022 |
| | | VIII 2043 |

| 建建 | NAME | SEX (WIE) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|--------------|-----------------|------------------------|-------------|-----------|
| 1 | MUHINDO ROSET | F | Hamukungu | V | House and Got Research | | Loset |
| 2 | NINSIIMA PANINI. | M | HAMUKUNEU | | | 0750562074 | Pamo |
| 3 | MUSTBUZI NELSON | M | Homokung | 2 | Musubazinelanda | 0775555072 | - Dereso |
| 4 | Jovia Bigawa | F | Hamukungu | | 0 0 | 0772363546 | |
| 5 | MUCENTE NEESON | m | 13 Anutung B | Filtramon | magenarcero | 0702 836747 | |
| 6 | Murunguz Hannz | m | HAMUKONGU'B" | BUSSINESS MAN | | 0771388420 | 1A tains |
| _ | Baltidense Grep | M | MWE(BIJ | land beneligity | | 90857866 | KP- |
| 8 | 0.1 | | | 0 | | | |
| 9 | 1 (A. 1995) | | 1 | | | | |
| 10 | No. | | | | | | |
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RECORD OF ATTENDACE

VENUE: KASUBI, KABAI (KASUKCAULLI (1/CENDILE) DATE: 9111-2022

| | NAME | SEX | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|-------------------|-----|-----------|-------------|-------|-------------|-----------|
| 1 | BLAMBALE K. Amon | m | Kibeh | | | 07825861 | 2 the |
| 2 | Oxophu George | m | Kibno | | | 0753595521 | Clement |
| 3 | SSE JJEMBA BELIJA | M | Kibati | | | 07.0533144 | (Del) |
| • | Kull GA Goma | M | KABURG | | | | k.g |
| 5 | SALIMU | M | Bathibali | | | | E. |
| 3 | HALidi Llower | м | KIDATA | | | | house |
| 1 | VIRa James | m | Kipat | | | 0746454 | 1000 |
| В | | an | Kimbati | | | 070 7546872 | and |
| 9 | KAKURU | M | Kimbati | | | | Breck |
| 10 | KiKUARDi KUSANO | m | Kipen_ | | | A507.987 | |
| 11 | AMUZA BW ALI | m | KIBATI. | | | | marca |
| 12 | ASRABA | n | KRAT' | | | 0754901083 | |

| RECORD OF ATTENDACE | | SCHEME | N KASESEDISTRICT | - | |
|---------------------|-----|----------|------------------|---------------|--------------|
| MEETING REFERENCE: | Con | um un 17 | CONS | DATE: | |
| NAME | SEX | VILLAGE | DESIGNATION | EMAIL CONTACT | SIGNATL |
| PILA EVISI | F | KIDATI | | 078674985 | |
| Asha Bink IDDI | F | K.BATI | | 07538500 | 0 |
| MEMIGABO ANNITAH | F | KIBMTI | | 075739062 | CHANTER |
| Mbaboz: Tesunamore | F | Libati | | 077527748 | - |
| Liconco Juliet | F | Kibati | | 0781 941851 | Kical |
| LUCKY DOROTHY | F | KIBATI | | OTODASSIAS | -HSHA |
| IUSEMERIRALE MARIA | F | KIBATI | | - | mangi |
| KTOHIRWE GABDRELINA | F | KIBNTI | | 0704603337 | Kydin |
| KINBERE DAniel | m | KIBATI | | | Helo Helo |
| BALILUDNEMBE JOSEPH | m | BISIMUSE | Scow Sudajsk | 0701859666 | 20 |
| 1 | | | | | 1 |
| 2 | | | | | - |

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| | CONSUL SUPPLY ST | TANCY YSTEM I | SERVICES FOR E | ESIA AND RAP FO TRICT AND NYAI N KASESEDISTRI | ALIGASAMI CDAL | ATY FLOW | NETATION WATERAND ENVIRONMENT |
|---|---------------------|------------------|----------------|---|----------------|------------|-------------------------------|
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | Com | MUNITY | CONSUL | ATTONTS | | |
| | VENUE: MUMPED VILL | HOE-H | SHOEWY L-K | ATTWE S/cas | WTT DAT | re: 9.11. | 2022. |
| _ | | | | | | | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| 1 | MUHINDO ALSHA | F | MWARD | FISH MONCREA | - | 0784693035 | |
| | KANDUNDULA MONIC | F | MUMADO | Fisht MONGE | - | - | |
| | DAYLAH MASILKA | F | MWARD | FISH BUSINES | | : | |
| | JULIET MAGILIKA | F | MUARO | Fish praines | | | |
| | JANET MUSULALL | F | musano | Fallensing | _ | 1 | |
| | Kisembo Alia | F | 1. 2. | - | | | |
| - | Jump Samuels Kuwees | m | MWWO | Ful manager | | 0760157574 | |
| | Baruganane Krian | KA | muous | 1 Martin | | 0762415919 | 1 |
| | Nima Andba toweri | M | Ky. Auso | FIELMAN | | | 1.1.0.00 |
|) | WATTURORE HABERI | | MWARD | TISHMAN | 0779745765 | 0795143763 | Hotunto |
| | ATMEBULOMA . S | M | nurtho; | Fistmuth | | | AS |
| | MASERENA JUNIOR- | m | Mutho | Fignman | | | Magere Ka. |



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RECORD OF ATTENDACE

VENUE: MKGRO VULGE-KASENYI L'KAIKIE S DOUNDADATE: 9.1112022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|----------------------|--------------|---------|-------------|-------|-------------|-----------|
| 1 | MUgamBE SALura | m | MWARD | FISHIER | | 075669542 | h main |
| 2 | Bagung Alainu | M | least, | _ | - | 07568927 | |
| 3 | FATER MOMBR B2C | F | | | • | | |
| 4 | SWAMBALE DIEGO | M | Mwaro | Fisher | - | 0750425175 | Bithy H |
| 5 | Borge purger purger | EV) | Muiomo | othens | 4 | 0786016003 | Bes |
| 6 | KASITA MGA | M | | | | 077419186 | |
| 7 | Charriles Haroli | M | Kigabo | Bout owner | - | - | Kanpi |
| 8 | KIKO JOShwa | M | mwana | Fisher | - | 0776220846 | afat |
| 9 | PIUS NOICHEAL | M | muceno | R· | L | 070379773 | Tracer |
| 10 | MATTINE MUSISI | n | MWARO | B | | 1779112237 | Abicho |
| 11 | NGADIRADO BENETAMINE | M | MWALO | M.D | _ | 07066617-82 | DANS |
| 12 | Maliko KENZA | M | | Fisher | - | - | - |



> MINISTRY OF WATER AND EVVIDAMENT REPUBLIC OF USANDA

RECORD OF ATTENDACE

MEETING REFERENCE: COMMUNITY CONSULTATIONS

VENUE: MWARD VILLAGE -KARENY [L.KATHE S (BUNTY DATE: 9.11-2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--|--------------|-----------|-------------|-------|------------|-----------|
| 1 | Kabumba . Em. | M | | | | | |
| 2 | A STATE AND A STAT | - | | | | 075304785 | 0 |
| 3 | Bwambal JOHN | M | Kyerrunda | | _ | | ble. |
| | ALIBISIDILE.L | M | 16 GADD | | _ | | |
| | BUIRD AFUSA | F | mumbo | | _ | 07826888 | to ber. |
| 5 | 5ALI HENRY | M | 4,6060 | | | 07582587 | |
| , | BASIMENTA GOULIM | | MWARD | | - | | ¢) |
| 1 | Bathmin Edites | m | mon | CHT.C | - | 0777749494 | BEGSON |
| , | Mr. Aziz Kanyabindi | M | Kight. | Filherman | - | 0704484276 | |
| 0 | MUGISHA DEIBRIEL | m | | FISHEL MAN | . ^ | 0706434280 | Di6. |
| 1 | BIRA DAUDER | F | KIGABD | RESEDENT | _ | _ | Br |
| | NYAMWIZA HADJA | F | MISARO | RESEDENT | - | - | nel |
| 2, | SSCEANDA ABDUKARIM | m | Ka | FISHER MAN | _ | - | 1.4 |

| | C Participant 8 | | | KASESEDISTRIC | | BERRITIN' | OF WATER AND ENVERONMENT |
|---|------------------------------|--------------|---------|---------------|----------|------------|--------------------------|
| | $\mathbf{\mathbf{\bigcirc}}$ | | | | | | TRUBLIC OF USANDA |
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | | | | | | |
| | VENUE: | 1 | | | DATE | : | |
| | | | | | | | |
| | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | KANYORO BRIAN | m | KIGASO | Fisher | | 07-8255917 | -tar |
| | Zeging KARigh | 6ç | MWaro | ····· | | | HRI |
| | masweed knowle | Am | MWanDo | • | | | Mach |
| | Ruzideo Kither | om | merco | | | | |
| | MASurvienseleySt | M. | myaro | | | A | |
| | BUSINGE ROCKY | m | MWARD | Ficher | - | 0703343291 | Brigger. |
| | Mbabazi Hulaha | F | Mward | | - | 075172414 | mbabazi |
| | Bingoma George | M | Kigabo | Fisher | | 0741219201 | frille. |
| | miskozi Saekson | m | Kiaabo | Pris | | 0779559517 | and the |
|) | BUTTALE SHABAN | M | KIGTABD | TEACHIER | mail.com | 0783609404 | - Alani |
| | Asimone ruling | m | Kiggbo | Charty | Ð | 0775418182 | June |
| 2 | BUSINGE IVan | Nu | musolo | ENVE | | 070640326 | A5: |

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| | SUPPL | Y SYSTEM | IN BUHWEJU DISTRICT AND SCHEME IN KASESED | RAP FOR BITSYA PIPED WATER NYAMUGASANI GRAVITY FLOW | |
|----|--------------------|--|--|--|---------------------------|
| | Cont Englishin B | | | F- 9 | MARETRY OF WATER AND DAVE |
| | | | n. | diam's an | REPUBLIC OF UGANDA |
| | RECORD OF ATTENDAD | E | | | |
| | MEETING REFERENCE: | Com | MUNITY CONSAL- | ions | |
| | | | LANDING SI | | .11.22. |
| | · | | | | Et' |
| | | SEX | VILLAGE DESIGN | ATION | |
| | | 11111111111111111111111111111111111111 | A CAREACE PESICIN | ATION EMAIL CO | TACT SIGNATURE |
| - | Kule Amos Mu | June M | Kahendero | 077 | 9155752 00000000 |
| | Kavania, Robe | NAM | Lahenders | 0759 | 619111 Umminina |
| | ZI/WA FACK | son M | Keehender | 077 | 281024 7 |
| | KinDNOMUSE HATOR | ah F | Kahendero | 07-60 | 1345144 14 - 14 |
| | milingle Hadila | IE | 2/ahandera | | 1 1. |
| i. | Alinianza JAFA | n | Kahendera | 207 | 289200 Amen 2' |
| Q. | The second second | | Vahendera | | Basai |
| 6 | Mulogenisa ged | 9 | 1 - | A-17/1 | 238011 KINIGS |
|) | KAGORO chav | | Kahenderon | | 6722050 Ki-J- |
| 10 | KaPamba Jos | ent. | tiahendero | | |
| | ISAHATI LAILbei | For M | 16 ghendere | 0787 | 2857125 LD. |
| 11 | | / / | | | |

| | * | CONSUL SUPPLY S Critif Frighter bo Alengen | TANCY YSTEN | Y SERVICES FOR E IN BUHWEJU DIS SCHEME IN | ESIA AND RAP I TRICT AND NY/ N KASESEDISTI | OR BITSYA PIFE AMUGASANI GRA RICT | VITY FLOW | STATE OF VALUE AND DIVISION MENT REPUBLIC OF VALUE AND A |
|---------------|----|---|----------------|---|--|---|---------------|---|
| | | RECORD OF ATTENDACE | | | | | | |
| | | MEETING REFERENCE: | Cov | MMUZNIT | | | | |
| | | VENUE: KAHENDE | RO | LAXIDING | SITE | THON. | | |
| | | | | | din | DA | TE: 10 . 11 - | 2022 |
| | | NAME | SEX | THE REAL PROPERTY OF | CONTRACT NAMES OF | | | ALC: NO |
| | 1 | | (Mar | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | - | BIIRA LINDA | F | | | | | |
| | 2 | MUSOKI MAGURE | tf | | | | 07/412.256 | |
| | 3 | BAGABE RICHARD | m | KAHENDERO | | | 0119564531 | Oreald |
| | 4 | Ribbaug BadiRy | | PHOLE POPPO | | | 0782111157 | |
| | 5 | 1 7 1 | M | 11 | | | 0703266 | |
| | 6 | 1. | | KATTENDER | | | 0775418147 | nun many. |
| | 7 | Camurica Crorge | M | Cahondero | | | | george |
| | 8 | BAHAII SABASTIYAN | 3M | KAHENDER | | | 07603394 | 2 BASAS |
| | | SEEBANA GODFREY | m | KAHENDEROI | | | 0785168511 | Stas' |
| ß | 9 | Sandolog Abdallah | M | KalinderoI | | | 075442462 | Benfelog |
| CS CamScanner | 10 | Asimwe Karpulanok | M | Kahendero It | TIVHT | asimwelland Wolfer SIFR | hands 0774038 | 832 Hissimve |
| nSca | 11 | Kabusabe margret | F | kahendeoli | | 1990 | 0783912139 | |
| nner | 12 | ALUBE JUMA | M | Kapencherk | Leickerson | | 0773916579 | the G |





