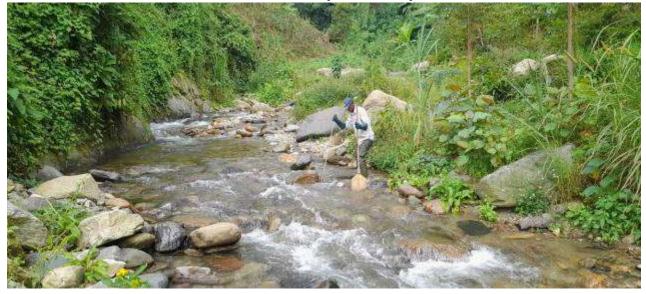


### REPUBLIC OF UGANDA MINISTRY OF WATER AND ENVIRONMENT

### 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 <sub>MIN</sub>	Lowest Noise Level
LA <sub>MAX</sub>	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 <sub>2</sub>	Non-Government Organizations Nitrogen Dioxide
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NO <sub>x</sub>	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
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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 ( <b>CC/EIA/159/22)</b> – 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 KM<sup>2</sup> lying inside Nyamugasani catchment out of the 995 KM<sup>2</sup> 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: -

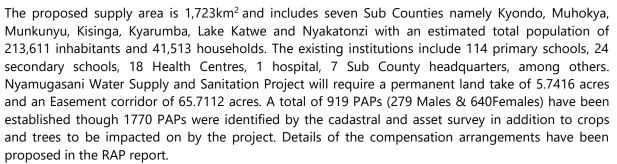
- i. Inlet Chambers and Inlet Channels. The channel incorporates a thin plate rectangular weir plate for flow Measurement of the raw water;
- ii. Flocculation preceded by Chemical Dosing of Alum;
- iii. Sedimentation Horizontal Flow Tanks, incorporating Lamella settlers towards the end of the tank;
- 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	<ul> <li>✓ The contractor should involve local leaders in recruitment process to ensure full and fair participation of local communities.</li> </ul>			
CP2	Income to material/ equipment suppliers and contractors	<ul> <li>✓ Earth materials needed for construction, for example, aggregate (stones and sand) will be obtained from quarry operations</li> </ul>			
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	<ul> <li>✓ Ensure Co-operation between international suppliers of specialized equipment and contractors and local contractors and sub- contractors and companies for transfer of skills</li> </ul>			
CP6	Boost to the Local Economy	<ul> <li>Provide direct employment opportunities to the workforce thus contributing towards alleviation of poverty and income generation for the local community;</li> <li>Stimulate business activities related to contracting works for local entrepreneurs (sub-contractors);</li> <li>Provide trading opportunities for local communities and other small enterprises in the area;</li> <li>Provide opportunities for provision of basic and other services for the contractors and immediate community. The project will consider employment of locals</li> </ul>			
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
			<ul><li>leakages thus contaminate the soils;</li><li>The contractor will be required to develop a waste</li></ul>
			management plan prior to start of construction activities;
			<ul> <li>Contractor will ensure that equipment is properly</li> </ul>
			maintained and fully functional in accordance with the
			manufacturer's recommendations;
			<ul> <li>During reinstatement, the trench back-fill material will be</li> </ul>
			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	<ul> <li>Contractor will ensure that equipment is properly</li> </ul>
			maintained and fully functional in accordance with the
			manufacturer's recommendations
			<ul> <li>Regular maintenance, monitoring and, where necessary,</li> <li>the use of silencies, equipment will be employed with</li> </ul>
			the use of silencing equipment will be employed with
XVIII			<ul><li>the aim of reducing noise emissions.</li><li>The selected contractor will be required to submit</li></ul>
			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.
			<ul> <li>Pumps, generators and other mobile equipment will be</li> </ul>
			sited as far as practicable from housing and other noise
			sensitive locations, work will not be carried out Sunday
			during service time or hours.
			<ul> <li>During periods of inactivity, equipment will be switched</li> </ul>
			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	<ul> <li>The wastes will be properly segregated and separated to</li> </ul>
		of construction wastes	encourage recycling of some useful waste materials, that
			is, some excavated material can be used as backfills.
			<ul> <li>The contractor and MWE will work hand in hand with the</li> </ul>
			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.
			<ul> <li>Hazardous wastes such as paints, cement, adhesives will</li> </ul>





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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	<ul> <li>Equipment, materials and chemicals must not be stored within 30 m of a watercourse bank;</li> <li>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;</li> <li>All construction equipment will be kept in good operating condition to avoid oil or fuel leakages that might contaminate water resources;</li> <li>Materials like sand and aggregates will be kept in bounded areas to avoid being washed away into water resources by runoff;</li> <li>MWE will ensure the contractor complies with its environmental management policies e.g. the National Environment (Wetlands, River Banks and Lakeshore management regulations, 2000).</li> </ul>
CP5	Air Pollution	<ul> <li>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;</li> <li>Trucks will be covered during haulage of construction materials to reduce on spillage of materials;</li> <li>Wherever dust suppression is necessary, water will be sprayed over dusty areas;</li> <li>It will be ensured that all equipment leaving the site, clean up their tires in case they are dirty;</li> <li>Construction work will be undertaken by an experienced and duly registered contractor with a verifiable sense of environmental awareness and responsibility;</li> <li>Workers will be provided with PPE (dust masks, safety googles) and the use of PPE shall be enforced;</li> <li>All construction equipment and trucks will be kept in good operating condition by regular servicing to reduce noise and exhaust emissions; and</li> <li>As part of the bidding processes, contractors will be required to provide their environment management plans that meet mitigation actions proposed in this ESIA</li> </ul>
CP6	Occupational Health and Safety Risks for the Workforce	<ul> <li>All construction workers will be oriented on safe work practices and guidelines and ensure that they adhere to them.</li> <li>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.</li> <li>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.</li> </ul>

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		<ul> <li>Signage will be used to warn staff and/ or visitors that are not involved in construction activities of dangerous places.</li> </ul>
		<ul> <li>Personnel will only undertake tasks for which they are</li> </ul>
		trained/ qualified. A formal 'permit to work' system will
		be in place and strict instructions will be given for
		operators of equipment.
		<ul> <li>Supervision of works will be done quarterly to ensure</li> </ul>
		that safety conditions are met while any deviation from
		safety regulations is immediately reclaimed following the
		best practices regarding safety at work equipment.
		<ul> <li>Communication line shall be ensured in between workers</li> </ul>
		and drivers of heavy equipment.
		<ul> <li>Daily Toolbox morning talks will be conducted to inform</li> </ul>
		all workers of the anticipated risks from the day's work.
		<ul> <li>Evacuation procedures will be developed by the</li> </ul>
		contractor to handle emergency situations
CP7	Risks of accidents	<ul> <li>Transport safety practices will be adopted with the goal</li> <li>af any stating traffic assidents and minimizing injuries</li> </ul>
		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.
		<ul> <li>Service ducts installed by the road contractor will be</li> </ul>
(		used where applicable to avoid cutting through roads
-		that have just been upgraded.
		<ul> <li>All workers, including sub-contractors and casual labour,</li> </ul>
		will undergo an environmental, health and safety
		induction before commencing work on site. This will
		include a full briefing on site safety and rules.
		<ul> <li>The affected communities will be informed of the timing and duration of the construction activities across access</li> </ul>
		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).
		<ul> <li>Identifying optimum routes from pipe storage areas to</li> </ul>
		the ROW to avoid sensitive receptors such as schools
		and hospitals, wherever possible and putting in place
		journey management plans.
		<ul> <li>Restrictions on hours of driving (including night time</li> </ul>
		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
		<ul> <li>Control over routes used by vehicles to avoid construction traffic using inappropriate roads and other</li> </ul>
		road users gaining access to the pipeline spread and
		access roads.
		<ul> <li>Ensuring adequate vehicle maintenance to ensure that</li> </ul>
		vehicles do not produce significant emissions and that all
		safety features including brakes, lights etc. are in good

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		condition
CP8	Landscape, Land Use Impacts and Loss of Structures	<ul> <li>Condition</li> <li>The contractor will be required by MWE to develop and implement a Reinstatement Plan.</li> <li>MWE shall ensure that this land and any impacted assets are compensated for in accordance with the provisions of this RAP.</li> <li>Upon payment of cash compensations, PAHs will be given sufficient time to salvage building materials from any lost structures.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>
CP9	Social Misdemeanour by Construction Workers	<ul> <li>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.</li> <li>A sensitisation programme for the would-be affected local communities will be conducted prior to commencement of and during the project implementation.</li> <li>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.</li> <li>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.</li> <li>All construction workers shall be orientated and sensitized about responsible sexual behaviour in project communities</li> </ul>
CP10	Loss of Land and displacement of economic activities	<ul> <li>Ensure timely and appropriate compensation</li> <li>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.</li> <li>PAPs should be given financial literacy on how to use</li> </ul>

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	CP11	Conflicts due to influx of immigrant labour	<ul> <li>their compensation packages.</li> <li>In-kind compensation can be considered especially for institutional landowners.</li> <li>LGs should be involved in mobilisation and sensitizing PAPs.</li> <li>The Contractor should develop guidelines for behavioural conduct, including penalties for its workers.</li> <li>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</li> </ul>
	CP12	Risk of violence against children	<ul> <li>Employers at both the construction and operation phase should have a strict employment code of conduct.</li> <li>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.</li> <li>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.</li> <li>Monitoring school attendance</li> <li>Sensitization in schools</li> <li>Reporting mechanisms in place such as a whistleblowing system</li> </ul>
xxii	CP13	Risk of Child Labour	<ul> <li>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.</li> <li>Put notices on work sites (NO CHILD LABOUR) in order to silence agitations</li> <li>Engage District Community Development Office (DCDO), Gender Officers, Parish Chiefs among others.</li> <li>Monitoring school attendance</li> <li>Sensitization in schools</li> <li>Reporting mechanisms in place such as a whistleblowing system</li> </ul>
	CP14	Risk of Gender Based Violence	<ul> <li>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;</li> <li>MWE should ensure that social safeguards personnel are recruited as part of the project implementation personnel to supervise contractors and to continuously engage communities;</li> <li>Put GBV reporting mechanisms in place;</li> <li>Community sensitization among men and women</li> </ul>
	CP15	Increase in HIV/AIDS and STDs	<ul> <li>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;</li> <li>Establish and implement Contractors' HIV/AIDS Workplace Policy;</li> <li>Free HIV/AIDS testing, counselling and condom</li> </ul>





		<ul> <li>distribution be encouraged for both workers, sex workers and local community;</li> <li>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</li> </ul>
OP1	Occupational Health and Safety Risks	<ul> <li>✓ 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.</li> <li>✓ Side rails will be installed along the channel crossings to enhance community safety and minimize the risk of falling into the channels.</li> <li>✓ Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a heavy downpour.</li> <li>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.</li> </ul>
OP2	Loss of income from Project-related activities	<ul> <li>All people taken on to work on this Project will be informed about its duration and phasing beforehand, so that they can plan accordingly.</li> <li>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.</li> <li>Unskilled labourers taken on from the local communities surrounding the project area will be kept on for maintenance works of the channel, where possible.</li> <li>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.</li> </ul>
OP3	Risk of accidents	<ul> <li>Side rails will be installed along the river crossings to enhance community safety and minimize the risk of falling into the river.</li> <li>Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a heavy downpour.</li> <li>Community sensitization to instil a sense of ownership of the project and project infrastructure so as to encourage</li> </ul>

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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		<ul> <li>The vehicles and machinery will be regularly serviced and maintained to optimum working conditions to minimize potential emissions.</li> </ul>
	Disturbance due to noise pollution and vibrations	<ul> <li>The Contractors and workers for operation and maintenance should be especially mindful when carrying out construction near sensitive receptors such as business centres.</li> <li>Maintenance activities will be limited to daytime, especially in residential areas to minimize disturbance of residents.</li> <li>Regular care and maintenance of vehicles and equipment must be undertaken to ensure they run smoothly so as to minimize emissions of noise.</li> <li>Project machines and vehicles will be turned off when not in use</li> </ul>
OP5	Disturbance due to noise pollution and vibrations	<ul> <li>✓ The Contractors and workers for operation and maintenance should be especially mindful when carrying out construction near sensitive receptors such as business centres.</li> <li>✓ Maintenance activities will be limited to daytime, especially in residential areas to minimize disturbance of residents.</li> <li>✓ Regular care and maintenance of vehicles and equipment must be undertaken to ensure they run smoothly so as to minimize emissions of noise.</li> <li>Project machines and vehicles will be turned off when not in use</li> </ul>
OP6	Improper waste management	<ul> <li>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.</li> <li>The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reduce, reuse and recycle</li> <li>Waste transportation vehicles will be covered to avoid spillage or waste getting blown off during haulage.</li> </ul>
OP7	Impact on water resources and the receiving habitats	<ul> <li>✓ 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.</li> <li>✓ The designed channel corridors need to be protected from encroachment.</li> <li>✓ The channels must be regularly and adequately maintained – including replacement of damaged lining, vegetation clearing, de-silting, garbage/debris removal and dredging.</li> <li>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.</li> </ul>

EXECUTIVE SUMMARY

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.)