RECORD OF ATTENDACE

MEETING REFERENCE: Community Consultation

VENUE: LAHENDERD CANDING &ITE:

DATE: 10.11.2022

| Ŧ | NAME | SEX (MIF) | WILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|---------------|-------------|-------|-------------|--------------|
| 1 | AVID SSEMPALA | M | KAHENDERO | B15. Valoer | - | 0701575903 | Arg |
| 2 | LUBEGA RAMADHAN | M | V. ANTOS DERO | | | 0783635810 | |
| 3 | Zime Jours | m | Karensur | 5) | _ | 0712987291 | |
| • | Munaba Pauline | M | Kahundero | | - | 07,80867785 | And |
| 5 | Muhmad Raudowe | N | Baraburg | 2 | | 070757215 | are |
| 5 | Buschozi peter | | Kahercher | 0 | | 0783203774 | |
| ' | Burne Pusika | F | Kerherche | J | | | Bujun |
| В | Romy DAS | M | | | | 075851 | - |
| 9 | KAMMA ALI | m | Kettendet | | | 07-534619 | 10 . 1 |
| 10 | MUJUNI JONAN | m. | Kehendere | firmon | | 0784525572 | mitin |
| 11 | 20 WARAI AMULIE | M. | 1LaHGND ER | - | | 07724348 | South States |
| 12 | BIMRumanon toset | | 164thavore | | | 078 3432582 | |



| | & Courd Lagringer O & Program | | | | KASESEDISTRI | | Line() | REPUBLIC OF DEAL |
|----|----------------------------------|---------|-----|-------------|-----------------|----------------|------------|------------------|
| | RECORD OF A | | | | | | | |
| | | | | WNIIJ (| | | | |
| | VENUE: | KAHEN | DER | O LANDIN | 4 STIE | DAT | E: 10 NW | 202 |
| | | | | | | | | |
| | A AN | | SEX | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNA |
| 1 | Gumma 3 | STECHYS | m | 1 habendero | t | | 017526890 | 2 Tect |
| 2 | KAKIO KLAKIO | Mescz | m | Kasese | GMI CLO | BE WALL . COMM | 0788129262 | The |
| 3 | BALIKUSSEM BE | | M | BTS I MUSE | Serier Sauloris | | 0701859666 | 245 |
| 4 | | | | 1.1.2.2 | 0 | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | 1 | | | | | | | |
| 10 | | | - | | | | | |
| 11 | | | - | | | | | |
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RECORD OF ATTENDACE

VENUE: NYAKATONZI TRADING CONTRE - MYAKATONZO SLOWNITDATE: 11.11-2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|---|--------------|-------------|-------------|--------------|-------------|--|
| 1 | Rwamwaro Swijin | m | Isaan | mentor | | 0784688551 | Thinan |
| 2 | yosia waada | m | mohimule | member | | 0114792400 | yosha Ng |
| | LUCUSANISA Michear | n | Buhamed | Member | | 076241430 | Lucion |
| | Kamany Gorder | | myhumice | managerm | Kie Ogmalia | 192997776 | Kallmann |
| 5 | MUYAMBI KENNETH | 3 | Muhumule | V. djewan | Vinginal com | 0771970419 | Vimmy |
| 3 | RWAMUKENSO DAVID | m | ISaa ZI | Momber | - | 0789268941 | RD |
| 7 | Mwanga Geofrey | m | Bulkangara | member | - | 0779592970 | me |
| В | Kachope Tom | m | Kyasende | Member | | 0773-254857 | and the second sec |
| 9 | Insingoma Isaac | m | Bukangava | Membrou | - | 077433494 | 5 Isaac |
| 10 | Kato Jacob | m | Bullangara | member | - | 0786108320 | -1 |
| 11 | Muqyenyi Abaho Lord | M | kyarenda | Number | Lad muplemi | 0785359625 | AND - |
| 12 | and the second | m | Nyamugasani | Member | - | 0782033125 | 302 |



| | | | | and the | | Remor | ALFURIE O |
|----|----------------------|--------------|--|-------------------|--------|--|-----------|
| | RECORD OF ATTENDACE | 0 | | and the g | 1 | -76.5 | |
| | VENUE: | | | <u> </u> | DA | TE: | |
| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | ein |
| 1 | Byabaracija Patro | 2 19 | manuel | | | CONTRACTOR OF STREET | SIG |
| 2 | KANTU MOSES | m | the contract of the contract o | | | 0755079 | 667 |
| 3 | RWEHOLA STEPHEN | 191 | 1SAAZi | | | 07795350 | 1 |
| 4 | 0 | | | clman her | | 0772-3680 | 1 |
| 5 | Bolikuddembe Joseph. | m | BIS/MWE | Serior Sucrobyit | | 0701859666 | 1 |
| 6 | | | | | 1 700 | 1 | |
| 7 | | | | | 14 11 | | 100 |
| | | | 1 | | 100.00 | 1. | |
| 8 | No. A. S. L. J | 1 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | The second second | | | |
| 9 | | See | N. Call | | | | |
| 10 | | 6 | | 1 | | | |
| 11 | and the state | | | | | | 10000 |
| 12 | | - | | | | | |



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WATER AND DR TPUBLIC OF DEALER

FGD

RECORD OF ATTENDACE

VENUE: KILAMBAIRO TRADING CONTING - KITABU S/G DATE: 11. 11. 2022

| | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|--------------------------------|--------------|------------|-----------------------|-------|------------|-----------|
| 1 | AISHA TWIMAMOSIKO | F | Kilambarro | Persont | - | 012795330 | |
| 2 | Roseman Masika. | - | Kilandairo | Peasant | ~ | 076990291 | Massika. |
| 3 | Mhoembu Rehema | F | Kilindaliz | Peasan + | - | 0775475962 | Mbevenbul |
| | MASINA LOICE | F | Kilambail | Peasant | - | 1 | m-4 |
| 5 | KABUGHO JULIET | F | Kilambaro | Peasont | - | 078187819 | K.J. |
| 6 | MAGIKA HADIJAH | F | KILAMBAIRO | PEABAWT | | 0773955069 | Mt. |
| 7 | AGABA DENICAH | F | | | - | 0701850102 | Bay |
| 8 | | · F | Kilambaik | REASONIT | - | OZUHSPH | |
| 9 | BURA Mastium MUSAKUI SBYING | F | hilam RDM | PERSPAT | - | | m.V |
| 10 | | F | KILAMBAIRO | and the second second | - | 5773078679 | MBLMBUT. |
| 11 | | F | KILAMBAIR | | - | - | Run |
| 12 | | Ŧ | Kilambairo | | + | 0783956518 | |

| | SUPPLY SY | STEMT | N BUHWEJU DIST SCHEME IN | KASESEDISTRIC | | | INTER OF WAIES AND ENVIRONMENT REPUBLIC OF DEANDA |
|--------------------|--------------------|-------|-----------------------------|--|--|-------------|--|
| | RECORD OF TTENDACE | | | | | | |
| | MEETING REFERENCE: | | | The second se | A CONTRACTOR OF A CONTRACTOR O | | |
| | VENUE: MUNKUNY | N S | UB-COUNTY | 1 | DAT | E: 13 Nov : | 2022 |
| | P . | | | | | | 6 |
| And a state of the | * NAME | SEX | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| | KISEMBO IULIET | F | NKUNYU II | TEACHER | masereliaposiano 89 @ grail.com | 0775173696 | Juliot |
| | THUNGU SAMALI | F | NEUNYUI | A STATE OF THE OWNER WATCH AND A STATE OF THE OWNER OWNE | | 077872806 | LI STORE |
| | KASMIJA ABEL | M | KACUNBIR | and an an an an an and a second second | | 07899355 | 10 |
| | BUIRMBALE SELEBI | M | KACUNBIRI | | B.4 - | | Boambal |
| | MUHONKYA ROXIAN | 17 | NKHNYH I | -1-1 | - | | R"MWHONING |
| | BIRURUTA BOAM | m | LANGAMADADA | PEASUNT | - | 0786405128 | 4.1 1 |
| | BWAMBALE KORONERI | m | KANYAMPARA T.C | Manufacture and the second | _ | | Bit |
| | KULZ LHUHABO SALVA | m | KANYAMPARA T.C | PEASANT | - | 0777308845 | the |
| | MASEREKA DAWUDI | m | NKUNYU I | PEASANT | | 0784437433 | KA |
| | RWEFUMA AMIS | m | KANYAMPARA | I.C. PEASANT | - | 0774258969 | PHEFUMA |
| - | SENGENHA TONSA | m | KASITHU | PEASANT | _ | 5771636561 | The serve |
| | NGASU NELSON | m | NKunyuii | PEASANT | - | 0760104439 | ATTAL |





RECORD OF ATTENDACE

VENUE: MUNCUNYU Sub-county DATE: 13/0/00 /2022

| # | NAME | SEX (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|----|------------------|--------------|------------|--|-------|------------|-----------|
| 1 | Kisembo lieen | F | Kimango | Farmer | - | _ | K.1. |
| 2 | Kabugho Irech. | | NKunyin | | - | - | K.1 - |
| 3 | Masereka Kes | Contract of | NKunyu | Later and the second se | - | - | _ |
| 4 | Tiber=ganwa Mary | | NKunyu | tour . | - | 0788220 | 426TM |
| 5 | Basaliza Asuman | 1 | NKUDYE | | - | 0782325209 | B-A |
| 6 | Kiiza Manuelina | | NKUNUT | - | - | 204 | K-M |
| 7 | Bira Mary | | Kanipmping | | - | 0788653839 | Bm |
| 8 | Kabugho Beatrale | 1000 | Kanyampara | 0.000 | - | - | K.B |
| 9 | MUHINDO MAGRET | F | KITSUTSUT | | ~ | - | M·M |
| 10 | MASSING Indi | F | TUSTUSTUS | farmer | - | - | M·L |
| 11 | lane mailluru | F | KITSUTOUI | farmer | -1 | - | J.M. |
| 12 | BUSINGE GONALD | M | LITSUTSUT | | - | 075466209 | B.10 |







| MEETING REFERENCE: | st. Consultations | |
|--------------------|-------------------|------------------|
| | b County | DATE: 13 1012022 |

and the "

| 4 | NAME | OSL (M/F) | VILLAGE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
|-----|---------------------------------|-----------|-------------|-------------|----------|--------------|-------------------|
| 1 | BWAMBALE JOSEPHAT | m | Kanyampara | T.c Peasont | - | 0773524695 | B. |
| 2 | MASERELA RABCON | m | Kitsuts J I | peasant | | 0776964594 | Afrabe |
| 3 | BITEKERA ZEFANASI | m | Witsolev I | peasant | - | 0777700566. | Bej |
| 4 | | M | KEMANGO | TEACHER | 7 | 0773980656 | Mangel |
| 5 - | MAKUPE DANIEL MASERE/KA PAUL | m | NUGROMAN | | | 6777294871 | the |
| | MASERCHA SCRENCY | in M | 5yunyun | Peaser | | 07750278 | 26 500 |
| 7 | STAKWIRA TOM | m | Kanyamp | raigeason | 6 | 07750210 | - Maria |
| 8 | BUNOKA EDSON | D M | NgunyuII | | Ch. | | find. |
| 9 | Molt No Etamedan | m | Nounyott | Frenchar | - JRENNA | 0781218219 | |
| 10 | Bunnsore faid | m | 12 ITSUTENT | Personato | - | 075 025 9483 | The second second |
| 11 | MARKUMANO Mohe Son | m | KITAUTGUI | Persont | | 57222 96864 | MAN |
| 12 | BASIGHNIBYA | | KITUTUI | | - | 07785418 | 0 |
| L | 151 SICHINIA 74 | | 1 | 1-10-10-0 | 9 | | (Eggs) |