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 1,723km<sup>2</sup> 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

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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 <sup>th</sup>	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. <b>Annex 5</b> 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	<b>o i</b>
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 <sub>2</sub> )	8 hour	9.0 ppm	
	Carbon monoxide (CO)	8 hour	9.0 ppm	
	Hydrocarbons	24 hour 24 hour	5 mg m <sup>-3</sup>	
	Nitrogen oxides (NO <sub>3</sub> )	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- <sup>3</sup>	
	Sulphur dioxide (SO <sub>2</sub> )	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 <sup>1</sup>	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) <sup>2</sup>	ΝΕΜΑ	Both the Contractor and Operator	

Table 8: Permits and licenses required by the proposed development

<sup>&</sup>lt;sup>1</sup> And any other permits or licenses prescribed by NEMA in the Certificate of Approval for the ESIA Report.

 $<sup>^{2}\,\</sup>text{A}$  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							
	<b>Environmental Assessment (OP/BP/GP 4.01)</b> 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 <b>170.7438</b> acres and an
	Easement corridor of <b>164.4988</b> 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	
<b>Air Emissions and Ambient Air Quality</b> 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.	
<b>Noise</b> 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:
<b>Contaminated Land</b> 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	
<b>Communication and Training</b> 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.	
<b>Occupational Health and Safety</b> 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	<ul> <li>before submission to NEMA</li> <li>Monitors and evaluates the development project to keep track of the performance, efficiency and effectiveness of its implementation</li> <li>Apply for Surface Water Abstraction Permits from DWRM.</li> <li>Compensate local Project Affected Persons (PAP) for any loss or negative effect of the project before implementing the project.</li> <li>Implement mitigation measures and actions to protect the environment and monitor implementation of proposed measures in the specific site- ESMPs.</li> </ul>
Directorate of Water Resources Management (DWRM)	<ul> <li>Issue water abstraction and wastewater discharge permits.</li> <li>Ensure monitoring of surface water resource, laboratory and field works and ultimately water pollution control</li> </ul>
National Environment Management Authority (NEMA)	<ul> <li>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.</li> <li>Coordinate, inspect, supervise and monitor project activities to ensure that the environment and natural resources are not depleted but managed sustainably.</li> </ul>
Ministry of Lands, Housing and Urban Development (MLHUD)	<ul> <li>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.</li> <li>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.</li> </ul>
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)	<ul> <li>Coordinate, inspect, supervise and monitor the environment and natural resources.</li> <li>Ensure that environmental policies and laws are respected while implementing water resources related projects.</li> </ul>
District Local Administration Structures (Kasese District Local Government)	<ul> <li>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.</li> <li>Local government structures are important for mobilising support</li> </ul>

	<ul> <li>for the project as well as monitoring its social-environmental impacts both during construction and operation phases.</li> <li>Facilitate and/or coordinate activities of the developer in their areas of jurisdiction.</li> <li>Mobilize local communities and key stakeholders to participate in EIA consultations and/or public hearings.</li> </ul>
Ministry of Gender, Labour and Social Development (MGLSD)	<ul> <li>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.</li> </ul>

# **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.

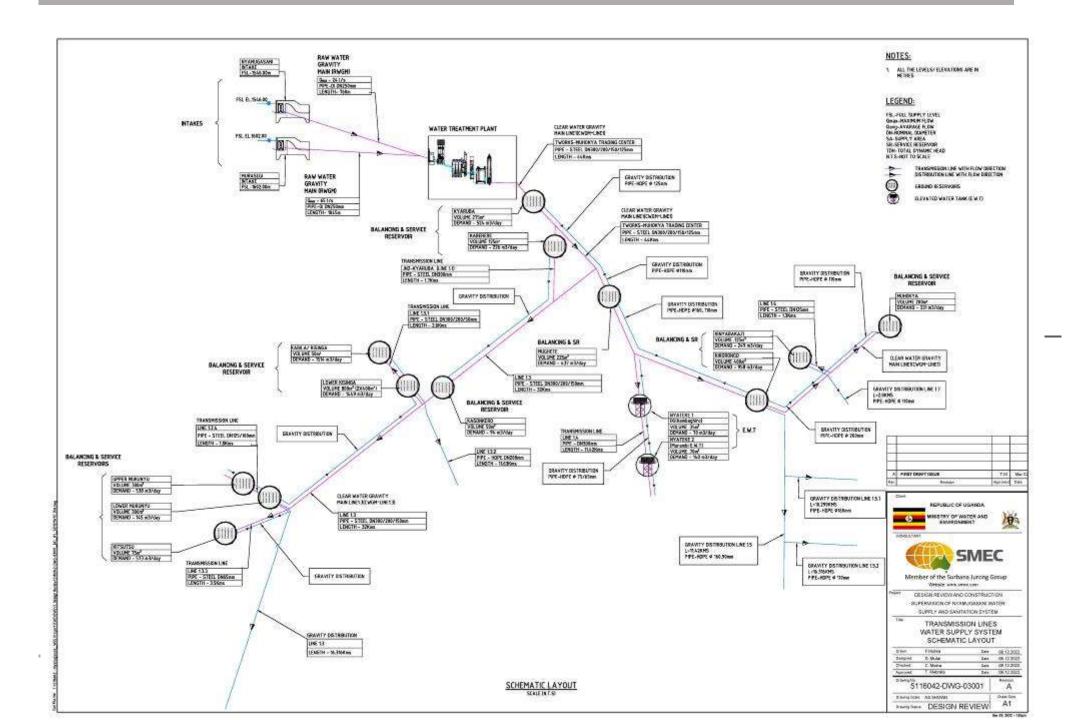


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-1: Map showing location of project area

#### 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 m<sup>3</sup> /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.

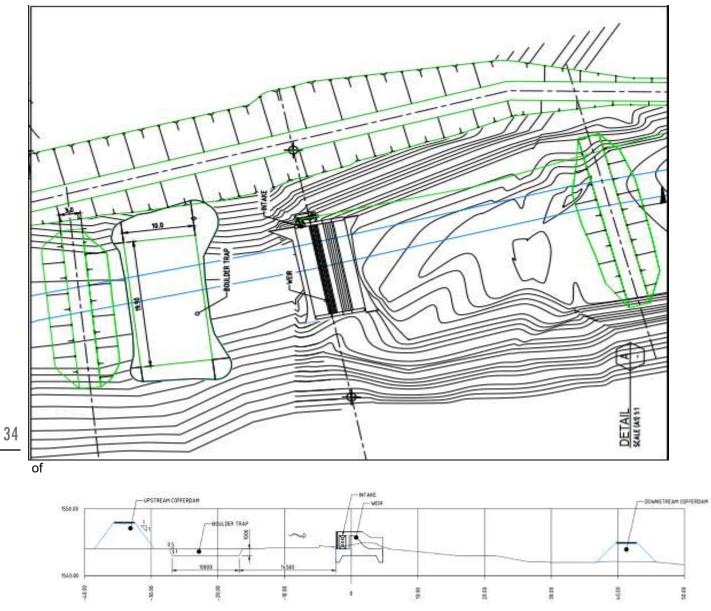


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-2: Nyamugasani and Nyamuruseghe Weir Proposal and diversion works



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.

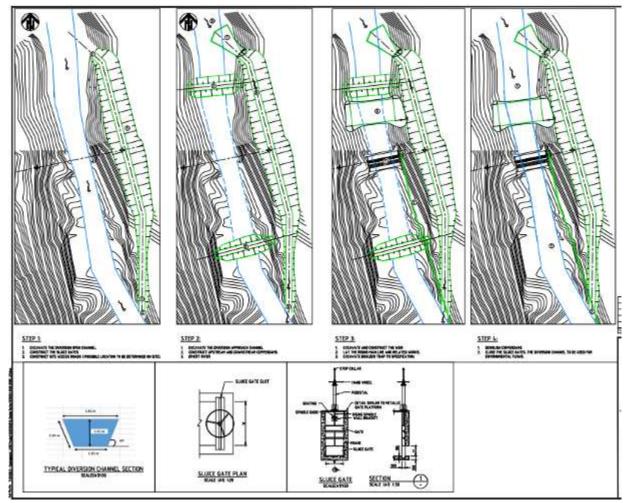


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-3: Proposed Weir Construction Sequencing

# 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 m<sup>3</sup>/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 <sup>3</sup> /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 65.6m<sup>2</sup> which is quite spacious; this has been reviewed so that there are 3No. units for the staff housing, each of a floor area of 45-50m<sup>2</sup>, 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 71m<sup>2</sup>. 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 m<sup>2</sup>. 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 189.5m<sup>2</sup> 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										

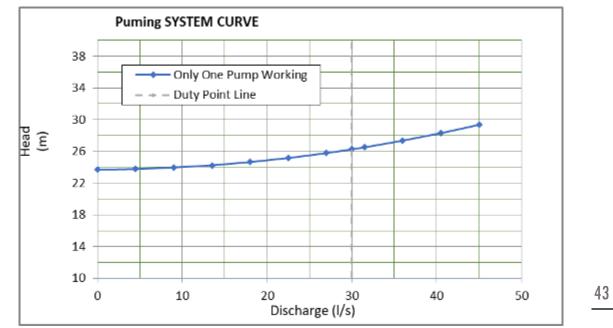
Table 16: Head loss through the water piping between clear water tank and Back wash tank

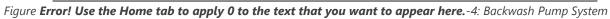
The following system head curves show: -Only one duty pump will working during normal filling of backwash tank.

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 <sup>st</sup> 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

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# 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 <sup>3</sup> /d)	Required Storage Capacity(m <sup>3</sup> )	Designed Tank Capacity (m <sup>3</sup> )
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 275m<sup>3</sup> 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 225m<sup>3</sup> 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 125m<sup>3</sup> 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 200m<sup>3</sup> 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 70m<sup>3</sup> and 35m<sup>3</sup>. 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 125m<sup>3</sup> ground reinforced concrete tank an elevated steel tank of capacity 100m<sup>3</sup>. 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 800m<sup>3</sup> and 50m<sup>3</sup>. 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 300m<sup>3</sup>, 300m<sup>3</sup> and 75m<sup>3</sup>. 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

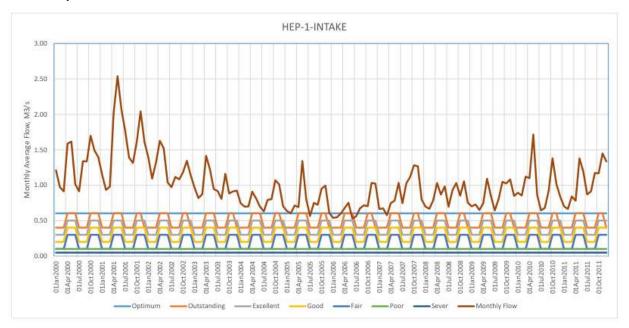
The Tennant Method developed by Tennant (1976) is the most common hydrological method applied worldwide and has been used by at least 25 countries (Tharme 2003). This method is based on empirical relationship between the specified percent of the MAR (Mean Annual Runoff) and the prescribed condition of 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 <sup>3</sup>	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 <sup>4</sup>	<10%	<10%

Table 30: Tennant Method 197	76	
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The MAR of Nyamugasani River at HEP-1-Intake is estimate to be 1.005 m<sup>3</sup>/s (or 1005 l/s or 86,832 m<sup>3</sup>/day). The MAR of the incremental catchment between HEP-1 intake and WS Intake is 0.055 m<sup>3</sup>/s (or 55 l/s or 4,752 m<sup>3</sup>/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)

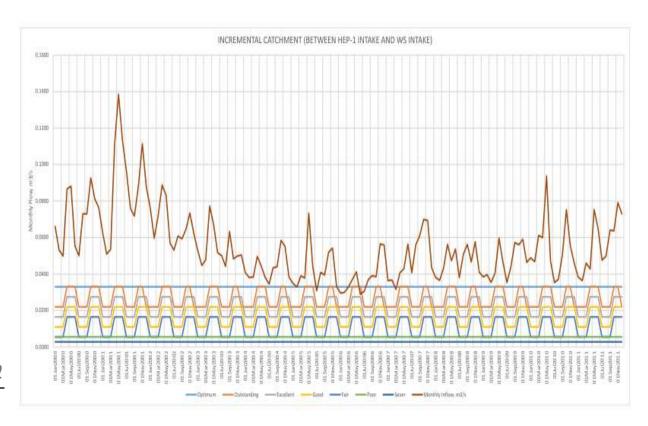


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-6: E-Flow Recommendation at WS Intake Incremental Catchment

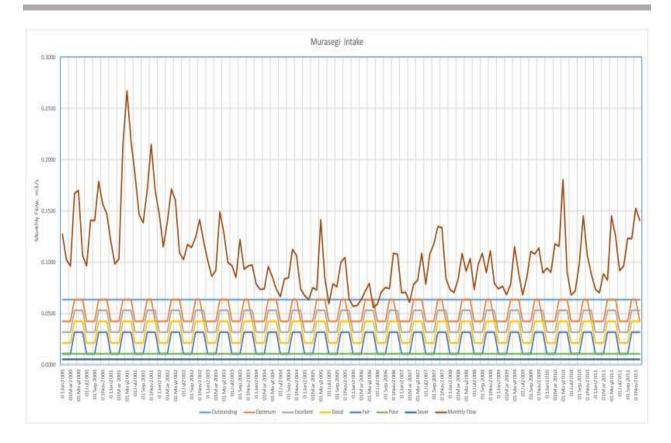


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-7: E-Flow Recommendation at Nyamuruseghe (Murasegi) Intake (Tennant Method)

#### 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

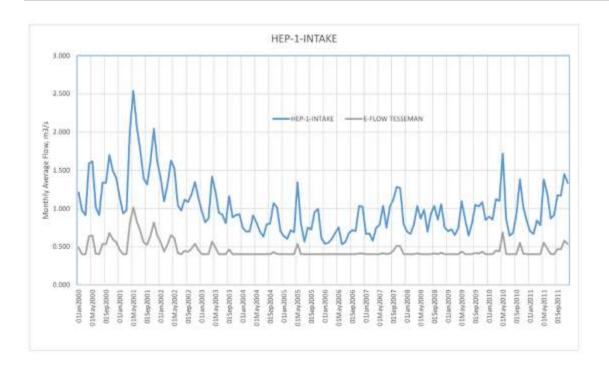
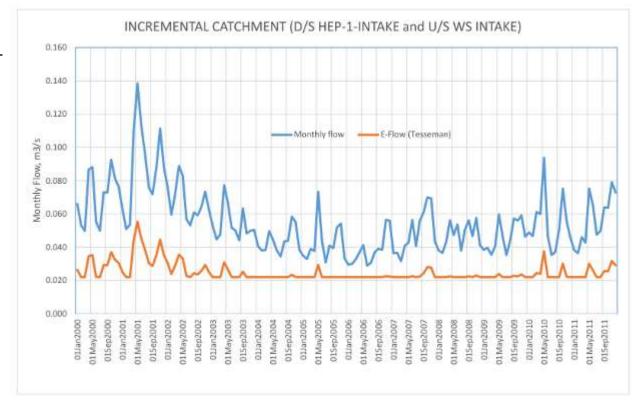
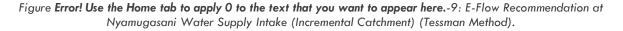


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-8: E-Flow Recommendation at HEP-1 Intake (Tessman Method)



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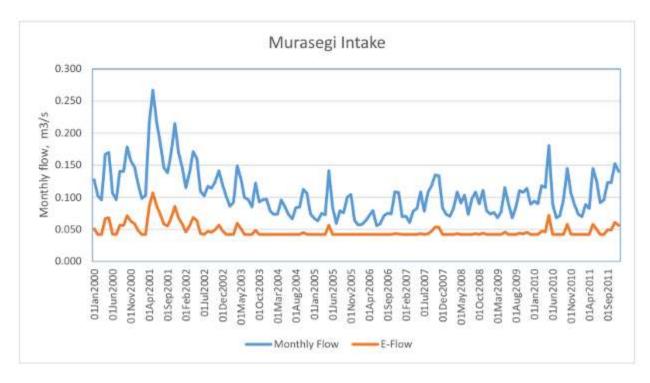


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-10: E-Flow Recommendation at Nyamuruseghe (Murasegi) Intake (Tessman Method)

#### 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 m<sup>3</sup>/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 m<sup>3</sup>/day which is lower than the 1-day Q95 flow estimated at 3,862 m<sup>3</sup>/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.

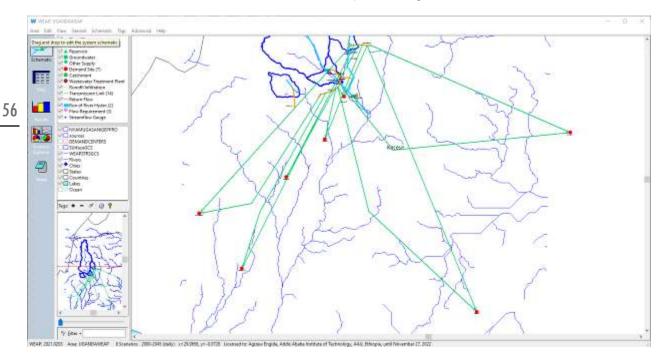


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-11: WEAP Model (Supply and Demand Analysis)

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)
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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.

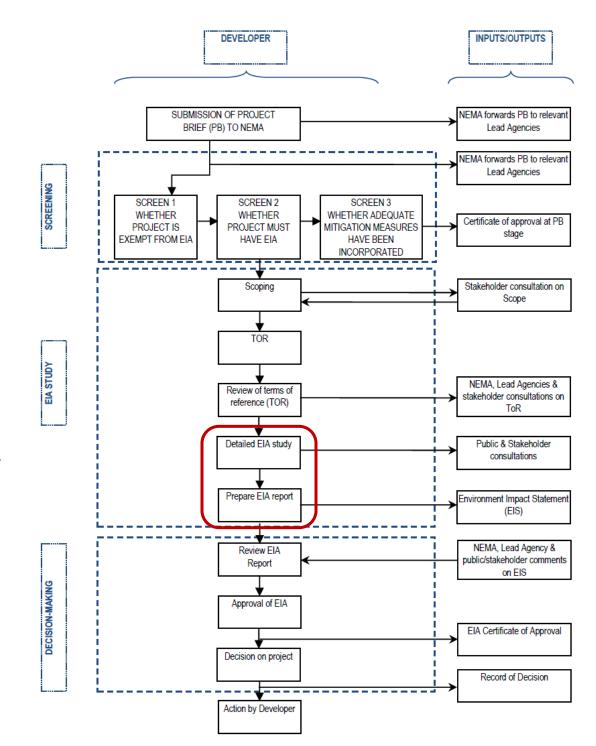


Figure Error! Use the Home tab to apply 0 to the text that you want to appear here.-12: ESIA process that will be adopted as provided for under the Laws of Uganda

#### 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<sub>MAX</sub> and LA<sub>MIN</sub> 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<sub>2.5</sub> 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 (O<sub>2</sub>), 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 7<sup>th</sup> 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 <sup>0</sup> 55'46.223''E	29 <sup>0</sup> 55'46.679''E	29 <sup>0</sup> 55'45.336''E
Description	Narrow and shallow stream of clear running water about 0.35m deep and 4m width ( <b>Plate1</b> ). 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. <b>Substrate</b> : pebbles
	<b>Substrate</b> : boulders and pebbles	Substrate: pebbles	
River Nyamuga	sani		•
GPS	00º09'02.386''N	00º09'00.210''N	00º08'58.328''N
coordinates	29 <sup>0</sup> 55'34.877''E	29 <sup>0</sup> 55'35.172''E	29 <sup>0</sup> 55'37.729''E
Description	River width approx. 6m. <b>Substrate</b> : 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<sup>-2</sup>). 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	<ul> <li>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.</li> <li>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.</li> </ul>
Nature	<ul><li>Positive</li><li>Negative</li></ul>
Duration	<ul> <li>The lifetime of the impact; this is measured in the context of the life-time of the proposed development. Whether the Impact will be:</li> <li>Intermittent – not occurring at all times.</li> <li>Temporary-only for a short period.</li> <li>Short term - the impact will either disappear with mitigation or will be mitigated</li> </ul>

#### Table 40: Impact Assessment and Evaluation

r		-
	through natural process in a span shorter than the construction phase.	
	<ul> <li>Medium term - the impact will last for the period of the construction phase,</li> </ul>	
	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.	
	<ul> <li>Moderate - where the affected environment is altered, however, function and</li> </ul>	
	process continue, albeit in a modified manner.	
	<ul> <li>High - where function or process of the environment is seriously altered and</li> </ul>	
	disturbed to the extent where it temporarily or permanently ceases.	
Spatial Extent	<ul> <li>The physical and spatial size of the impact; a description of whether the impact</li> </ul>	1
	would occur on a scale described as follows:	
	<ul> <li>Site - whether the impact will be within limited locale of the project site / study area</li> </ul>	
	affecting the whole or measurable portion of the area.	
	<ul> <li>Local - whether the impact will affect the environment or communities along the</li> </ul>	
	border of the study area or in the extended area adjacent to the site or perhaps	
	outside the immediate environment.	
	<ul> <li>Regional - whether the impact extends beyond the study area affecting areas on a</li> </ul>	7
	regional scale.	-
<ul> <li>Likelihood</li> </ul>	<ul> <li>The probability or likelihood of the impacts actually occurring. The impact may occur</li> </ul>	-
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.	
	<ul> <li>Probable - the impact could possibly happen, and mitigation planning should be undertaken</li> </ul>	1
	undertaken.	1
	<ul> <li>Highly probable - it is most likely that the impact will occur at some or other stage</li> </ul>	
	of the development.	1
	<ul> <li>Certain - the impact will take place regardless of any prevention plans, and only</li> </ul>	
	mitigatory actions can be relied on to contain the effect.	-
Sensitivity	<ul> <li>Degree of change effected on natural processes or people's livelihoods; the</li> </ul>	
	sensitivity of the receptor of the impact to change	
	<ul> <li>Very low</li> </ul>	
	Low	
	<ul> <li>Moderate</li> </ul>	
	<ul> <li>High</li> </ul>	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**