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RECORD OF ATTENDACE

MEETING REFERENCE:

VENUE;___

DATE:

| # | QIAME | SEX (M/F) | VILLAGE | DESIGNAON | EMAIL | CONTACT | SIGNATURE |
|----|-----------------------|--------------|------------------------|-------------|-------|-------------|------------------|
| | Kunihira Jackline | F | Kasunau | PEASHNT | - | | Kuninica Jackh |
| S | NABUTONO SUZAD | F | Kasungu ^S I | PLEMANET | | 077859791 | 10 |
| 3 | MIBAMBU JOSITINA MBAB | nzi F | KAN YAMPARA | I PERSANE | _ | 078958242 | 2 MEANTEN JOSTIN |
| 1 | KANUGE GETRIAA | F | NXUNYUTT | PEASANT | | 078266084 | 2 |
| 5 | BY MOUTHARGA 2 AWLON | EM | NYLUNYUI | PLEASANCE | - | 07742764 | |
| 3 | BILZA GOZETI | | NUNYVI | PLEYASANI | | | RHI |
| 7 | MARKA YOSINTA | F | KATHARGINA | PEASANT | | 07860789 | 79 241 |
| 8 | TTHUNGU ELLEN | F | 12 ANYAMPALE | TIC POASANT | | | IL ELLEN |
| 9 | MUGISVA ENOS | M | NEUMUI | PEASANT | | 077602350 | |
| 10 | | ATINZ A | NEWMUI | TRACHAR | | 07714984315 | e fa |
| 11 | BONEBULA WILSON | | KANYAMPARA | PEASANT | | 07599706 | 7 6.0 |
| 12 | ITHUNGU LAILA | Ŧ | KAMUEHOBE | I DEASANT | | 075681378 | Laure |

| | B cardina a ch | Arth I | SCHEME IN | KASESEDISTRICT | | ATY FLOW | 您 |
|---------|----------------------|--------|--------------|----------------|-------|-------------|---|
| | Mar - | | | | | | PT CF WATER AND ENVIRONMENT REPUBLIC OF USANSA |
| | RECORD OF ATTENDACE | | | | | | |
| | MEETING REFERENCE: | _ | | | | | |
| | VENUE: | | | | DA | TE: | |
| a state | | SEX | | | | | |
| SE . | NAME | (M/F) | VILLABE | DESIGNATION | EMAIL | CONTACT | SIGNATURE |
| _ | NOTAN ABOERIC | m | NKUNYUT | PEASANT | | 077651472 | - 48 |
| 10 | VICENTMASEREW | tm. | NKuryv II | DEDSMIT | | 0187988645 | a |
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| | BALUKU PETER | M | NKUMUTI | perant | | | RTH |
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| 8 | Muhindo Brian | m | ILYNOW, TALE A | Farmor | | 07546209 | BA |
| 9 | BUSINGE ROWALD | M | KANTAMPARAT | | | 07886854.44 | Matet |
| 10 | MATETE GEORGE | m | NKUNYU I | | | · 077 11122012 | - Caller |
| 11 | BALUKU | | NKUNYUR | PEASONT | | 0779965990 | Carrier and |
| 12 | RUNIHIRA FELEZIA | E | KANYAMBARAT | | | 0786792180 | 012 |

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| BURA BEATRACE | F | KACUMBIRD | PESANT | | - | Bm |
| KABUGHO AGNESS | F | GUNGU II | FARMER | - | 076054225 | BHI |
| DIRA SAFINA | F | KANVAMPALA | FARMER | | 0776571451 | BIS |
| KABUGHO DIPORA | E- | KEMANGO | PESANT | | | Kd |
| MAZIGA JOHN | m | NKUNYUI | PEASANT | | 0778710134 | |
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CONSULTANCY SERVICES FOR ESIA AND RAP FOR BITSYA PIPED WATER SUPPLY SYSTEM IN BUHWEJU DISTRICT AND NYAMUGASANI GRAVITY FLOW SCHEME IN KASESEDISTRICT MAISTRY OF WATER AND ENVIRONME PEPUNIC OF DISANDA RECORD OF ATTENDACE MEETING REFERENCE: VENUE: DATE: SEX (M/F) NAME VILLAGE DESIGNATION EMAIL CONTACT SIGNATUR 1 KIALIBARA CARUS VACUNGIRO Witty M FAMER 073981902 2 Alimoto MUHINDO PRASANT 0788220449 ZEAHANUS M NKUNYUI 3 PEASANT DANETH KITSUTSUT 078894685 MASERERA marchie m 4 ERY BJAMARWAKIHUKAAM NKUNYUT 178914554 8 Peasant 5 BYAMUKAMA YUSOR KANYAMPITAN TIC 0777294453 Altima and M PEASANET MASERENA YOSOFU 6 KITSUTSUL PEASANT 0778083928 Short-M 7 Masercka NKUNYU II DEASANT Gaimon M Saimon 0788234310 8 0781650469 theme F KACUNGIRD DEASANI abugho Annel 9 peasant. Felezia Vandambara 10 0774419564 32. BALUKU KANYAMPARA RUSINESI CHARLES m 11 0774316226 pt ATASENDA DAHAT DENSIGNA Will 12 OTT901513 HRISTOPHER LACUNERRO basant UDABA



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| 1 | KABUTHONDWERE L. | M | KATSUNGIRO | PERSANT | - | 773-416080 | the |
| 2 | TIBAN BAKUZARINA J. | M | KAN-IAMPARA | PEASANT | - | 0776-26859 | T Sason |
| 3 | BASWAHA KABUTHONDU | DE M | KATSUNIAIRO | PEASANT | - | | BAJISTHA |
| 4 | KISUMU YOSAMU | M | KANSTAMPARA | I PEASANT | T | | Kisumuy |
| 5 | KANJA MATEDIO | DA. | KARMANIANIPARI | T. PEASANT | - | 1760-1685 | S MINTEN |
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| 8 | THEMBO WILLON KINE | | | PEASHNT | 1 | 0777295470 | |
| 9 | MUHARABY YOSOFU | m | KANYAMPHART | C PEASANT | - | 07733246 | 1 YOSOFU |
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| 3 | MABEBE NO204HERA | 30 | KEMANZO | | # | 077455710 | 6. MADELLE |
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| 5 | WATHA UZIA | M | KAN MAMPINA | | | 0775923205 | WATHA |
| 6 | MUHINDO MOSES | M | KANYAMPARA | £ | | 5782 577188 | |
| 7 | Bwambale Josia | m | KARHANBANA | T | | 078510712J | Pusanibale |
| 8 | MARERENA ISMAZ | M | KANYAM PATLAJ | | | 6775971909 | 100001- |
| 9 | MBABULIKIRA PAUL | M | KEM ANGO | | | 0771901433 | PAULO 2 Million |
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Annexe 4. Water Quality Analysis Results

| | 0.0 | <u>U</u> S | STER & SEWERAGE |
|--|---|---|--|
| NATIONAL | CENT | ID SEWERAGE CORPOR. RAL LABORATORY - BUGO | Les Tel+2556313315111/715 |
| CLIENT: SMEC International I | Pty Limited | FICATE OF ANALYSIS | DATE ANAL SERVIC |
| Address: Naguru - Kampala, U Sampled by: Client Staff | | Invoice N | No: NWSC/WQ/QF/21.2A o: 131/INV/2022/853 |
| Date Sample Received: 09/08/202 Parameters | 2 Units | Date of R Sampled: 29/07/2022 River Nyamuruseyi sample. Mwanza TC below community cross point | eport: 24/08/2022 National Standards for Untreated potable wate |
| Sample number | | 2155/2022/C/B | |
| Alkalinity: Total | mg/L | 33.2 | 500 |
| Bact: Escherichia coli | CFU/100mL | -Tat 2 | 0 |
| Bact: Faecal Coliforms | CFU/100mL | 27 | 0 |
| Bact: Salmonella | CFU/100mL | 24 | 0 |
| Bi-Carbonate | mg/L | 40.504 | 500 |
| Calcium: Ca ^{2*} | ing/L | 5.12 | 150 |
| Chloride | mg/L | 511 | 250 |
| Colour (apparent) | TCU | 73 | 50 |
| Electrical Conductivity (EC) | uS/cm | 89.3 | 2500 |
| Fat, Oil & Grease (FOG) | mg L | 0.0 | Not Specified |
| Hardness: Total | mg/L | 39.2 | 600 |
| Iron:Total | mg/L | 0.185 | 0,300 |
| Magnesium:Mg ^{2*} | mg/L | 6.34 | 100 |
| Manganese | mg/L mg/L VED | 0.088 | 0.1 |
| Nitrate-N | mg/L | 0.21 | 45 |
| pH(Physical-Chemical) | - mg/L | 7.482 | 5.5-9.5 |
| Sulphate | mg/L | 0.0 | 400 |
| Total Dissolved Solids(TDS) | mg/L | 57.152 | 1500 |
| Total Suspended Solids(TSS) | mg/L | 10 | 0 |
| Turbidity | NTU | 8.48 | 25 |
| Remarks Chemistry: The water sample showed c | complying physic the National Str complying bacte | pehemical characteristics with exc indards for Untreated Potable wat | eption of Colour (apparent) er. |
| | | ratory Services: | ton |
| | | er Quality Management Departme- um or company amferiaking to conduct busine | |

NATIONAL WATER AND SEWERAGE CORPORATION CENTRAL LABORATORY - BUGOLO

P.O BOX 7053 KAMPALA Email: waterquality@mwac.co.

CERTIFICATE OF ANALYSIS

CLIENT: SMEC International Pty Limited

Address: Naguru - Kampala, Uganda Gasper Oda street

Document No: NWSC/WQ/QF/21.2A

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Tel:+2558313315111 / 71

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email services

Sampled by: Client Staff

Invoice No: 131/INV/2022/853

Date Sample Received: 09/08/2022

Date of Report: 24/08/2022

| Parameters | Units | Sampled: 29/07/2022 River Nyamagasani, after Mwanza TC | National Standards for Untreated potable water |
|------------------------------|----------------|--|--|
| Sample number | and the second | 2154/2022/C/B | A subscript and a subscript of the |
| Alkalinity: Total | mg/L | 21.2 | 500 |
| Bact: Escherichia coli | CFU/100mL | 0 | 0 |
| Bact: Faecal Coliforms | CFU/100mL | 0 | 0 |
| Bact: Salmonella | CFU/100mL | 2 | 0 |
| Bi-Carbonate | mg/L | 25.864 | 500 |
| Calcium: Calt | mg/L | 5.6 | 150 |
| Chloride | mg/L / | 1000 8 P | 250 |
| Colour (apparent) | TCU | 65 | 50 |
| Electrical Conductivity (EC) | uS/cm | 58.5 | 2500 |
| Fat, Oil & Grease (FOG) | mg/Is | 1.09 | Not Specified |
| Fluoride | mg/L | 0.0 | 1.5 |
| Hardness: Total | mg/L | 54.8 | 600 |
| Iron:Total | mg/L | 0.025 | 0.300 |
| Magnesium:Mg ²⁺ | mg/L | .9.79 | 100 |
| Manganese | mg/l. | 0.048 | 0.1 |
| Nitrate-N | mg/L | 0.15 | 45 |
| pH(Physical-Chemical) | | 7.630 | 5.5-9.5 |
| Sulphate | mg/L | 0.0 | 400 |
| Total Dissolved Solids(TDS) | mg/L | 37.44 | 1500 |
| Total Suspended Solids(TSS) | mg/L | 7 | 0 |
| Turbidity | NTU | 0.87 | 25 |

Remarks

Chemistry: The water sample showed complying physiochemical characteristics with exception of Colour (apparent) and TSS as provided for by the National Standards for Untreated Potable water. Biology: The water sample showed complying bacteriological characteristics with exception of Salmonella asprovided for by the National Standards for Untreated Potable water.

AUTHORISED BY:

Manager Central Laboratory Services: .