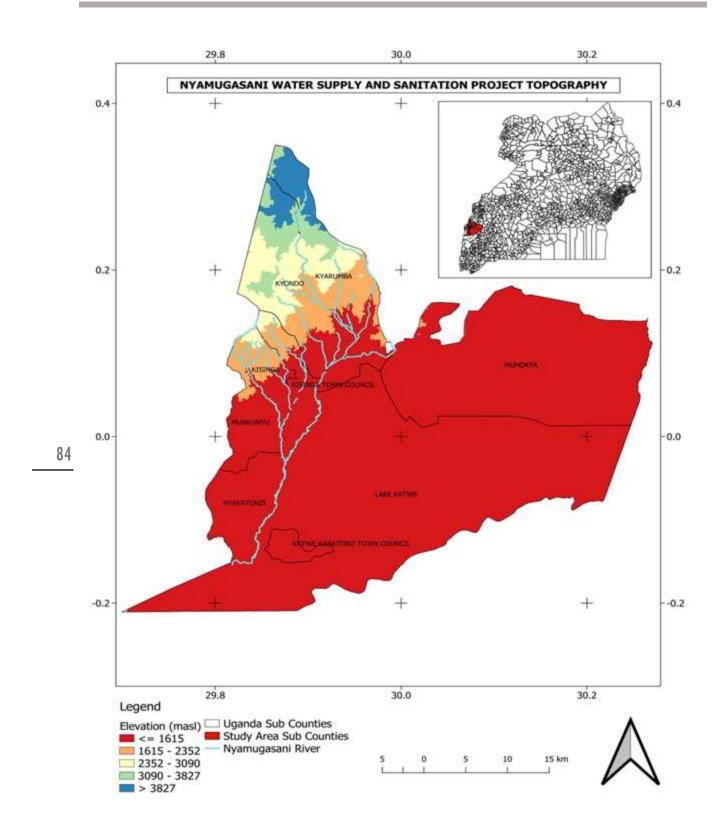
# 5.1 Physical Environment

#### 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



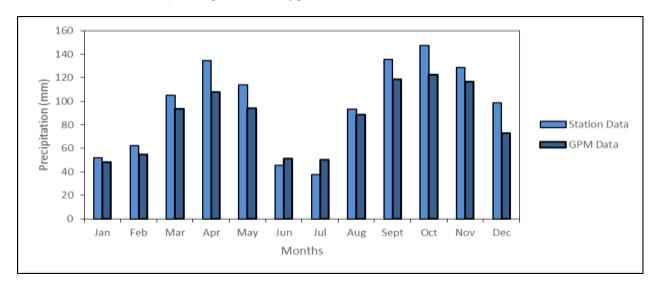
# Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-15: Map of the Study Area Topography

# 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.

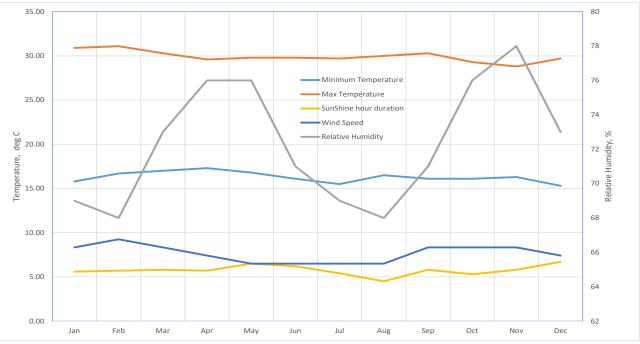


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-16: Comparison of data measured at station and GPM data (monthly rainfall, R. Nyamugasani WSC)

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.

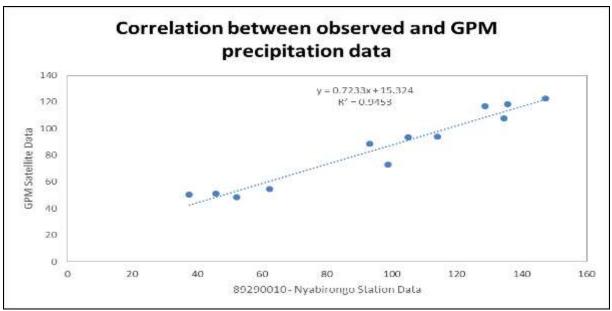


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-18: Correlation between rainfall measured at station and rainfall from GPM datasets.

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.

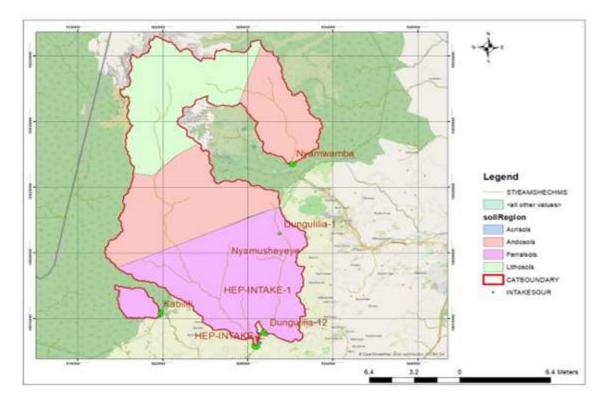
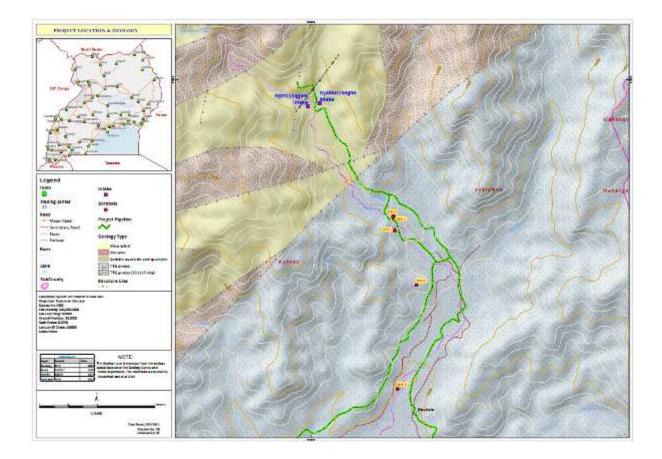


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-19: Soils Map of the project area (Source HWSD, FAO)



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



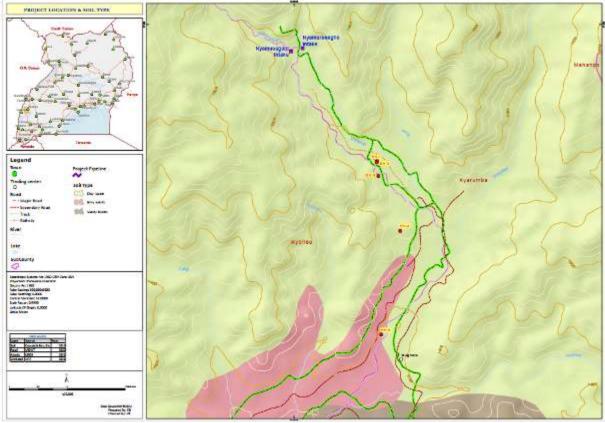


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-20: Map showing the Geology of the Project area of Nyamugasani

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

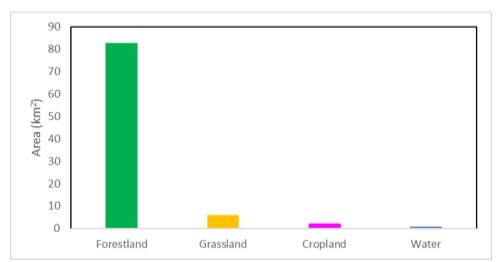
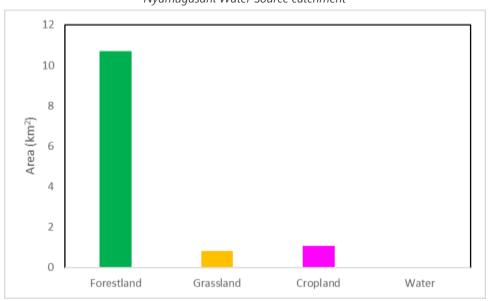


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-22: Land use Distribution in R. Nyamugasani Water Source catchment



*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

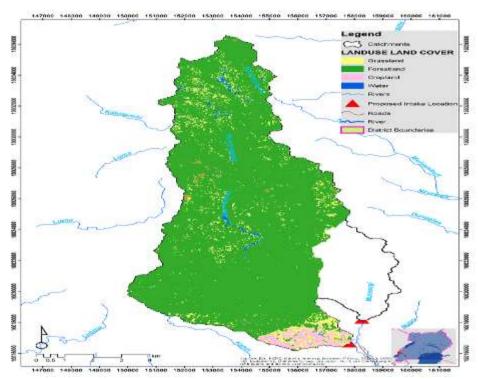


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-24: Land use Landcover map for R. Nyamugasani WSC



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 <sub>3</sub> )	-	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 <sub>min</sub> dB	LA <sub>max</sub> dB	LA <sub>Eq</sub> 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	<b>O</b> 2 (%)	CO (ppm)	VOC (ppm)	ΡΜ <sub>2.5</sub> (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, NO<sub>2</sub>, CO, H<sub>2</sub>S, Cl<sub>2</sub>, ClO<sub>2</sub> and SO<sub>2</sub> 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 KM<sup>2</sup> lying inside Nyamugasani catchment out of the 995 KM<sup>2</sup> 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 KM<sup>2</sup> lying inside the sub catchment and Queen Elizabeth National Park with a total area of 27.25 KM<sup>2</sup> 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).

**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*), 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).

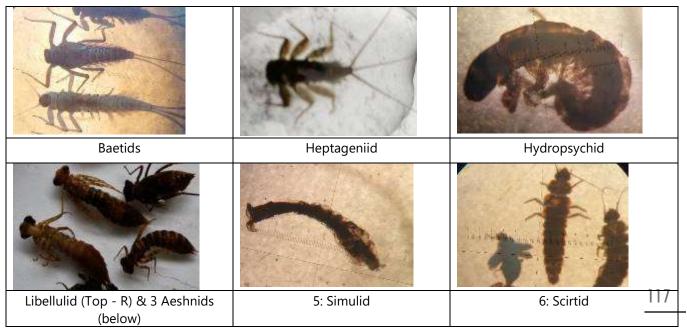


Plate 18: Some of the benthic macroinvertebrate taxa recorded in R. Nyamuruseghe and Nyamugasani area, November 2022

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  $\ge 2.5$  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 1,723km<sup>2</sup> 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 WHO<sup>5</sup>, 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

<sup>&</sup>lt;sup>5</sup> 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	<sup>·</sup> 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 <sup>2</sup>				
		(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.

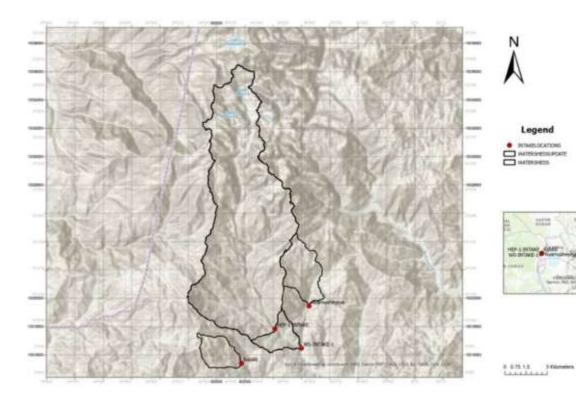


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-26: Location of Intakes and their catchments

# 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.

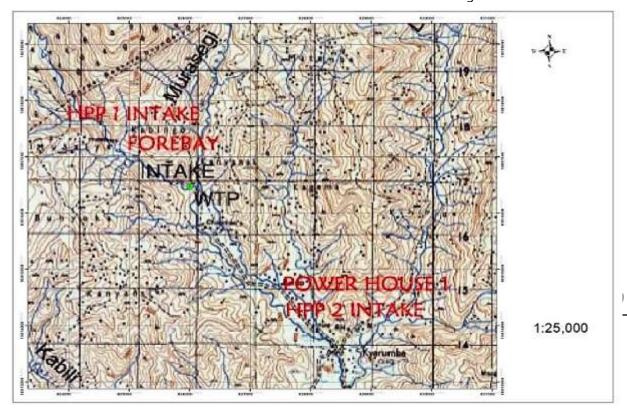


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-27: Locations of Existing HPP Intakes

# 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 km<sup>2</sup>. 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 km<sup>2</sup>.

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.

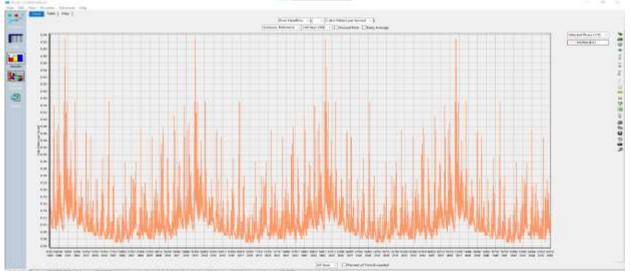


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-28: Synthetic Daily Flow of Nyamuruseqhe Flow, m<sup>3</sup>/s

Hence, the 1-day  $Q_{95}$  flow is estimated to be 3862 m<sup>3</sup>/day (upper limit estimate of 5091 m<sup>3</sup>/day and a lower of the estimate is 3501 m<sup>3</sup>/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 km<sup>2</sup> 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.

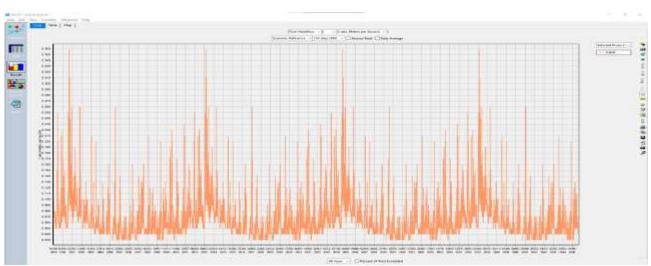


Figure **Error! Use the Home tab to apply 0 to the text that you want to appear here.**-29: Synthetic Daily Flow of Kabiri Flow, m3/s

A preliminary estimate shows that the 1-day  $Q_{95}$  dry season flow of 2200 m<sup>3</sup>/day (with a lower limit of estimate at 1994 m<sup>3</sup>/day and an upper limit of estimate at 2900 m<sup>3</sup>/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	<ul> <li>To ensure that the Banks Operational Safeguards have been observed and implemented as appropriate.</li> <li>Support the project with funding</li> <li>Support Project Implementation</li> </ul>
National Level Stakeholders	Ministry of Lands Housing and Urban Development (MoLHUD)	<ul> <li>Approves all reports presented by the consultant regarding valuation</li> </ul>
	Ministry of Gender, Labour and Social Development (MoGLSD)	<ul> <li>Protection of human rights and vulnerable social groups.</li> <li>Occupational and community health and safety of roads.</li> <li>Approval and monitoring of the social safeguards</li> <li>Approval of permits like workplace permits, OHS</li> </ul>

#### Table 58: Stakeholder Matrix

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

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

#### 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
	<b>311</b> 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		
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		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 9<sup>th</sup> and 10<sup>th</sup> 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	<ul> <li>Elimination of current water shortages.</li> </ul>	
1.	water	<ul> <li>Improvement of water quality.</li> </ul>	
		<ul> <li>Reduce the time spent and distance travelled to fetch water,</li> </ul>	
		which would signify an improvement in the general living	
		conditions of the people.	
		<ul> <li>Improvements in public and household sanitation.</li> </ul>	
		<ul> <li>Awareness of personal hygiene.</li> </ul>	
		<ul> <li>Overall improved health conditions for the benefici population.</li> </ul>	
		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
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	incomes and revenues	<ul> <li>employment opportunities for local people and generate direct income benefits to local households.</li> <li>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.</li> </ul>
3.	Income to material/ equipment suppliers and contractors	<ul> <li>Earth materials needed for construction, for example, aggregate (stones and sand) will be obtained from quarry operations.</li> <li>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.</li> </ul>
4.	Increased Public Revenue / Taxes	<ul> <li>People who have never worked on such projects would acquire such skills, which they would use to seek employment in future.</li> <li>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.</li> </ul>
5.	Boost to the local Economy	<ul> <li>Provision for direct employment opportunities to the workforce thus contributing towards alleviation of poverty and income generation for the local community;</li> <li>Stimulation of business activities related to contracting works for local entrepreneurs (sub-contractors);</li> <li>Providing trading opportunities for local communities and other small enterprises in the area; 145</li> <li>Providing opportunities for provision of basic and other services for the contractors and immediate community. The project will consider employment of locals.</li> </ul>
6.	Gender Benefits	<ul> <li>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.</li> <li>It will mean more opportunities for girls to attend schools and more time for women to engage in other economically and educational beneficial activities.</li> </ul>
7.	Health Benefits	<ul> <li>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.</li> <li>Loss of productivity resulting from sickness related to water-borne diseases and expenditure on related medical care will therefore reduce.</li> </ul>
8.	Improved service delivery	<ul> <li>The proposed project would result in bringing improved water and sanitation services closer to the people.</li> </ul>
9.	Eradication of poverty and improved livelihoods of the local people	<ul> <li>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.</li> <li>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</li> </ul>

		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	<ul> <li>Implementation of catchment and water source protection measures would ensure reliability to the water source.</li> </ul>
12.	Develop a global partnership for development	<ul> <li>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.</li> </ul>
13.	Increase in investment in the area standard of living	<ul> <li>MWE will invest heavily in the construction of the water supply systems which would involve use of locally available materials.</li> <li>The business community could take advantage of the proposed development to establish businesses that would otherwise be impossible without safe piped water.</li> </ul>

# 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
<b>Hand</b> (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.

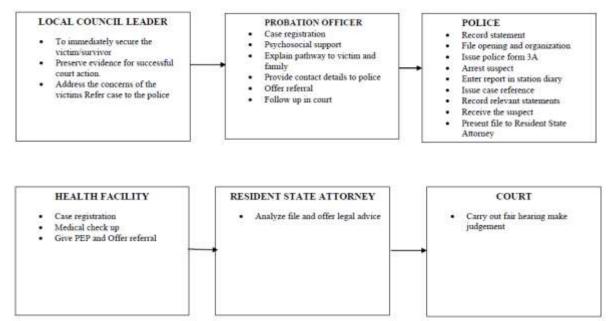
*Impact significance:* The **intensity** of impact is assessed as **Medium** and **sensitivity** of the receptors as **Medium** given that there will be a few vehicles at the beginning of the project and the community will get used as the number increases in addition to the fact that the road network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

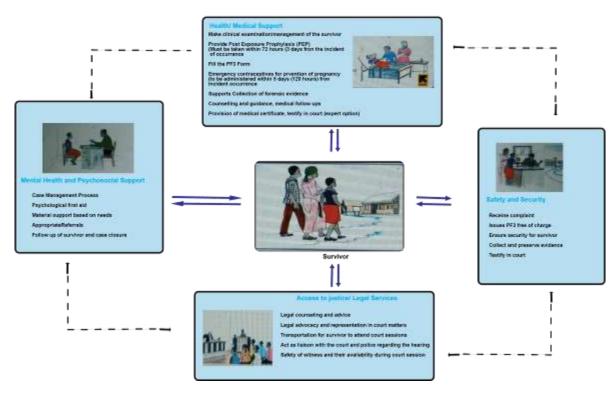
#### **Mitigation strategies**

- 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			
<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 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			
		1	2	3	4			
	Very low	1	2	3	4			
ಕ	1	Negligible	Minor	Minor	Minor			
impact	Low	2	4	6	8			
Ē	2	Minor	Minor	Moderate	Moderate			
đ	Medium	3	6	9	12			
ity ity	3	Minor	Moderate	Moderate	Major			
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			
<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

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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
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
t	1	Negligible	Minor	Minor	Minor
of impact	Low	2	4	6	8
.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
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

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 (CO<sub>2</sub>) and methane (CH<sub>4</sub>) 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. CH<sub>4</sub> has a GWP factor of 21 – that is, an emission of 1 kg of methane (CH<sub>4</sub>) is defined as having 21 times the GWP of an emission of 1 kg of CO<sub>2</sub>. 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			
<b>.</b>	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**

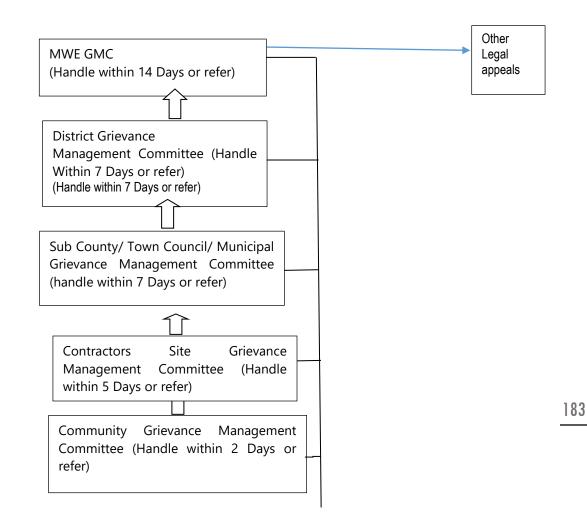
182 If the Clerk of Works cannot solve the grievance, he will refer it to MWE (and contractor) through the Supervising Engineer. If MWE (and Contractor) or cannot solve the grievance, then it can be referred to the local government structures ranging from LC I to LC V or the Courts of Law.

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
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#### 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.

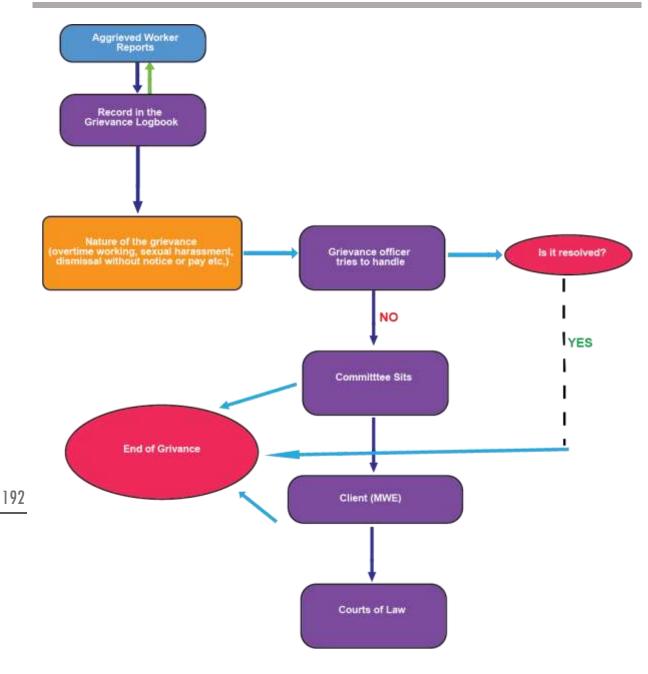
#### Step 6: Appealing to MWE against the Verdict of the Site GMC

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	<ul> <li>Noise and dust levels mitigation and monitoring</li> </ul>
	Management Plan	<ul> <li>Pollution prevention and protection measures</li> </ul>
		<ul> <li>✓ Assessment and measures to prevent pollutants from entering the river</li> </ul>
		<ul> <li>Waste Management plan; including: Waste hierarchy (i.e. reduction at source, reuse, recycling, energy recovery,</li> </ul>