APPROVED BY:

Senior Manager - Water Quality Management Department: WSC certificate of a 10 00 2V11 *** This report reflects results of the sample as received at the laboratory premises

Telephone +256 (0) 414 250 464 (Gen) +256 (0) 414 250 474 Email: dgal@mia.go.ug Website: www.mia.go.ug

In any Correspondence on this subject please quote NGE398/2022

November 22, 2022

THE REPUBLIC OF UGANDA

REPORT OF ANALYSIS

Description of Sample Two water samples labeled 'Nyamurasegi' (NYSEGI) and 'Nyamusagani' (NYGANI) for Environment and Social Impact Assessment (ESIA) and Water Source Protection Plan (WSSP) - Bright Technical Services Ltd, for the Nyamusagani Piped Water Supply System in

Kasese District were received on November 11, 2022 for conformance to US 12:2014, Specifications for Potable (Natural Potable) Water

Methods of Analysis

pH was determined using a pH Meter. Metal ions were quantified from an acidified sample, at respective wavelengths, using Atomic Absorption Spectrometry technique, Shimadzu 6200. A five-point calibration curve was used to get the concentration of each metal ion. Nitrates, phosphates, sulphates, and ammonia were determined by UV-VIZ Spectrometry technique, Shimadzu, 1601 at respective absorption wavelengths. All determinations were done in duplicate.

Results of Analysis

The mean analysis values are as below;

| Parameters | Ret | alts | Limits/Authority |
|--|--------|--------|------------------|
| | NYSEGI | NYGANI | |
| pH | 8.2 | 78 | 5.5 - 9.5 |
| Color (TCU) | 14 | 8 | 50 Max |
| Conductivity (µs/cm) | 283 | 267 | 2500 Max |
| Total Dissolved Solids, (mg/l) | 1287 | 1198 | 1500 Max |
| Total Suspended Solids, (mg/L) | 54 | 23 | Not Detectable |
| Total Hardness, CaCO ₃ (mg/L) | 82 | 56 | 600 Max |
| Turbidity, NTU (mg/L) | 32 | 18 | 25 Max |
| Arsenic (mg/L) | 0.01 | 0.01 | 0.01 Max |
| Calcium (mg/L) | 47.8 | 33.6 | 150 Max |
| Copper (mg/L) | 2.2 | 1.8 | 1.0 Max |
| Iron, Total (mg/L) | 5.8 | 4.7 | 0.3 Max |
| Lead (mg/L) | 1.2 | 0.01 | 0.01 Max |
| Magnesium (mg/L) | 38.5 | 44.7 | 100 Max |
| Mercury (mg/l) | 0.001 | 0.001 | 0.001 Max |
| Sodium (mg/L) | 32.2 | 28.7 | 200 Max |
| Zinc (mg/L) | 2.2 | 1.8 | 5.0 Max |
| Ammonia (NH3) | 1.2 | 1.2 | 0.5 Max |
| Chlorides (mg/L) | 298 | 247 | 250 Max |
| Fluoride (mg/L) | 1.2 | 1.2 | 1.5 Max |
| Nitrates (mg/L) | 12.5 | 9.8 | 45 Max |
| Phosphates, Total (mg/L) | 4.8 | 3.2 | 2.2 Max |
| Sulphates (mg/L) | 267 | 246 | 400 Max |
| Fotal coliforms (cfu/100ml) | 12 | 8 | Absent |
| E. coli (cfu/100ml) | 4 | 1 | Absent |

Detection limit; Atomic Absorption Technique, Shimadzu, 6300 Analyzed parameters in bold do not requirements of the standard Results relate to sample and are reported on as received basis

A

Justus Mike Ochom

Senior Government Analyst Go Scientific for a Safe and Just Society?

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MINISTRY OF INTERNAL AFFAIRS DIRECTORATE OF GOVERNMENT ANALYTICAL LABORATORY Plot No. 2 Lourdel Road Wandegeya, P.O.BOX 2174 Kampala - Uganda

Annexe 5. Chance Finds Procedure on Physical **Cultural Resources Management**

Physical Cultural Resources Policy (PCRs) would be triggered because of the The excavation/construction works that may encounter PCRs. To meet the requirements of this policy, a Chance Finds Procedure has been developed to indicate a real risk of causing undesirable adverse environmental and social effects on the physical and intangible cultural resources, and that more substantial planning may be required to adequately avoid, mitigate or manage potential effects. Chance find procedures will be used as follows:

- i. Stop the construction activities in the area of the chance find;
- ii. Delineate the discovered site or area:
- iii. Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Directorate of Museums and Monuments (DMM) take over;
- Notify the project/ supervisory Engineer who in turn will notify the responsible local authorities iv. and the Directorate of Museums and Monuments under the Ministry of Tourism, Wildlife and Antiguities (within 24 hours or less);
- The Directorate of Museums and Monuments would be in charge of protecting and preserving v. the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the Directorate of Museums and Monuments (within 24 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the Directorate of Museums and 403 vi. Monuments. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
- vii. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the DMM;
- Construction work could resume only after permission is given from the responsible local viii. authorities and the Directorate of Museums and Monuments concerning safeguard of the heritage;
- These procedures must be referred to as standard provisions in construction contracts, when ix. applicable. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered are observed;
- Construction work will resume only after authorization is given by the responsible local х. authorities and the National Museum concerning the safeguard of the heritage.
- Relevant findings will be recorded in MWE Implementation Supervision Reports (ISRs), and xi. Implementation Completion Reports (ICRs) will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate.

Annexe 6. Outline of the Spill Management Plan

The plan should be developed in order to specify the procedures of handling spills during the construction activities. The plan will ensure enhancement of the ability to handle spills, prevent the impacts of the spills and reduce loss resulting from spills, protect the safety of lives of personnel working in the project area and maintain social stability. The plan will include detailed spill management information for all areas of the Project i. Including Project site, storage areas, site offices and camps where required. The Spills Management plan should be a working document used in training and practice. The Contractor must submit the Spill Management Plan as part of their safety management plan to MWE/Supervising consultant for review and approval.

The Spill Management plan should be prepared to establish a Spill Management system based on an environmental risk assessment undertaken in accordance with the National Environment (Waste Management) regulation of 2020, part XII- Section 98(1), the National Environment (Environmental and Social Assessment) Regulations, 2020, the oil spill regulations made under the Act, the Occupational Safety and Health act of 2006 Part XII- Section 86 (a, b) which calls for adequate and readily accessible means of drenching with water for any employee who is splashed with corrosive liquids and sufficient means of flashing or irrigating the eyes. A lead agency shall, in consultation with the Authority, provide for Spill Management systems, contingency plans and other plans for minor incidents of acute pollution that may occur or cause damage within the jurisdiction of the lead agency in accordance with the National Environment Act NO.5 of 2019, Part VII Section 92 (1). The Plan must include, though limited to the following Objectives:

Objectives

- To ensure sufficient measures of controlling and preventing any spill along the construction areas
- To train all the workers in safety drills and spills management for quick and efficient response to scenarios that can lead to pollution or damage to the environment

Mitigation measures

- The contractor should draw prevention plans for all areas of work in the Spill Management Plan. Prevention plans must include training requirements, procedures and prevention equipment locations. Prevention equipment must meet the requirements of National Safety and Health Act and Regulations and be on site and readily available.
- Identify existing and potential dangers to spills at site and the measures that will be taken to reduce, eliminate or control those dangers, including procedures to be followed in case of spill.
- Identify internal and external resources that may be required to respond to the spill at site.
- Develop a Spill Management Plan for all physical areas of its performance of the work at site as well as its site office and storage areas.
- Test Spill Management Plans prior to commencing the work and at a minimum annually throughout the performance of the work.
- All contractor employees on the project must be trained and aware of their responsibilities in the prevention of spill and in the event of a spill.

Roles and responsibilities

- The contractor must at all times take all precautions appropriate to maintain the health and safety of all the sites.
- The contractor is responsible for the adequacy, stability and safety of all site operations and construction methods and must comply with workplace safety and health laws in accordance with the OSH Act 2006.

- Before commencing the work, the contractor must identify their dedicated on site safety supervisor, who must attend a pre-job meeting at the MWE's office to review safety measures for the work and be approved by the Supervising consultant/ safety representative.
- The safety supervisor of the consultant must have no other duties assigned. The dedicated on site safety supervisor will be responsible for, but not limited to, the identification and control of potential safety hazards including spills at the work sites.
- All contractor employees on the project must be trained and aware of their responsibilities in preventing spills and in the event of a spill.

The Health, Safety and Environment Coordinator is responsible for the following roles;

- Responsible for providing risk, health, safety and environmental information.
- Responsible for compliance with legislation and obtaining authority from the Supervising Consultant to inform and liaise with National Government and Regulatory authorities.
- Responsible for providing OHSE advice & support and information to the contractor and the Incident Response Team (IRT) at the spill site.
- Responsible for advising and maintaining the spill management responses in line with the Contractor emergency response procedures.

Means of verification

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- Well-developed site spill management measures to protect the public from the hazards present on the project which contain hazards to the public, post the required signage to inform the public of the hazards present, maintain good housekeeping as required.
- Records of spill accidences in and around the project sites
- Presence of weekly health and safety performance report including safety information and statistics on spill management
- A write up of risks facing contractors' personnel and their responses.
- A list of dates for annual testing of Spill Management plans
- Records of safety drills and Spill Management trainings undertaken.

Prevention of Releases to the Environment during Construction and Operation Procedures to prevent releases to the environment

Contractors will exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated by environmental law. Contractors will maintain spill cleanup equipment and materials at the work site. In the event of a spill, contractors will take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. This plan is to address any leaks or spills of fuels, hazardous substances, solvents or lubricants. Contractors will conduct fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. Spill kit will be provided on site and train staff how to use the spill kit. They will be required to surround all temporary fuel oil or petroleum storage tanks with a temporary berm or containment of sufficient size and strength to contain the contents of the tanks, plus 10 percent freeboard for precipitation. The berm will be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs.

Aquifer Protection and Water Resources

Avoid refueling within 200 feet of wetlands and watercourses. Refueling will not be allowed within the designated the aquifer protection areas. Spill response equipment will be available on-site at all times along with personnel trained in the proper use of such equipment. A person or persons will be designated by the Contractor(s) for emergency response coordination on a 24/7 basis. A note should be added to the construction documents stating the sensitivity of the area.

Personnel Training

All personnel, contractor, subcontractor personnel, operators, technicians, and temporary employees, working at the project site are briefed in hazardous material management and spill prevention as part of their new hire Environmental, Safety and Health orientation (ES&H). In addition, Supervisor Environmental Awareness Training will be provided for non-manual personnel, supervisors, foremen, and subcontractor supervision, as needed. Those personnel responsible for actively responding to and cleaning up small and incidental spills and handling wastes shall be trained in the proper use of response materials and equipment and the use of personal protective equipment for potential hazards. Supervisors and foreman will be responsible for supervising training of new employees and after to ensure the best practices are being carried out to prevent spill.

Emergency Procedures

Contractors will respond to any spills or release that occur and will provide spill response. The Project Field Superintendent shall be notified when a release occurs, no matter the quantity or responsible party. A typical Project spill kit material list is provided below Oily debris and or contaminated soil will be properly disposed of. Additionally, container storage will be set up on an as-needed basis for oily rag disposal and clean up materials within the construction lay down yard/staging area.

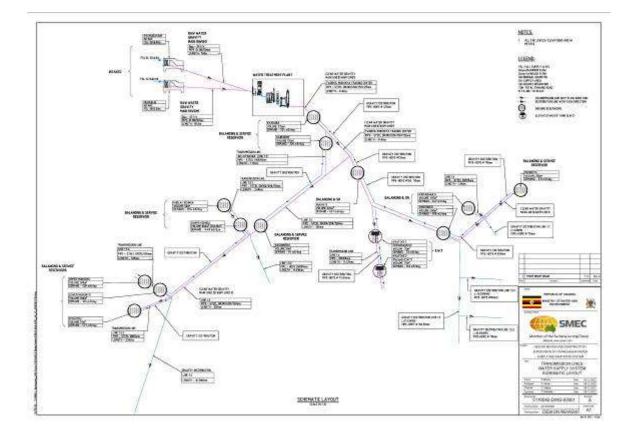
Internal Reporting

A designated spill coordinator shall be notified of all spills and releases, regardless of the volume of the release. After a release has occurred, the spill coordinator will determine if additional reporting to a regulatory agency or the contractor's legal departments is required. The Construction Project Manager will notify Owner of any major spills or releases. In addition to these requirements, all environmental incidents and spills less than the reportable quantities will be recorded in a Project's Incidental Spill Log.

Spill Kits

Spill kits will be used throughout the project site to support the first response and subsequent cleanup of spills and releases that occur on the project. The following sections provide recommendations for typical spill kits.