Table 62: Plans to be considered in the project implementation

		responsible disposal) and green procurement;
		<ul> <li>✓ Monitoring and reporting.</li> <li>✓ Resource Management including: Objectives, targets, processes in place for resource efficiency</li> <li>✓ Water abstraction, conservation, discharge measures</li> <li>✓ Energy and fuel management</li> </ul>
2.	Occupational Health & Safety Management Plan	<ul> <li>Summary of OHS hazards and risks identification and assessment</li> <li>High-risk area identification and management</li> <li>Occupational Health and Safety Communication and Training Programme</li> <li>PPE Use Manual</li> <li>Risk Assessment</li> <li>Hazard, Risk and Impact Assessment Procedure</li> <li>Accident Investigation and Reporting, Near Miss Procedure</li> </ul>
3.	Emergency Response Plan	<ul> <li>✓ Emergency Evacuation Procedure</li> <li>✓ Emergency response in event of accidents, earthquake, extreme weather, fires, animal drowning etc</li> <li>✓ Emergency response equipment/materials requirements</li> <li>✓ Procedure for staff and subcontractors to report any incidents and the investigation, remediation and preventive actions taken.</li> <li>✓ Regular emergency response training</li> <li>✓ Emergency Communication Procedure including with local communities and authorities</li> </ul>
4.	Auxiliary Sites and Associated Facilities Management Plan	<ul> <li>✓ EHS screening of associated facilities like parking yard and dumping sites</li> <li>✓ Verification of compliance for third-party facilities</li> <li>✓ Associated facilities EHS assurance</li> </ul>
5.	Cultural Heritage Management Plan	<ul> <li>✓ Cultural heritage supervision and management during inundation</li> <li>✓ Chance find management and response</li> <li>✓ Interface and coordination with relevant authorities</li> <li>✓ Monitoring and reporting of intervention activities to recover and record cultural heritage values</li> </ul>
6.	Human Resource and Labour Force Management Plan	<ul> <li>Mobilization of the key staff</li> <li>Training and skill development activities;</li> <li>Employee grievance mechanism; and</li> <li>Monitoring and reporting</li> <li>Preparation of the Local Recruitment Procedure to address inter alia the following measures:</li> <li>Information to the local population (e.g. through the Liaison Officers of the Project) about opportunities for employment. The recruitment will be monitored and reported by Contractors' HR Department and Sociologist.</li> <li>Maximize use of local subcontractors and suppliers. Information about work opportunities will be made available to the local population.</li> <li>Workers' community interaction behavioral code of conduct</li> <li>Key Organization Plan, Recruitment Procedure, Working Conditions, Disciplinary Procedure, Training Procedure, staff contracts, benefits</li> </ul>
7.	Child Protection Management Plan	<ul> <li>A child protection policy and commitment</li> <li>Code of conducts for workers and special code for drivers, operators and security guards</li> <li>Sensitization of workers and community</li> <li>Identification of any violations</li> </ul>

		<ul> <li>Clear protocols for management of any child rights abuse attributed to the project</li> </ul>
		<ul> <li>Tracking and reporting of child rights abuses</li> </ul>
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
		<ul> <li>Sensitization of workers and community on GBV</li> </ul>
		✓ Identification of any violations
		<ul> <li>✓ Clear protocols for management of any GBV cases attributed to the project</li> </ul>
		<ul> <li>Tracking and reporting of child rights abuses</li> </ul>
9.	Stakeholder Engagement Management Plan	✓ Overarching framework for all stakeholder engagement- related activities
		✓ Stakeholder identification;
		<ul> <li>Stakeholder engagement program</li> </ul>
		<ul> <li>Monitoring and reporting</li> </ul>
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
		<ul> <li>Risk management strategies established and implemented</li> </ul>
		<ul> <li>Risk tracking and reporting</li> </ul>
12.	Reporting Plan	✓ Nature of reports (daily, weekly, monthly, quarterly)
		✓ E&S Audit Reports
		<ul> <li>Reviews and validation by Supervising Consultant</li> </ul>
		<ul> <li>Approvals and validation by Client</li> </ul>
		<ul> <li>Monitoring checklists</li> </ul>
		✓ Reporting templates
13.	HIV management Plan	<ul> <li>✓ Increase community awareness about the health risks associated with HIV/AIDS;</li> </ul>
		<ul> <li>Complement existing HIV/AIDS programs in the project area; and</li> </ul>
		<ul> <li>Raise the profile and dangers of other STDs associated with risky sexual behavior.</li> </ul>
	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.

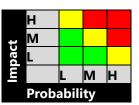
#### **Risk Monitoring, Controlling, And Reporting**

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	<ul> <li>✓ Orienting all construction workers on safe work practices and ensure that they are adhered to</li> </ul>	Contractor & Supervision Consultant	Ongoing	Routine inspection and maintenance records	Included in Contractor's cost	Daily
CP2	Traffic Disruptions	<ul> <li>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.</li> <li>Using appropriate safety signs during construction (e.g. 'Heavy Trucks Turning', 'Road Diverted', 'Half Road Closed', etc.)</li> </ul>	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	<ul> <li>Minimize vegetation clearance and protect water &amp; soils from pollution</li> <li>Landscaping and re-vegetation after construction</li> <li>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.</li> <li>Unnecessary human presence in the natural habitats and project site will be minimised;</li> <li>Invasive species if observed along the revegetation sites will be removed.</li> <li>Environmental awareness programs for the construction workers, with special focus on threatened species will be conducted.</li> <li>Hunting and poaching of wild life will be strictly prohibited.</li> <li>Prevention and minimization of pollution (e.g. noise, water) through strict implementation of planned pollution control measures will be exercised.</li> </ul>	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	<ul> <li>Topsoil and subsoil will be stockpiled for re-use in backfilling and reinstatement;</li> <li>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;</li> <li>Contractor will avoid use of old equipment or even damaged equipment that is most likely to have oil leakages thus contaminate the soils;</li> <li>The contractor will be required to develop a waste management plan prior to start of construction activities;</li> <li>Contractor will ensure that equipment is properly maintained and fully functional in accordance with the manufacturer's recommendations;</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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</li></ul>	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	<ul> <li>✓ Phasing of the construction works such that the majority of works are undertaken during the dry season to reduce the risk of erosion.</li> <li>✓ 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.</li> </ul>	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	<ul> <li>The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reuse and recycle.</li> <li>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.</li> <li>Waste transportation vehicles will be covered to avoid spillage or waste getting blown off during haulage.</li> <li>Construction waste shall not be left in stockpiles along roads, but removed and reused or disposed of on a regular basis.</li> <li>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.</li> <li>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</li> </ul>	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	<ul> <li>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.</li> <li>Orient all construction workers on safe work practices and ensure that they are adhered to.</li> <li>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</li> <li>Use of PPE for different work environments.</li> <li>Procedure for reporting and/or responding to incidents.</li> <li>Emergency evacuation procedure</li> <li>All tasks will be performed by qualified and authorized personnel.</li> </ul>	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	<ul> <li>Sensitization of local residents will be undertaken prior to the start of the construction works.</li> <li>Delivery vehicles will be switched off when not in use so as to minimize the release of fugitive emissions;</li> <li>Contractor's vehicles and machinery will be regularly serviced and maintained to optimum working conditions to minimize potential emissions.</li> <li>Trucks delivering materials will be covered with tarpaulin to reduce the risk of fugitive dust emissions, especially in busy residential and commercial areas;</li> <li>Waste from site to be transported by licensed companies for waste transportation</li> <li>Regularly monitor air quality and noise nuisance and inform timely interventions</li> </ul>	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	<ul> <li>Sensitisation of local residents prior to the start of the construction works. It will be particularly important to:</li> <li>The Contractors on site made aware of, and adhere to, the regulatory noise limits for a construction site</li> <li>Construction workers provided with appropriate PPE such as ear plugs and ear muffs for protection against excessive noise.</li> <li>Construction activities limited to daytime, especially in residential areas to minimize disturbance of residents.</li> <li>Construction works near public institutions such as schools should be harmonized with school programmes to consider works during holidays and weekends.</li> <li>Project machines and vehicles will be turned off when not in use.</li> </ul>	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
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Ref. No	Anticipated Impacts	Mitigation Measures	Responsibility	Monitoring Period	Monitoring Indicators	Cost (UGX)	Frequency
CP10	Water Pollution	<ul> <li>Planning and management of stockpiles to minimize potential for "wash-out" and generation of sediment-laden runoff during rainy seasons.</li> <li>Fuel handling and oil spill measures will be implemented to prevent, control and address spill or leaks.</li> <li>All equipment and vehicle repairs will be carried out under shelter to minimize potential soil and oil pollution during rainy seasons.</li> <li>Regular maintenance of operating machinery to keep it in good working condition, and hence minimize oil and lubricant spills</li> <li>Implement a water source protection plan (WSPP)</li> </ul>	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	<ul> <li>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</li> <li>Workers must be sensitized on proper social behaviour and conduct with regard to community norms prior to starting work;</li> <li>workers should be sensitized to avoid engaging in sexual relations with underage girls and married women;</li> <li>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;</li> <li>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</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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;</li> </ul>	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	<ul> <li>Project implementation will be done in close consultation with the respective utility service companies such as MWE, UMEME and telecommunication companies.</li> <li>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.</li> <li>During construction, the Contractor will have to prepare a work schedule, which will be closely monitored and supervised by MWE.</li> <li>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.</li> </ul>	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	<ul> <li>Prepare and implement the RAP in line with Ugandan laws and the World Bank's ESS5;</li> <li>Engage local communities to provide land voluntarily especially for the distribution lines;</li> <li>Select land requiring minimal or no relocation at all;</li> <li>Use road reserves for pipe works;</li> <li>Provide a fair and prompt compensation to the affected people;</li> <li>Determine the extent of property lost or destroyed and provide fair and prompt compensation to the effected people.</li> <li>Engage spouses / female relatives of land owners especially to consent / witness.</li> </ul>	MWE	Before construction phase kicks off	<ul> <li>Valuation Report approved by Chief Government Valuer;</li> <li>Number of people compensated or resettled;</li> <li>Amount of money paid in compensation;</li> <li>No land related complaints;</li> <li>All PAPs compensated for involuntary land up-take before commencement of construction works.</li> </ul>	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	<ul> <li>✓ Prepare a comprehensive Stakeholder Engagement Plan (SEP);</li> <li>✓ Community liaison activities;</li> <li>✓ Undertake radio talk shows to communicate progress of the project to local stakeholders.</li> </ul>	Contractor(s) /MWE and service providers	Before and during construction	<ul> <li>Number of engagement meetings for each stakeholder category</li> <li>Number of radio shows held.</li> </ul>	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	<ul> <li>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.</li> <li>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.</li> <li>MWE should institute a strong grievance committee so that complaints and dissatisfactions about the resettlement/ compensation process do not unduly delay contractors progressing works.</li> <li>Liaise closely with UNRA regarding any claims to ownership of land within the road reserves.</li> </ul>			<ul> <li>All eligible persons duly compensated as per the laws of Uganda;</li> <li>All utility owners engaged to relocate utilities prior to construction works.</li> <li>Relocation budgets submitted by utility owners and approved by MWE;</li> <li>All utilities relocated before construction works;</li> <li>No. of utilities damaged.</li> </ul>	<ul> <li>RAP Budget provided for eligible PAPs</li> </ul>	Monthly
C15	Conflicts due to influx of immigrant labour	<ul> <li>Prepare local communities psychologically prior to start of construction works.</li> <li>Efforts to be geared toward instilling attitudes of tolerance, support and understanding of labour immigrates by the local communities</li> <li>Sensitize workers on proper social behaviour and conduct with regard to community systems and the acceptable societal norms;</li> <li>Put in place a grievance redress committee or a Public Complaints Desk to receive any complaints about the construction activities;</li> <li>Implement a strict employment code of conduct.</li> </ul>	MWE/ Contractor	Before construction	<ul> <li>No. of grievances received</li> <li>% of grievances resolved</li> <li>Records of sensitization of local communities regarding social issues</li> <li>Number of cases of community fears/complaints handled in relation to cases reported</li> </ul>	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		<ul> <li>Develop a strict employment code of conduct to protect the girl child.</li> <li>Sensitize employees on dangers of molestation of children, especially the girl child.</li> <li>Sensitize the Contractor against child labour and implement the child labour act;</li> <li>Demand birth certificate or any identify that clearly shows the age of a job applicant;</li> <li>Issue each worker with an applicant letter with well spelt out terms of engagement.</li> <li>Monitoring school attendance</li> <li>Sensitization in schools</li> <li>Reporting mechanisms in place such as a whistleblowing system.</li> </ul>	Contractor's Sociologist Resident Engineer MWE	During Construction	<ul> <li>MGLSD approved code of conduct for protection of the girl child at site.</li> <li>Records of sensitization of workers;</li> <li>Number of cases of child abuse lawfully handled in relation to cases reported;</li> <li>Complaints from communities</li> <li>Children working on site</li> </ul>	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	<ul> <li>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;</li> <li>MWE should ensure that social safeguards personnel are recruited as part of the project implementation personnel to supervise contractors and to continuously engage communities;</li> <li>Put GBV reporting mechanisms in place;</li> <li>Community sensitization among men and women.</li> <li>Train women in GBV prevention and reporting.</li> <li>Contractor develops and implements a Gender Action Plan (GAP).</li> </ul>	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	<ul> <li>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.</li> <li>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.</li> </ul>	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	<ul> <li>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.</li> <li>Side rails will be installed along the channel crossings to enhance community safety and minimize the risk of falling into the channels.</li> <li>Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a</li> </ul>	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
		<ul> <li>heavy downpour.</li> <li>✓ 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.</li> </ul>					
OP2	Loss of income from Project- related activities	<ul> <li>All people taken on to work on this Project will be informed about its duration and phasing beforehand, so that they can plan accordingly.</li> <li>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.</li> <li>Unskilled labourers taken on from the local communities surrounding the project area will be kept on for maintenance works of the channel, where possible.</li> <li>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.</li> </ul>	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	<ul> <li>Side rails will be installed along the river crossings to enhance community safety and minimize the risk of falling into the river.</li> <li>Community sensitization to allow proper usage of the crossing points and avoid accidents when crossing after a heavy downpour.</li> <li>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</li> </ul>	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	<ul> <li>✓ The vehicles will be switched off when not in use so as to minimize the release of fugitive emissions.</li> <li>✓ The vehicles and machinery will be regularly serviced and maintained to optimum working conditions to minimize potential emissions.</li> </ul>	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	<ul> <li>The Contractors and workers for operation and maintenance should be especially mindful when carrying out construction near sensitive receptors such as business centres.</li> <li>Maintenance activities will be limited to daytime, especially in residential areas to minimize disturbance of residents.</li> <li>Regular care and maintenance of vehicles and equipment must be undertaken to ensure they run smoothly so as to minimize emissions of noise.</li> <li>Project machines and vehicles will be turned off when not in use</li> </ul>	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	<ul> <li>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.</li> <li>The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reduce, reuse and recycle</li> <li>Waste transportation vehicles will be covered to avoid spillage or waste getting blown off during haulage.</li> </ul>	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	<ul> <li>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.</li> <li>The designed channel corridors need to be protected from encroachment.</li> <li>The channels must be regularly and adequately maintained – including replacement of damaged lining, vegetation clearing, de-silting, garbage/debris removal and dredging.</li> <li>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.</li> </ul>	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	<ul> <li>✓ Prepare a comprehensive Stakeholder Engagement Plan (SEP);</li> <li>✓ Undertake radio talk shows to communicate progress of the project to local stakeholders.</li> <li>✓ Community liaison activities</li> </ul>	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:
	<ul> <li>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).</li> </ul>
	• 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).
	<ul> <li>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</li> <li>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.</li> <li>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.</li> <li>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</li> <li>Consequently, MWE and Bright Technical Services (BTS) signed on the 27<sup>th</sup> January 2022 for preparation of the ESIA, RAP, and SPP for the Project. The Inception Report is expected on 15<sup>th</sup> February 2022 and by March or beginning of April; the Draft ESIA and</li> </ul>
	<ul><li>RAP Report will be out to.</li><li>Another Consultant for Stakeholder Engagement, Environment and Social Risk</li></ul>
	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	<ul> <li>Appreciates what the ministry is doing for the people of Kasese</li> <li>They expect to have enough water and in plenty</li> <li>Community expects jobs during construction</li> <li>Expect a tap every after 10 households</li> <li>The community expects the contractor to set a site clinic where also the local people can access.</li> </ul>
		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				
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#### **REPUBLIC OF UGANDA** MINISTRY OF WATER AND ENVIRONMENT