Annexe 7. General Layout and Layouts of the Transmission and Distribution System



Annexe 8. Land Ownership Documents

Annexe 9. VALUATION CERTIFCATE OF THE INVESTMENT COST

Annexe 10. PROOF OF PAYMENT OF 30% OF NEMA REVIEW FEES

Annexe 11. RAP Executive Summary

E1. Introduction

The Integrated Water Management and Development Project (IWMDP-P163782) is a Seven (7) year Government of Uganda (GoU) Project estimated to cost US\$313 million.

The IWMDP will support the Government of Uganda through the Ministry of Water and Environment (MWE) and the National Water and Sewerage Corporation (NWSC) in achieving the United Nation's Sustainable Development Goals (SDGs), including SDG #6, 'Ensure availability and sustainable management of water and sanitation for all.' It is aligned to Vision 2040, which aims at transforming Uganda into a modern and prosperous country. In addition, it will support the fulfilment of the Third National Development Plan (NDP III) goals and priority actions.

The IWMDP will be implemented by the MWE and NWSC – with the oversight of the Water and Environment Sector Working Group and relevant governing bodies (e.g., NWSC Board of Directors) and supported by existing decentralized regional structures and entities (including Local Governments, Water Management Zones, Umbrella Operators, NWSC town offices, etc.) and their partners to deliver desired results.

The IWMDP under the MWE has been under implementation since December 2019, as a successor to the Water Management and Development Project (WMDP-P123204) of 2012-2018 which is consistent with the World Bank Group (WBG) Country Partnership Framework (CPF) FY16-17.

The IWMDP builds and scales up the achievements of the WMDP, paying special attention to the vulnerable Northern and Mid- Western regions, refugee hosting communities, and areas with low Water Supply and Sanitation (WSS) coverage by creating an enabling analytical, infrastructural and institutional platform to improve water resource management, productivity and service delivery and to reduce vulnerability to water shocks. The IWMDP will consolidate the progress made in implementation of Integrated Water Resources Management (IWRM) over the years by MWE.

The design of the IWMDP was informed by lessons learned from the implementation of World Bank Funded Lake Victoria Environmental Management Project II (LVEMP II) and the Water Management and Development Project (WMDP). These projects financed major water-related investments in priority urban areas and various measures to improve IWRM planning and development. The World Bank has also supported rural sector through the Uganda Water Small Towns and Rural Growth Areas Project, which provided technical assistance (TA) and capacity building for the development of the water sector.

The IWMDP Development Objective is to improve access to water supply and sanitation services, strengthen capacity for integrated water resources management and enhance the operational performance of selected service providers. The IWMDP will also contribute to the achievement of National Development Plan III objectives, Vision 2040 and Sustainable Development Goals.

The IWMDP will achieve this PDO through focusing on three strategic areas: (i) strengthening WSS infrastructure and catchment management measures in targeted areas; (ii) supporting water-related institutions (NWSC, MWE, local government, and service providers) in their efforts to establish and improve operational efficiency and service quality in small towns and rural areas; and (iii) strengthening national and regional capacity to improve IWRM.

The IWMDP is comprised of four (4) components, namely: (1) WSS in Small Towns and RGCs and Support to Districts Hosting Refugees; (2) WSS in Large Towns and Support to a District Hosting Refugees; (3) Water Resources Management and; (4) Project Implementation and Sector Support.

The International Development Association (IDA) will provide Project financing in an amount equivalent to US\$280 million, of which US\$81.9 million will be used to finance the refugee and host community subcomponent. The US\$81.9 million will be financed by the IDA 18 sub-window for refugee and host communities (US\$25 million credit and US\$25 million grant) and by national IDA (US\$31.9 million). The GoU will be responsible for counterpart financing of US\$8 million to cover a portion of investment and operating costs, the acquisition of land, and any compensation due to people affected by the Project.

The Nyamugasani Water Supply and Sanitation Project falls under Subcomponent 1.1: Support to Small Towns and Rural Growth Centres. Subcomponent 1.1 includes carrying out of activities to improve WSS in selected Small Towns (STs) and Rural Growth Centres (RGCs) in the Recipient's territory, consisting of: (i) constructing and rehabilitating WSS facilities, as well as providing associated services, including engineering, environmental and social studies and supervision of construction activities; (ii) preparing and implementing sanitation plans in selected Small Towns; (iii) strengthening the capacity of the Umbrella Water Authorities in the areas of operational and financial management, including the establishment of a remote monitoring system for rural water systems; and (iv) carrying out of environmental and social management activities to protect water sources and sensitize communities.

Subcomponent 1.1 includes five subprojects benefitting 16 small towns which include but are not limited to Lwentulege and Kasese RGCs in Rakai District, Bugwara and Kabamba RGCs in Kagadi District, Kikoora and Mwitanzige RGCs in Kakumiro District. This subcomponent will also support gravity fed or solar pumped piped water supply systems comprising of water source (spring, surface or borehole), storage tank and pipe distribution network feeding multifamily taps and/or household connections. Two specific gravity flow schemes have been identified to support rural communities in the districts of Kasese (Nyamugasani) and Buhweju (Bitsya). On sanitation, the subcomponent will finance on-site sanitation facilities, such as pour-flush toilets with a range of superstructures and septic tanks, targeting public spaces, schools and institutions.

Subcomponent 1.1 is expected to be executed by the MWE, Directorate of Water Development (DWD), Rural with its regional offices in close coordination with key stakeholders (local authorities and community organizations). With regards to service provision, currently there are three proposed arrangements (i) NWSC, (ii) Umbrella Organizations (UOs) and (iii) private operators contracted out through local governments. Based on existing sectoral trends, it is likely that for the most part, O&M of the systems will be transferred to NWSC; however, two or three small towns might be managed by UOs or private operators.

The MWE commissioned Bright Technical Services (BTS) to carry out the RAP to facilitate the acquisition of land for installation of permanent civil and electromechanical structures for the Nyamugasani Water Supply and Sanitation Project.

This document presents the Resettlement Action Plan (RAP) for the Nyamugasani Water Supply and Sanitation Project. According to best practice, a project that will require land acquisition must prepare a RAP to guide these activities. This RAP shall be a living document throughout its implementation.

The proposed supply area is 1,723km2 and includes 8 sub counties and 3 Town councils namely Kisinga, Kyarumba, Muhokya, Kitabu, Lake Katwe, Kyondo, Nyakatonzi, and Mukunyu sub-counties and Kyarumba, Kinyamaseke, Kisinga Town Councils among others in Kasese district. The study area has an estimated total population of 191,123 inhabitants. The existing institutions include 114 primary

schools, 24 secondary schools, 18 Health Centres, 1 hospital, and 7 Sub County headquarters, among others.

E2. Institutional, Legal, and Policy Framework

Nyamugasani Water Supply and Sanitation Project is guided by both the applicable Ugandan laws and regulations related to land acquisition and involuntary resettlement as well as the applicable international standards.

Key Ugandan legislation and policies that will govern the Project include:

- The Constitution of the Republic of Uganda
- Water Act Cap, 152
- Land Acquisition Act (1965)
- The Land Act, Cap 227
- The Land Regulations, 2004
- The Roads Act, 2019
- The Access Roads Act, CAP 350
- Local Government Act (1997)

The key International RAP Standards and Guidelines (Applicable Standards) that guide this RAP and its implementation are:

- The World Bank's safeguard policy on involuntary resettlement, OP 4.12
- United Nations (UN) Basic Principles and Guidelines on Development-based Evictions and Displacement
- Voluntary Guidelines on Responsible Governance of Tenure of Land, Forests, and Fisheries (VGGT)

Where national legislation falls short of meeting the conditions prescribed by the Applicable Standards the latter will apply. The gap-filling measures proposed by the Nyamugasani Water Supply and Sanitation Project are also detailed.

E3. Stakeholder Engagement

The overall goal of stakeholder engagement is to establish an ongoing, accessible, and constructive dialogue with PAPs and other interested individuals and organisations, so that – in accordance with International Best Practice – their views and concerns can be considered in project decisions.

Stakeholder engagement is an inclusive process that should be conducted throughout the project life cycle, where properly planned and guided information is relayed to specific stakeholders to help in smooth implementation of a given project. This helps to communicate the purpose and objective of a given project. If executed well, it helps to support the development of strong, constructive and responsive relationships that are important for successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process, and is an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts.

Nyamugasani Water Supply and Sanitation Project has conducted a series of community sensitisation meetings, Focus Group discussions (FGs) Key Informant Interviews (KIIs) with PAPs to ensure strong participation and a comprehensive understanding of the entitlement framework. Comprehensive participation of displaced PAPs has been achieved using a variety of methods including smaller meetings to enhance participation levels.

Consultations were carried out with PAPs in the project affected areas of the Nyamugasani Water Supply and Sanitation Project during preparation of this RAP between 13th October 2022 to November 18th 2022.

Identified Stakeholders

Project Affected Persons (PAPs) for consultation and disclosure are directly affected primary stakeholders with the most to lose or gain from the Project. Secondary stakeholders are government agencies at the National, district, Sub County/Town Council and local level. Tertiary stakeholders

include non-government organisations. In the project area, there is several agencies providing water to communities namely

- Umbrella water
- ✤ Karudec
- Fontes Foundation

All of which operates a piped water system developed for the community to mitigate the water demand challenge in the area. All these provide both public stand Taps and Yard / domestic connections. Unlike Karudec who offers the service at no charge, Umbrella water and Fontes foundation attach a cost to each jerrycan of water that one fetches or uses. By the time of the RAP study, Umbrella water was still charging a flat rate to its users.

Key feedback to Consider

- Always involve the area leadership especially at the district level in the project activities
- Opportunity for employment should be given to the local people first to minimise o causing an influx of people in the community
- The project is long overdue and there is need to speed up the process to ensure people access clean and safe water
- In some parishes there is no source of water at all. Thus, the need for the service is long overdue
- The absence of safe water has contributed highly to the high rates of school dropout in the district

Information Disclosure

Disclosure entails making information accessible to interested and affected parties. Communicating information in an understandable manner to the relevant and interested stakeholders is an important factor in the stakeholder engagement process. Specific measures will be undertaken to ensure that Project commitments and specifically, the compensation entitlement framework and grievance mechanism information is accessible to all relevant parties, including those with disabilities preventing them from reading the documentation. The steps taken to ensure accessibility include:

- Development of a non-technical summary RAP version in both English and relevant local languages such as Lukonjo, Rutooro and Rusongora.
- Oral communication in relevant local languages such as Lukonjo, Rutooro and Rusongora.
 via community meetings and household-level meetings.
- Supporting vulnerable or illiterate PAPs that require additional assistance to ensure comprehension of agreements and the sign-off process.

Information that has been or will be disclosed to stakeholders includes the following:

- The affected assets and interest in the affected assets were disclosed and signed off by PAPs during the cadastral and asset surveys
- Entitlement Cut-off Dates were disclosed to PAPs during one-on-one discussions as well as at community meetings
- The Entitlement Matrix will be disclosed through community meetings
- Expected Project impacts -- including loss of livelihood, economic displacement, migrant worker (construction worker) influx during the construction phase -- will be disclosed to stakeholders through community meetings as well as through district and Subcounty workshops targeting technical officials and elected leaders
- The RAP will be disclosed on MWE's website and will be disclosed to stakeholders through district and Subcounty workshops and village-level community meetings
- The compensation and resettlement packages -- including cash compensation, and resettlement assistance -- will be disclosed to individual PAPs and their spouses where relevant and their consent will be indicated via consent form sign-off

- Project strip maps will be disclosed to individual PAPs through community meetings
- The Livelihood Restoration Plan, including summarised matrices, will be disclosed to PAPs and local government administrative units through district and Subcounty community meetings and workshops
- Vacate dates will be disclosed to individual PAPs at the household level through the issuance of notices to vacate the permanently acquired land after compensation payment

Key stakeholder concerns were: whether structures be compensated for in case the pipe is affecting them; the payments for service lines connection and options for household connections; hiring local labour during project construction phase; continuing use of land; fear of not receiving any compensation and; delayed and unfair compensation.

Consultation and Disclosure Phases

Stakeholder engagement is an ongoing process. It involves two major phases:

- 1) **Phase I** covered the RAP preparation. It focused on the following:
 - Creating Project and RAP process awareness
 - Stakeholder mobilization to participate in RAP activities including cadastral survey, asset survey, socio-economic surveys, and vulnerability assessments
 - Management of grievances and concerns

2) Phase I included three major stages:

Stage 1: Engagement with district and Subcounty leaders during reconnaissance surveys and awareness creation

Stage 2: 38 meetings at Subcounty and community level with 1657 Affected Community Members (1138 Males & 519 Females). Engagement with PAPs for cadastral survey, asset survey, and socioeconomic surveys addressing issues of the rights of PAPs under law regarding land acquisition, fairness of the process, grievance mechanisms etc.

Stage 3: A combined total of 10 Focus Group (FG) discussions and Key Informant Interview (KII) for livelihood surveys and vulnerability assessments were conducted to find out development priorities and livelihood interventions.

During a KII, A headteacher intimated to the RAP team that children can wear the uniform without washing it for over two weeks due to the absence and or cost of water. Parents are torn between buying water and buying scholastic materials. Most of the parents being farmers who depend on seasonal harvests, meeting such demands is hard thus some prefer to allow their children engage in any available casual works that ca bring them some money to support the household.

Management of grievances and concerns was an integral part of all stages.

A consultative approach was used in the stakeholder engagement process. Consultation was a two-way process involving information sharing between the RAP Team and stakeholders. The local leaders -- especially the LC1s -- helped mobilise PAHs. Consultations commenced at 10 AM or 2 PM Ugandan Time to enable participation of all interested groups including women and children.

3) Phase II shall cover the RAP implementation. It will focus on land and property compensation packages, grievance management, livelihood restoration program implementation, and clearing the acquired infrastructure sites after the expiry of the 6 months' notice to vacate period.

In order to mitigate gender-based violence, specific, deliberate approaches have been embedded in the Disclosure to PAPs and Compensation Agreement Sign-offs (Section Error! Reference source not found.) specifically requiring spousal consents and joint sign-offs and a grievance mechanism thoroughly addressing gender-related grievances (Section Error! Reference source not found.).

Engagements in Phase II will be a continuation of the engagements conducted in Phase I. The activities will be tailored to specific stakeholders including PAPs, and local leaders

Planned Stakeholder Engagements During RAP Implementation

Stakeholder engagements will be continuous throughout RAP implementation phase. More than one topic, described in, **Error! Reference source not found. Error! Reference source not found.** are to be addressed within the planned engagements.

The RAP Implementation Consultant will be responsible for the overall execution of stakeholder engagement activities, and MWE is responsible for ensuring these engagements are carried out. The teams shall work with local government Technical Officials and elected leaders to ensure seamless

implementation of planned stakeholder engagement activities.

| RAP/ESIA Phase | Topic Of Consultation | Strategy Of Consultation | Locations | Target Stakeholders |
|---|---|--|---|---|
| Inception, Planning And Assessment Phase | Project Scope, Rap Methodology Including Grm | Dedicated Meetings And Presentations | District And Sub- County Hqs | District And Sub-County Political And Technical Staff; District Level CSOs |
| | | Community dialogues using standard talking points, Q&A sessions | At all project affected communities | Project affected community members/leaders and vulnerable social groups |
| | | FGDs | At selected sites in communities | Vulnerable social groups |
| | PAP household demographics and socioeconomics, development of livelihood | Community dialogues using standard talking points, Q&A sessions, feedback forms | At all project affected communities | Project affected community members/leaders and vulnerable social groups |
| | restoration plan; and CoD announcement | FGDs | At selected sites in communities | PAPs and vulnerable social groups |
| | | PAP Census | PAP households | All PAPs and household members |
| | | Key Informant interviews | District, Sub- county and CSO offices | CAO, RDC, DIRCO, DEV, DCDO, DAO, Police, DHO, CSO managers |
| | Entitlement Matrix, including livelihoods | Community dialogues | At all project affected communities | Project affected community members/leaders and vulnerable social groups |

Stakeholder Consultation Strategy

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|-------------------------|--|--|---|---|-----|
| | restoration, | FGDs | At selected sites in project affected communities | PAPs and vulnerable social groups | |
| | | PAP Census | PAP households | All PAPs and household members | |
| | Draft RAP (strip maps and PAP lists) Display | Distribution to District and other stakeholders | District and sub-counties in all affected sub-counties | District and Sub-county leaders and technical staff, General public and other interested parties | |
| Implementation Phase | Approved Rap And Entitlements Disclosure And | Reports Uploaded On Developer Websites | At MWE Info- Shops | General Public And Other Interested Parties | |
| | Disclosure And Display Of Valuation Names And Strip Maps | Summary Extracts published by MWE | Distribution to District and Sub- County Hqs | General public and other interested parties | |
| | | Display at public spaces in affected villages | All affected villages | PAPs, community leaders, District and Sub- County leaders, NGOs/CSOs | 419 |
| | Processing entitlement and compensations awards | Engaging one on one PAP for disclosure and signing; display of terms and conditions | AT all affected villages | PAPs, community leaders, District and Sub- County leaders | |
| | Sign and land expropriation | Engaging one on one PAP for disclosure and signing | AT all affected villages | PAPs, community leaders, District and Sub- County leaders | |

E4. Baseline Data Collection and Analysis

Socioeconomic surveys were conducted to define impacts and to provide a monitoring baseline following an initial desktop data review. Effective resettlement planning entails conducting a displaced persons census and an inventory of affected land and assets at the household, enterprise, and community levels.

The data was collected via a mixed-method approach incorporating both quantitative and qualitative assessments, as well as an assessment of available secondary resources. Quantitative surveys were conducted for all PAHs.

A total of 150 households were surveyed and identified by the RAP team as persons / institutions likely to be affected by the transmission line, distribution line, Reservoir and water source site. 22 PAPs of the 150 PAPs are unknown and people with multiple entries. A baseline survey was conducted on 55

PAPs which is 36.7% of the people affected. 98.2% of the survey being head of their households. The average size of the household of the surveyed population being 3.2 and a single household with the highest number being 14 people under the same roof. Perspectives of both genders were captured and represented where majority of the respondents were male at 89.1% and with female at 10.9%. Qualitative data was gathered to provide supporting details for the quantitative data collection surveys. Qualitative data collection was based on KIIs, FGs, and participatory methodologies including village transect walks.

Household socio-economic surveys was undertaken alongside the cadastral and asset surveys. The land and asset component measured and described fixed assets for each household including land holdings, land type, buildings, crops, and trees. This information was collected to inform compensation agreements and to assist in resettlement impact assessments.

A summary of the surveys completed is provided in the table below.

| Survey | Number of Surveys Completed | Timing |
|---------------------------------|-----------------------------------|--|
| Cadastral Survey | | 13th October 2022 to November 18th 2022. |
| Assets Survey | | 13th October 2022 to November 18th 2022. |
| Socio-Economic Household Survey | 900 | 13th October 2022 to November 18th 2022. |
| Focus Group (FG) Discussions: | | 13th October 2022 to November 18th 2022. |
| Key Informant Interviews (KIIs) | | 13th October 2022 to November 18th 2022. |

Completed Baseline Surveys

Survey & Household Demographics

A total of 55 households were surveyed with the vast majority (99%) of the survey respondents being head of their households. The majority of the respondents were male at 89.1% and with female at 10.9%.

In Uganda, even though there are more female than male in terms of population, most of the land and property assets are owned by male. This could explain why there are more male respondents than female respondents. Whereas the male own land, women will mostly farm on the land. Women who owned land in the project area either had purchased it with their own money or were widows.

Water Sources

According to the RAP household surveys, Boreholes constitute 74.5% as the main water source for the surveyed population followed by piped water at 25.5%The nearest source of water being in a close range of less than a kilometre while the furthest being between 2-3km. And much as water is very close to people, 99% of the respondents indicated that they buy water and, on many occasions, its unavailable.

Forms of Sanitation

The overwhelming majority of survey participants (99%) have access to a pit latrine only, 1% use communal pit latrine, none in the project area has a flushing toilet.

Therefore, the Nyamugasani Water Supply and Sanitation Project will supplement sanitation efforts by constructing 4No 5 stance public toilet facilities listed in **Error! Reference source not found.**

Project Perceptions

The majority of households surveyed are very supportive of the Nyamugasani Water Supply and Sanitation Project at 99.3%, 0.7% of the households are somewhat in support of the project

The very high support of the project implies that water is very much needed in the project and surrounding areas and that there will be minimal disturbances during the construction phase.

It's important to take note of the fact that even if the community is in need of water and supportive of the Nyamugasani Water Supply and Sanitation Project. There are serious demands for water to be free due to the high poverty prevalence in the area but this is also borrowed from the neighbouring sub counties where water is provided at no cost to the community.

E5. Project Impacts Identification

Project Impact Minimisation Efforts

This RAP has been prepared based on the MWE approved Feasibility and Preliminary Design Reports of September 2022 by SMEC. During the RAP surveys, efforts have made to avoid physical displacements as much as possible by avoiding impacting public and institutional infrastructure structures as much as possible. The project will displace 14 families with 14 structures of both permanent and temporary in nature at the water treatment Plant site whose land measure approximately

In addition, the Project water pipes (transmission and distribution pipes) are routed along the existing community access roads. The easement corridors for pipes have been proposed at 3 metres wide (1.5 meter on either side of the centre line). Furthermore, the sites for permanent land acquisition – borehole sites, access roads, and sanitation facility sites -- are of minimal land take or located on land parcels with minimal impacts on economic and livelihood activities of affected persons. For example, reservoir, and sanitation facilities whose sites measure approximately 6.2450acres.

Identifying Project Impacts

For the purposes of defining impacts, a distinction is drawn between households that are both physically and economically displaced and those that are only economically displaced, as follows:

- Physical Displacement: Loss of shelter and assets resulting from land acquisition associated with a project that requires PAP to relocate.
- Economic Displacement: Loss of income streams or livelihood means resulting from land acquisition or obstructed access to resources (land, water, or forest) resulting from the construction or operation of a project or its associated facilities. For example, economic displacement can result from loss of access to farmland and can occur without physical displacement occurring.

Another important distinction in defining impacts is between permanent land acquisition and permanent land restrictions, which are defined as follows:

- Permanent land acquisition involves the project acquiring all land including land registration and title processing. This is the case for land required for the Water Treatment plant Site, Reservoir Sites, Access Roads and Sanitation Facility Sites.
- Permanent land restriction involves limitations imposed on the land under easement corridors for water pipes which prohibits building any structures or cultivating perennial crops and trees within the corridor. However, any existing PAH retains land use/ownership rights and cultivation of seasonal crops within the easement corridor, or any other land uses. Land use restrictions decrease land use potential which decreases the land value. It is this diminution (reduction in value) that is compensated.

Lastly, impacts have been disaggregated by land tenure status in accordance with Article 237 of the Constitution of the Republic of Uganda (1995) and land tenure systems found in the Project Area including:

Customary: Applicable to a specific area of land and characterized by local customary regulation which applies local customary regulation and management to individual and household ownership, use and occupation of, and transactions in, land. Providing for communal ownership and use of land in which land parcels may be recognized as subdivisions belonging to a person, a family, or a traditional institution. Land is considered as owned in perpetuity.

The PAHs by land tenure type is presented in the table below

| PAH l | by Land | Tenure | Туре |
|-------|---------|--------|------|
|-------|---------|--------|------|

| Land Tenure | No. of PAPs | Percentage |
|-------------|-------------|------------|
| Customary | 1737 | 0 |
| Licensee | 5 | 0 |

Project Impacts Based on Socio-economic and Asset Surveys

| Impacts | Impacts (Acres) |
|---|-----------------|
| Total Land Affected (Permanent Acquisition & Restriction) | 170.7438 |
| Permanent Land Affected (Intake Sites, Reservoir Sites, Access Roads, and Sanitation Facility Sites) | 6.2450 |
| Permanent Land Restriction (Easement for Transmission and Distribution Pipes) | 164.4988 |
| Total Number of Freehold Landowners Affected | - |
| Total Number of Customary Landowners Affected | 1737 |
| Total Number of Licensees Affected | 5 |
| Permanent Land Affected (Intake Sites, Reservoir Sites, Access Roads, and Sanitation Facility Sites) of Customary Landowners Affected | 6.2450 |
| Permanent Land Restriction (Easement for Transmission and Distribution Pipes) of Customary Landowners Affected | 164.4988 |
| Physically Displaced Households (PAHs) | 14 |
| Physically Displaced Persons (PAPs) | 14 |
| Number of Affected Residential House Structures | - |
| Number of other Affected Fixtures (i.e., fences) | 223 |
| Number of Affected Graves | 10 |
| Economically Displaced Households (PAHs) | 9 |
| Economically Displaced Persons (PAPs) | 9 |
| Number of Affected Crops and Trees | - |
| Number of Affected Commercial Structures | - |

E6. Compensation Framework

Under the applicable standards, the Project Proponent MWE is required to compensate and/or assist physically or economically displaced PAPs.