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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		
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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
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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

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1	KIIZA LANETTE	F	Kasese mynscipul	in Prof.		022732123	s L-Inelle
2	NATUHWERA HAM	m	Loses Alla	See production		Arren	Reson-
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	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
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	TANCY SERVICES FOR ESIA AI	AND NYAMUGASANI GRAV	
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
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							
11							
12						-	

CS CamScamer



**CS** CamScanner

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							



CS CamScanner

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

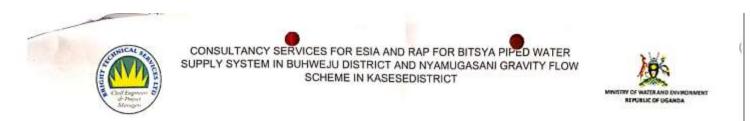


### RECORD OF ATTENDACE

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

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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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CS CamScanner

#### 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



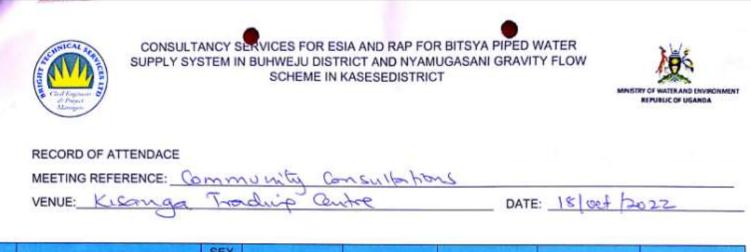
RECORD OF ATTENDACE	20						
MEETING REFERENCE:	Community	Consultations					_
VENUE: MUSASA	2		DATE:	18	10	2022	

#	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			_				
6							
7							
7							the second se
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	
Curr		
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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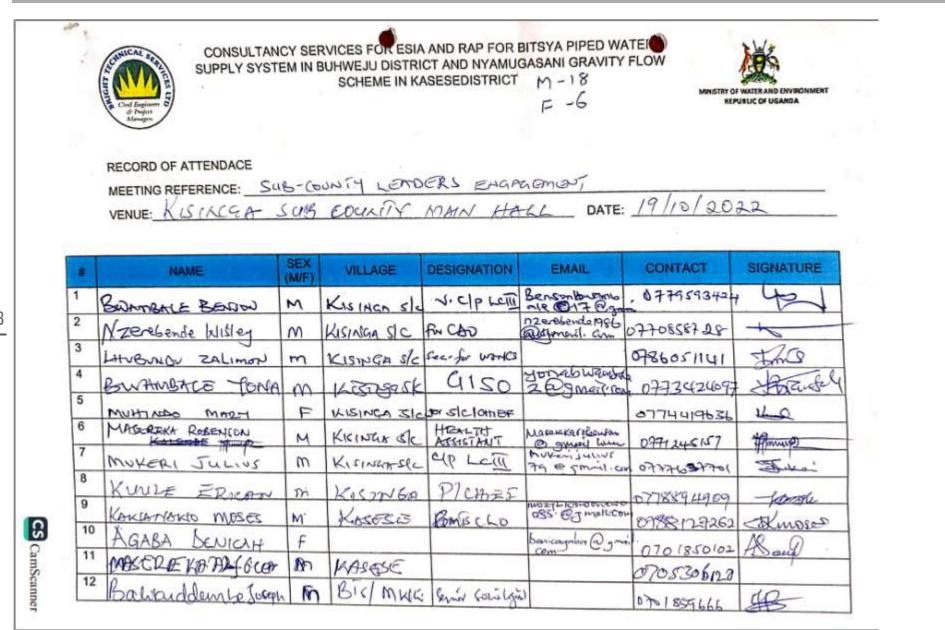
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RECORD OF ATTENDACE

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
10							
11		-					
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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						
			ENCE:			. e			
	VENU	E:					DA	TE:	
-									
#		NAME		SEX (M/F)	VILLAGE	DESIGNATION	EMAIL	CONTACT	SIGNATURE
1	BA	UKUS	2120410	M.	MUNKONY	se appein		077.5677550	anto
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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						
5			-		-					
6				2						
7							3			
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E ANY
Carl Fairmen

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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 ${\rm S}(A)$ 



	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
5							
6							
7							
8							
9							
10							
11							
12							



	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

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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				-			
11							
12	de la						
13					-	11+	1
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

HAICAL VE	
NAP	2
attra	1
Gell Eiginan	5
Contraction of Project	9
A LOL THERE A	Ciril Englands

F-3



# 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
	<sup>8</sup> 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
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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						

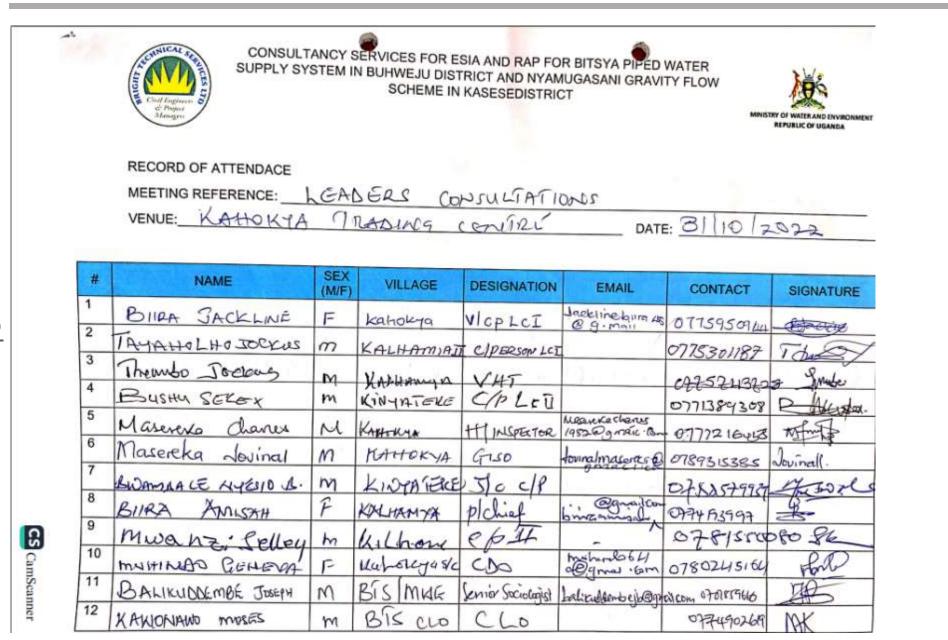




MEETING REFERENCE: Commo NIT	Dow SULT	8-110-5
VENUE: KINYAGEKE TRADING	CENTRE	DATE: 31/10/ 2022
	1	- A -

#	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		

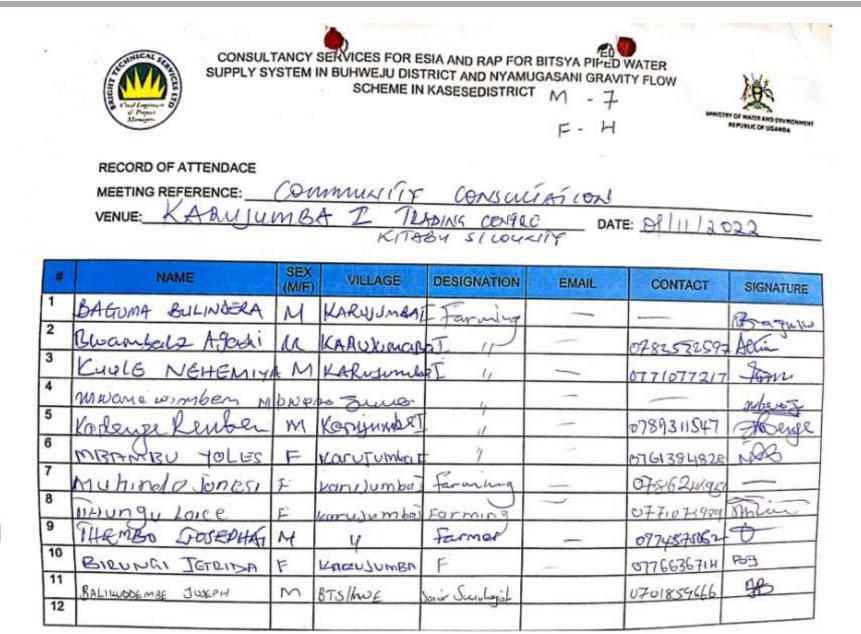


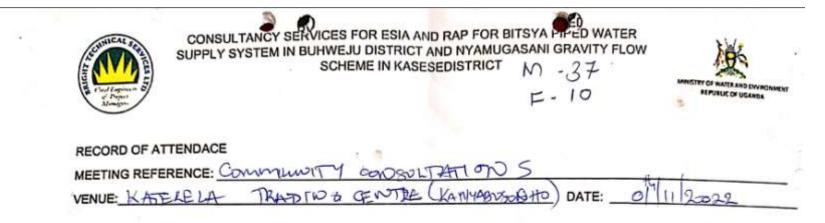


RECORD OF ATTENDACE

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
	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									