Affected persons includes:

- 1) Those who have formal legal land or asset rights.
- 2) Those who do not have formal legal land or asset rights, but have a claim to land or assets that is recognized or recognizable under national law.
- 3) Those who have no recognizable legal right or claim to the land or assets they occupy or use.

Compensation for assets should be at full replacement value which includes:

- Agricultural Land: The market value of land of equal productive use or potential -- which must be located in the vicinity of the affected land -- plus the cost of preparation to levels similar to or better than those of the affected land plus the cost of any registration and transfer taxes
- Residential and Urban Land: The market value of land of equal size and use, with similar or improved public infrastructure facilities and services -- preferably located in the vicinity of the affected land -- plus the cost of any registration and transfer taxes

- * Perennial Crops and Trees: Equivalent to current market prices given the type, age, and productive value of the plants and/or trees, including lost future productivity
- * Household and Public Structures: The cost of building a new structure with an area and quality similar to or better than those of the affected structure, or the cost of repairing a partially affected structure, including labour and contractor fees and any registration and transfer taxes
- ✤ In determining replacement costs, neither asset depreciation nor the value of salvage materials are taken into account.

Compensation Eligibility

PAHs are eligible for compensation and other assistance if they have a "legitimate interest" in Project Area "immoveable assets" that are in place (i.e. established, in the case of crops; or constructed, in the case of buildings and other structures) at the time of the Entitlement Cut-off Date.

"Legitimate interest" in household-level immoveable assets is usually held by a single member: the HoH. Through traditional and family practice, the HoH is typically the most senior male household member. In some instances, the legitimate interest may be held jointly, i.e. by the household head and his/her spouse, or with other extended family members. In accordance with the applicable standards, the compensation framework includes gender-specific components to ensure that documentation of ownership or occupancy and compensation payments will be issued in the names of both spouses and single heads of households as relevant.

Note that "legitimate interest" is not synonymous with ownership. Even those Project-affected persons/households/communities with no recognizable legal right or claim to assets they are occupying should be considered eligible for resettlement assistance.

Immoveable assets comprise:

- Land
- Perennial crops and trees fully or partly established at the Entitlement Cut-off Date
- Buildings and Other Structures including residential houses, stores, kitchen blocks, latrines, 473 wells, commercial structures and other structures such as animal pens and graves. These must have been fully or partly constructed.

Immoveable Assets that are planted (in the case of crops and trees) or constructed (in the case of buildings) after the Entitlement Cut-off Date are not included in compensation calculations.

Therefore, eligibility derives from association with the land, based on the results of the asset and socio-economic surveys. Categories of eligible persons will include --but not limited to -- the following:

- Households whose fixtures (fences) are affected by the Project Permanent Land Restrictions (Easement for Transmission and Distribution Pipes)
- Households that will be economically displaced, as they have assets or crops/trees to be affected by the Project, so will lose access to their means of production (including rights to unrestricted use of agricultural land or other natural resources);
- Public institutions such as educational institutions, religious institutions and administrative centres affected by the Project Permanent Land acquisition (especially sanitation facility sites) and Permanent Land Restrictions (Easement for Transmission and Distribution Pipes) that will lose fences and crops and;
- ✤ Households experiencing loss of, or restrictions of access to some or all of their common resources (for example fuel wood).

Entitlement Cut-off Date

The date of cadastral and asset surveys is the entitlement cut-off date. PAPs were informed of entitlement cut-off dates during the stakeholder consultations as well as during the PAH surveys. Each PAH was provided with a copy of the Asset Survey Form that was dated and signed off by the Valuer, PAP, and the Local Council Chairperson. Cadastral and asset surveys were carried out from 13th October 2022 to November 18th 2022.

Entitlement Matrix and Payment Options All entitlements associated with the defined eligibility are presented in the Entitlement Matrix below.

| | | Entitlements | | |
|--|---|---|--|--|
| Affected Asset or Right | Eligibility Considerations | Compensation | Allowances | Livelihood Restoration + Vulnerable Assistance |
| Loss of Fruit Trees and Perennial Crops | Crops in place at Entitlement Cut- off Date and identified during asset surveys. | Cash compensation at district rates based on size (height and maturity) | 15% disturbance allowance based on cash compensation value. Salvaging permitted | Access to financial management training |
| Loss of Non- economic Trees and Bushes | Non-economic trees and bushes in place at Entitlement Cut- off Date declaration. | Cash compensation at district rates based on size (height and maturity). | 15% disturbance allowance based on cash compensation value. Salvaging permitted | Access to financial management training |
| Loss of Seasonal or Annual Crops | Crops in place at Entitlement Cut- off Date declaration | Not eligible for cash compensation. | Harvesting permitted | Timing of Project aligned with harvesting seasons to ensure no loss of annual crops. However, if Project schedule impinges on PAPs ability to harvest, cash compensation at district rates based on size (height and maturity) + 15% disturbance allowance based on cash compensation value. The seasonal assets will be assessed and a valuation report prepared and approved accordingly |
| Permanent | Customary | Non-vulnerable | 15% | Agricultural starter |

Detailed Entitlement Matrix

| | | Entitlements | | |
|--|--|--|--|---|
| Affected Asset or Right | Eligibility Considerations | Compensation | Allowances | Livelihood Restoration + Vulnerable Assistance |
| Loss of Land (Water Source Sites, Reservoir Sites, Access Roads, and Sanitation Facility Sites) | Landowners (whose land is not encumbered with Kibanja interests) at Entitlement Cut- off Date | households: Cash compensation at 100% of full replacement value. Vulnerable households: In kind compensation with a standard plot size. Land Title Certificate or Certificate of Customary Ownership to HoH and spouse(s) | disturbance allowance based on cash compensation value. | kit Access to financial management training |
| Permanent Land Use Restrictions (Easement) | Customary Landowners (whose land is not encumbered with Kibanja interests) at Entitlement Cut- off Date | Non-vulnerable households: Cash compensation at 100% land interest and 80 - 100% diminution of full replacement value Vulnerable households: In kind compensation with a standard plot size. Land Title Certificate or Certificate of Customary Ownership to HoH and spouse(s) | 15% disturbance allowance based on cash compensation value. | Access to a number of capacity-building programs. Access to financial management training |
| Loss of Other Structures | Other structures (fences etc.) at Entitlement Cut- off Date declaration. | Cash compensation at full replacement cost (based on size, level of completeness, construction | 15% disturbance allowance on cash compensation. Salvaging | Access to financial management training |

| | | Entitlements | | |
|-------------------------------|--|--|--|---|
| Affected Asset or Right | Eligibility Considerations | Compensation | Allowances | Livelihood Restoration + Vulnerable Assistance |
| | | materials, and finishes with no depreciation considered). | permitted | |
| Other Allowances | All affected households and entities | | Harvesting permitted Salvaging permitted Support opening bank accounts | Access to financial management training |
| Vulnerable Persons | Identified Existing & Potentially Vulnerable Households | Eligible for in kind compensation for loss of land or dwellings. | Prioritisation for compensation and moving assistance. | Support: All vulnerables will be eligible for vulnerable support program (legal, psychological, educational, health support) |

E7. Livelihood Restoration Plan

The Nyamugasani Water Supply and Sanitation Project will act to restore the livelihoods and living standards of all displaced persons to levels equivalent to or better than those maintained at the time of physical or economic displacement.

Therefore, this Project LRP aims to restore and improve PAPs affected livelihoods. This RAP also takes a Sustainable Livelihoods approach, which presents a holistic method to livelihood restoration, bridging the relationship between capital assets (human, natural, financial, physical, and social) and the latest empirical evidence-based economic and international development research to achieve livelihood outcomes (well-being, income, food security, vulnerability/risk management, and sustainable use of natural resources).

Livelihood restoration encapsulates specific measures necessary to mitigate any harmful or negative Project impacts on PAPs economic assets or activities.

The LRP objectives are to:

- Support affected people, households, and communities in overcoming the disruption generated by displacement and promote the establishment of inclusive and sustainable community livelihood systems.
- Improve the quality of life of affected families by building their capacity in managing, cash compensation.
- Meet the compensation commitments and support the effective management of compensation commitments – as negotiated with affected households, such that they receive compensation and other assistance in a manner enabling them to create new income sources.
- Ensure that displaced households can equally access and benefit from other community, district, and regional development programs and initiatives such as government programs and community development activities.

The LRP programs include:

- Financial Management Support Program (FMSP)
- Agricultural Starter Kits

E8. Vulnerable Persons

Vulnerables refers to those who may be more likely to be adversely affected by the Nyamugasani Water Supply and Sanitation Project impacts and/or more limited than others in their ability to take advantage of a project's benefits.

In preparing this RAP, only two (2) vulnerable PAPs have been identified and consulted. Assistance measures have been developed to prevent disproportionate impacts on them.

The completed socio-economic survey and vulnerability assessments indicate that the categories of Project-affected vulnerable persons include:

- Elderly headed households with limited support. A household headed by an elderly person could have difficulty producing enough crops to feed the family. Elderly people may not necessarily be vulnerable, particularly if they live in extended family groups, but the Project will need to ensure their needs are appropriately met during physical relocation and re-establishment of houses and crops.
- Widows. In Uganda, widows remain the most vulnerable members of society as they are often threatened by in-laws and without proper ownership documentation of the assets of their late husbands. The Project shall provide sufficient legal support to households headed by windows to ensure they are not disfranchised of their property and asset ownership rights.

Vulnerability Support Programs

Identified vulnerable households and individuals will be monitored and provided with the following assistance:

- Assistance with understanding of agreements and signing and additional time and independent support to ensure their agreement is properly informed.
- Assistance with collection of compensation and priority access to mitigation and development.
- Legal assistance (if required) for establishing powers of attorney).
- Transport assistance to designated Project meeting venues.
- Increased number of monitoring visits.

E9. Cultural Heritage Protection

The Asset survey indicates that the Nyamugasani Water Supply and Sanitation Project **will not impact any graves**, however, the activities of the Nyamugasani Water Supply and Sanitation Project have the potential to trigger OP 4.11 Physical Cultural Resources. During excavation works for Project infrastructure, there might be chance finds.

Any chance finds will be treated in line with the requirements of OP 4.11. The objective of OP 4.11 is to avoid, or mitigate, adverse impacts on cultural resources from World Bank Funded Development Projects

Chance Finds

The Project has developed a Chance Finds Procedure for when previously unknown cultural heritage is encountered during Project activities. This procedure will be included in all construction-related contracts for this Project.

All MWE and contractor personnel involved in Project construction shall be responsible for following the Chance Finds Procedure.

E10. Household Sign-offs and Moves

Where resettlement is confirmed and unavoidable, projects need to develop strategies for household sign-off and moves.

There are two key household sign-off phases:

- 1) Phase 1: Household Verification This process involves households verifying that assets have been properly surveyed and the records fully reflect their interest in the asset.
- 2) Phase 2: Sign-off Where households confirm the compensation as applied to their household are acceptable and they agree to allow the Project to proceed and take over ownership of the land for Project components that require permanent land acquisition.

Group Disclosure

Together with the RAP Implementation Consultant, MWE is responsible for overall RAP implementation. Once the RAP and the Valuation Report are approved, MWE shall undertake group disclosures with affected Project Area communities and their leaders. These shall take place in the Kasese District at the Sub-counties and all PAPs shall be invited to attend. Information on key RAP findings and impact mitigation measures for minimizing displacement will be shared at the meetings. Importantly, the group disclosure meetings will be held at a time that takes into consideration local context, ensuring that women and youth are able to attend.

PAPs will be informed of compensation procedures, modes of compensation, eligibility criteria, livelihood programs, vulnerable support programs, and the process for signing compensation agreements.

PAH Verification

Each household asset survey included sign off by the relevant LC1, BTS, and the Project affected head of household. A copy of the captured assets was handed to head of household to support a smooth verification process. This provided the PAH an opportunity to verify that all their assets have been recorded properly and that they agree to use the recorded assets as the basis for their RAP entitlements. As part of the verification process, PAHs will be presented with:

- Demographic information including name, ID number, recorded affected assets, contact information and photos.
- Table for each main asset type (land, crops, structures) outlining survey date, survey code, and asset interest.
- Record of grievances lodged by the PAH to help the Project assess any outstanding issues.
- Photos of assets taken during the surveys.
- Agreement with relevant signatures (LC1 chairperson, Area Land Committee Chairperson, MWE Officer, and the RAP Implementation Consultant, PAPs) that the household accepts the information on the form. The statement should include agreement to abide by any relevant land use restrictions (e.g. plant height restrictions above the easement).

Household verification will be undertaken by the head of household and spouse(s) to ensure they both agree to the survey findings and to protect the interests of the spouse(s). MWE (together with the RAP Implementation Consultant) to obtain PAP bank details or support PAHs in setting up accounts. A spousal consent and joint account shall be required where applicable.

Sign-off Process

Upon completion of the verification exercise, the RAP Implementation Consultant and MWE, shall disclose the individual compensation packages in one-on-one meeting with PAHs timed to not impact livelihoods as well as cultural or religious functions or duties. For the sign off process, the same information listed in Section 11.4 will be presented in the form of a household dossier.

PAPs who agree with the entitlements shall sign off on the compensation agreements. For couples, a spousal consent and joint account shall be required. The agreements shall be witnessed by an LC1 chairperson, Area Land Committee Chairperson, MWE Project Officer, and the RAP Implementation Consultant.

PAHs who disagree with the compensation package shall notify the RAP Implementation Disclosing Officer and register their concerns in the area designated for grievances on the disclosure document. PAHs are also free to provide additional information and register their grievance in accordance with the RAP's grievance mechanism.

E11. Grievance Mechanism

The Nyamugasani Water Supply and Sanitation Project is required to propose and implement a grievance mechanism to receive concerns and grievances and facilitate their resolution.

The grievance mechanism's goal is to deploy a reliable and effective method for project stakeholders to voice and address land acquisition and resettlement-related concerns.

Grievance Management Committees (GMCs)

Prior to RAP implementation, GMCs shall be established and trained by the RAP Implementation Consultant in grievance handling with clear responsibilities including the following:

- Facilitating access to information and attending to complaints that may be resolved by providing information
- Providing a free and accessible method to PAPs to report their grievances and complaints as the established GMCs. In addition, any aggrieved stakeholder will be free to submit their grievance through their LC1 chairpersons.
- Maintaining records of all grievances brought before the committee by PAPs
- Establish a forum and a structure to report grievances with dignity
- Providing a forum for resolving grievances and disputes at the lowest level
- Providing access to a fair hearing and remedy
- Verifying facts presented at grievance hearings using their community knowledge and experience and providing MWE with meeting minutes from each hearing
- Providing access to negotiate and influence project decisions that may adversely affect them
- Resolving disputes quickly before they escalate to unmanageable levels
- Referring any unresolved grievances to higher levels for action and further follow up
- Liaising with local leaders to ensure health, safety and security of the communities, workers and construction materials during the project implementation

The GMCs shall be established at four different levels as below:

- ✤ Village GMC
- Town Council GMC / Subcounty GMC
- District GMC
- Ministry GMC

Grievance Mechanism Publicizing

The grievance mechanism shall be widely publicised within the Project Area through sensitization and community meetings.

The grievance mechanism shall be publicised as part of consultation and disclosure activities. It will be communicated verbally at community and public meetings and will also be included in all communication materials such as Subcounty noticeboards. Specific reference to the grievance mechanism shall be included in all compensation and sign-off agreements.

The grievance-handling steps are outlined below. Once received, all grievances will be responded to within a maximum of 30 days.

| # | Step | Responsibility |
|---|---|-------------------------------------|
| 1 | Receive Grievances and Provide PAPS with a | MWE, RAP Implementation Consultant, |
| | Grievance Acknowledgement Form | and GMCs |
| 2 | Grievance Registration and Acknowledgement | MWE, RAP Implementation Consultant, |
| | | and GMCs |
| 3 | Grievance Sorting and Logging in database and | MWE, and RAP Implementation |
| | tracking system | Consultant |
| 4 | Grievance Assignment | MWE |
| 5 | Grievance Processing and Feedback (30 days) | MWE, RAP Implementation Consultant, |
| | | and GMCs |

Grievance-handling Steps

| # | Step | Responsibility |
|---|---|----------------|
| 6 | Corrective Actions, Grievance Follow Up and Closure | MWE |

A grievance shall be submitted either verbally or in writing at the complaints and grievance desk which will be the secretariat for grievances management. The desk shall be at the Subcounty, town council, and Ministry. This desk will be assigned with the responsibility of receiving, registering, and screening, assessing and following up complaints and grievances to their conclusion. The desk will be hosted by the following officers who shall serve as Grievance Officer (GO) at different levels.

Grievance Officers at Different Levels

| No. | Grievance Committee Level | Responsibility/ Host office |
|-----|---------------------------|-------------------------------|
| 1 | Sub County/ Town Council | CDO Subcounty or Town Council |
| 2 | District | SCDO District level |
| 3 | MWE | Principal Sociologist |

Grievances may, in addition, be submitted through any of the following channels:

| \square | Letter to: The Permanent Secretary Ministry of Water and Environment |
|-----------|---|
| | Plot 3-7 Kabalega Crescent |
| | P.O. Box 20026, Kampala |
| R | Email: mwe@mwe.go.ug |
| 9 | Telephone: + 256 800 200 977 |
| Ķ | Walk in to: MWE Offices GMC Offices at Subcounty HQs or District HQs |
| y | Social Media: @min_waterUg |
| ₩ | Through stakeholder consultation and engagement meetings |

Complainants identified as recognised vulnerable persons, per the Vulnerable Program, will be provided with adapted grievance procedures to ensure their interests are protected. These grievances will be handled with utmost importance and special considerations (document support and legal advice) will be upheld.

Grievance Database Management and Tracking

All received grievances shall be registered and logged into the grievance register for further management and tracking. An acknowledgement receipt shall be issued to the complainant. MWE shall keep written records of all complaints for effective grievance management.

All decisions reached at the different resolution levels shall be communicated to the complainant and other stakeholders by the Chairperson of the respective GMC. It will be the responsibility of the GO to deliver the communications. Evidence of communication of decisions to complainants shall be acknowledged by way of signing a dispatch form or acknowledgement of a file copy.

Agreed corrective action will be undertaken by the responsible agency/ part for example a Local government, MWE, contractor or authorized sub-contractors in close consultation with the

complainant within the agreed timeframe and completed action recorded in the grievance database. To verify satisfaction, the Grievance Committee will upon receipt of a completion report from the GO verify that corrective actions have been implemented. A signature of the complainant will be obtained on the consent form. If the complainant is not satisfied with the outcome of corrective action, additional steps may be undertaken to reach agreement or an appeal will be lodged by the complainant.

As part of the broader community engagement process, MWE shall also report back periodically to communities and other stakeholder groups as to how the company has been responding to the grievances it has received (i.e., time to respond, percentage of closed/resolved cases, number of complaints monthly)

E12. Monitoring, Evaluation, and Reporting Framework

Monitoring Framework

Monitoring is an internal management function that measures RAP implementation progress and performance including key procedure progress such as compensation and resettlement. Specific consideration will be given to:

- ✤ Monitoring the use of RAP inputs and outputs according to established cost and time schedules.
- ◆ Any emerging social or economic difficulties encountered by PAPs during the compensation process
- Compensation program compliance and completeness
- Monitoring community consultation and grievance participation

Performance Monitoring

Performance monitoring is also an internal management function allowing MWE and the RAP

Implementation Consultant to measure the results of the delivered inputs.

RAP performance monitoring will be integrated into the overall project management to ensure RAP activities are synchronized with all project implementation activities. Performance Monitoring Reports

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shall be prepared every month throughout the RAP implementation schedule.

Internal Monitoring Process

The Internal Monitoring Process includes establishing M&E systems and databases, ongoing monitoring, monthly reporting, and vulnerability assessments. Internal evaluation shall be based on the

following criteria:

- Project Effectiveness: Have the planned purpose, objectives, and results been achieved? Was the intervention logic correct? Were the resources applied appropriately in relation to the expected outcome? Were the means commensurate with the goal(s)?
- ◆ Project Efficiency: Were resources (human, financial, material, time) used satisfactorily to achieve outcomes? What could be done differently to maximize impacts within acceptable and sustainable resource structures?
- Project Impacts: To what extent has the program contributed toward its longer-term goals? Why or why not? What unanticipated positive and negative consequences did it have? To what extent has the Project achieved the central resettlement objective that affected communities and households have opportunities to improve their pre-Project livelihoods and living standard levels? Why or why not?
- Results Sustainability: Are positive impacts resulting from the program continuing? Will they continue once the program has been completed? Why or why not?

The monthly internal monitoring process will entail the following:

To-date accomplishments.

- Objectives attained and not attained during specific periods.
- Problems and challenges encountered.
- Suggestions for corrective actions.

MWE has the overall responsibility for conducting regular internal project implementation monitoring with tasks including the following:

- Tracking RAP implementation progress.
- Indicator measurements at appropriate intervals.
- Implementation of a system to regularly respond to monitoring findings by adapting existing measures or modifying implementation processes.

This monitoring process will be used to analyse progress and change at regular intervals and shall be linked to the various RAP implementation activities.

Evaluation Framework

Evaluation considers resettlement program outcomes through an impact assessment of affected household income, living standards, and environmental issues. RAP implementation focus is on household baseline data compilation to enable comparison during evaluation missions.

Impact monitoring gauges RAP implementation and its effectiveness in meeting the affected population's needs. Impact monitoring for this project will be conducted by the MWE and RAP implementation consultant Team. It will provide MWE and the funders with an assessment of resettlement effects, verification of internal performance monitoring, and identification of any necessary RAP implementation adjustments. PAPs should be included in all impact monitoring phases.

Project-related land acquisition will be tracked against the population's pre-land acquisition baseline conditions. This baseline has already been established through cadastral surveys, assets surveys, land use assessments, and socio-economic surveys of the affected population and the Project-affected area. This RAP has established objectively verifiable indicators for measuring resettlement impacts on the health and welfare of the affected population and the effectiveness of impact mitigation measures including livelihood restoration and community development initiatives.

Implementation

This RAP has established objective, verifiable indicators for measuring resettlement impacts on the health and welfare of the affected population and the effectiveness of impact mitigation measures including livelihood restoration and community development initiatives.

E13. Organisational Framework

MWE is responsible for RAP Implementation for the Nyamugasani Water Supply and Sanitation Project and has committed to hire more staff that shall constitute a RAP Implementation Team.

The specific MWE roles and responsibilities during RAP Implementation phase include:

- Lead RAP Implementation agency
- Reviewing and approving the RAP and all other reports
- Overall planning, co-ordination, and management of RAP implementation activities
- Liaising and coordinating with all RAP participants and contributors
- RAP activity budgeting
- Compensation Payment, including resettlement assistance
- Internal monitoring and evaluation
- Stakeholder Engagement
- PAP Verification
- PAP disclosure and Compensation Agreement sign-offs
- Grievance Management including preparation of supplementary valuation reports
- Management of Livelihood Restoration Programs, Community Development Programs, and Vulnerability Assistance Programs including:
- Implementation of Financial Management Support programs
- Implementation of Construction Training
- Implementation of LC1 Capacity-building Training

- Provision of legal services to PAPs where necessary in the course of compensation payment
- Internal monitoring and evaluation
- Survey and Titling of acquired land for the water source and reservoir sites.

Other RAP Implementation Parties

Other government departments and agencies play different but complementary roles in land acquisition, compensation, resettlement, and livelihood restoration. Each government department and agency bear institutional responsibilities and mandates as indicated below:

- Valuation: Office of the Chief Government Valuer
- Compensation Payment: MWE
- Livelihood Restoration: MWE, District and Local Governments of Kakumiro.
- Grievance Mechanism: LCs, Local Governments, and Courts of Law.
- Land Titling: Department of Surveys and Mapping, Department of Land Registration, and District Land Boards

E14. RAP Implementation Schedule, and Budget

MWE has committed that this RAP shall be implemented within a 12 months' period from December 2022 - November 2023. Project construction activities are expected to commence by the end of August 2023.

The overall RAP Budget is estimated at **UGX 286,573,636.** This has included costs for Compensation at **UGX 83,521,487**, Livelihood Restoration Measures at **UGX 20,000,000**, Vulnerable Support Programs at **UGX 7,000,000**, RAP Implementation Management at **UGX 150,000,000** with a 10% provisional contingency **UGX 26,052,149**.

E15. Change Management

This RAP is a living document that will be periodically updated as the Project progresses. This RAP should be regarded as a key management tool and Project document to serve as the basis for any future sub project RAPs.

The construction contractor may require land for lay down areas, and camps. In addition, unintended damage to land, crops, and structures may occur. MWE shall ensure that this land and any impacted assets are compensated for in accordance with the provisions of this RAP