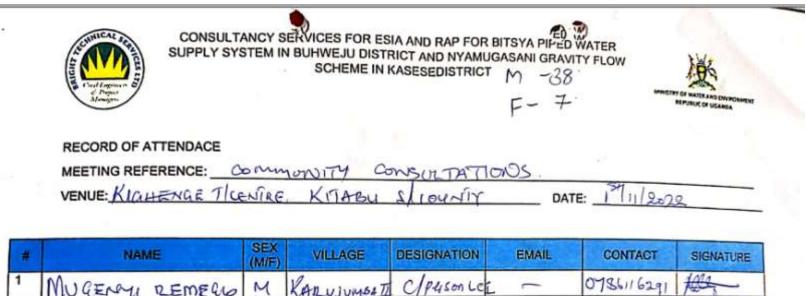


# RECORD OF ATTENDACE

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 <sub>ہ ک</sub> 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
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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
	IN KASESEDISTRICT	梁
d Prod Lagence C		MINISTRY OF WATER AND DEVING NAMEN'S
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	



NUMBER OF STREET

RECORD	OF	ATT	END	ACE

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							
11							
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							
9							
10							
11							





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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 <b>8</b> 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
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#	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'			

CS CamScanner

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REFUELD OF DEALS



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







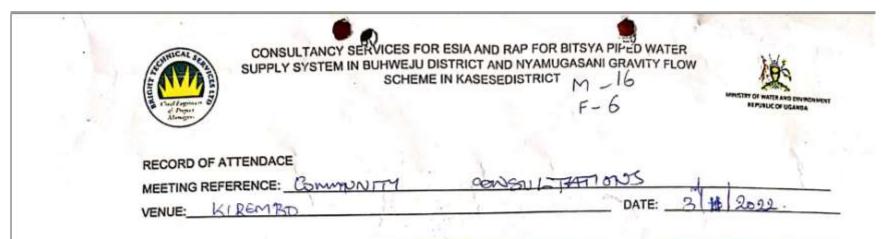
### RECORD OF ATTENDACE

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	

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#	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

0775850128 Nius

0775843781

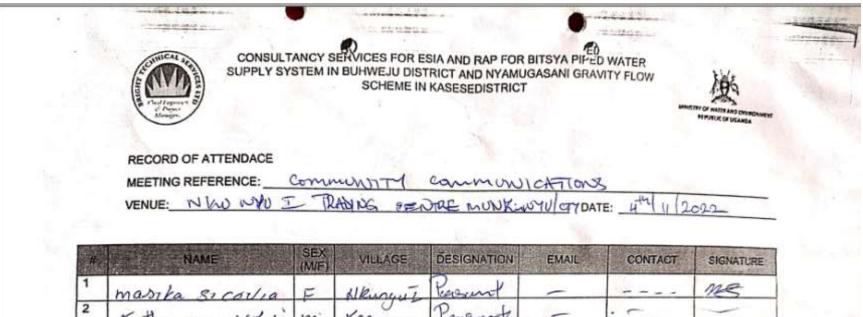


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MEETING REFERENCE:	COMMUNITY	COMMUNICATIONS	
VENUE: NKUNYU I	TRADING CENTRE	MUNKUNTUSTON DATE: Why 2022	

#	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

REPUBLIC OF USANDA





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





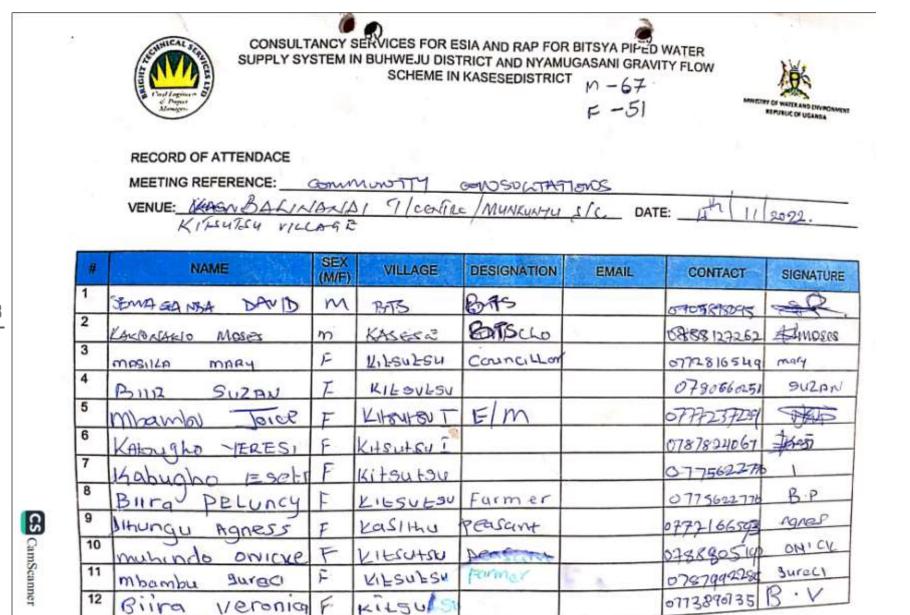
RECORD OF ATTENDACE

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.





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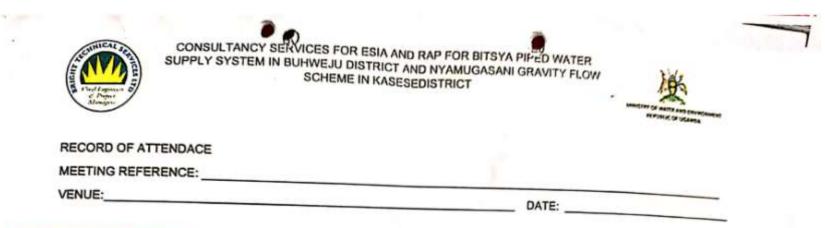
# RECORD OF ATTENDACE

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 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 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							
8							
9							
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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
12							

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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

SAA

diet

DARISH WHITE Edemican

IGBA ZI

M KAmukali

Visere

MURUTI

F

Sereka Laurique M Kamuruli

CS CamScanner

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KARUNGY' LYDIA

CAANZI'B. Viver

Mg EDWARD M

ASINGO EDSON M

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0783028799

0782769831

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.						
11							
12						L	

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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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CS CamScanner

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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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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 <sup>S</sup> 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
	BWAMBALE N-1A310	m	NKUNYE	PERMIT		07-97-63:22	NBWAMAAL
	Baluk maghalhaz		NKLNYTI	percent !		075926100	
1	BIRA VICK-	F	1415พราบ	PEZANET		077800593	BIRRA VICKY
	MULELYA DOVING	m	Vargam prese	ic Leader	15	077878224	he fla
	Baita charles	M	Kitsutsu ]	CIPICI		C777297900	Bato
	KASA IJA JOSEPH	m	NKimp 1	PEASANI	_	6785635218	Arpice
-	Buran bale steven	m	Kitsutsu	Peasani		07895451	A Stellen
)	Apulli borothy Blice		NKuryuII	Peasard		0785168577	bolicenau
1	Markware Richard	m	KITENTERI	P		0773594833	M.K
	IT A WIND Forchard		HKUNSYLI II	in 2)		0780512158	minute pe

	SUPPLY SYS	TEM IN	I BUHWEJU DISTF SCHEME IN P	RICT AND NYAMU KASESEDISTRICT		Master	DI VALITAANS INVIDONI Invisio DI USANSA
	RECORD OF ATTENDACE						
	MEETING REFERENCE:						
	VENUE:	, Al	- had		DAT	Et	
C.T.T		SEX		Brown Br			
#	NAME	(M/F)	VILLAGE	DESIGNATION	EMAIL	CONTACT O	SENATURE
	KAPAMBA STEPHEN	M	NKUMUDI	pesant		0788227384	X
	BALUKU PETER	M	NKUMUTI	perant			RTH
	KULE JOSEPHATS YAYIAM	nM	KITSUTSUI	× 1		078737920	\$
	BALVEN IRAYO	m	KITSUTSUT			0770 155444	LB
5		M	NKUNYUI			0779993331	Burn Bal
5	BUAMBALE NASON	and a state of the	KITSUTSUT	Farmer		0787121671	Fanaha
7	BWAMBALE FAWAHA	m	121 TSUTSUE	pesant			Brian
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

				a	Minta	PE OF WATER AN BERDADINENT
RECORD OF ATTENDACE						
VENÙE:	-			DATI	á	
NAME	SEX (M/F)	VILLAGE	DESIGNATION	SMAIL ()	CONTACT	SIGNATOR
NINSIMA PENINA	F	KEMANGO	PESANT		0789204888	Affents.
A SASIO KABUTOBER	m	KACUGIRO	PESMIT		0783498362	- I down
BURA MAGAET KUSEMERCE	F	Kemanigo	FARMER	24	0775892235	Bim
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	
Mugisa chorles R	lice	NKUMU			07726692	47
THEMBO ADREW	m	NRUNKUD	PEASIENT		6779937460	the state of the s
Mbambre VALER	INT	NKUNYAII	peasent			RHI
Balikuddembe Juseph	M	BISIMUE	Senoir Sociatorists		070.185966	HB -

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



RECORD OF ATTENDACE

MEETING REFERENCE:

VENUE:\_\_\_

DATE:

MINISTRY OF YACTA AND INVIRGANCEST APPUNIS OF USANDA

#	C NAME	SEX (M/E)	VILLAGE	DESIGNATION	CONTACT	SIGNATURE
1	THEMBO WILSON	m	Kaugemborg	Peasant	875274344	State State
2	BALUL Steph	m		ne mulimi	78223437	
	MAANJI Solomon	m	V 1	R AULINI	07856868	( marken and a marken and
	KULE JOHN	M	KACUNGIDO	a subject to be a subject to b	078292488	
	MUHWDO JULIUS	m	KANJAMPARA I	PEASENT		ton.
-	KAMBERE MUSA	M	KACUAGIRD	PEASENT		
-	BALLUCU JOCKIM	m	MIKUMYUTT	PEASANT	077584383	
	THEM DO PASCO		MIKONYUF	PENCENT		and the set of a
0	Kabaghuma tulu	s me	marcy NKingut	: preasent	0775490234	Tre
1	Masika Mary	F	NKunyut	P-Casent .	077774300	Mam
2	MPAKE NAOME		NKUNYNI	ור ינ	0772830328	mpaka_
_	Masereka Bruin	m	NKUNYVI	pealent	0789731990	- 0 - 0
3	Kisembo Jayae Wagil	tha F	Katosenda	Treacher	0774282751	gge-
	U.S.	2				5

	The second		N BUHWEJU DIST SCHEME IN	KASESEDISTRIC	T		ATT CE MATERANS (NARCHITER
	RECORD OF ATTENDACE						
	MEETING REFERENCE:	_			DAT	E:	
#	NAME	SEX (M/F)	VILLAGE	DESIGNATION	EMAIL .	CONTACT	SIGNATURE
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
6	BWAMBALE JOHN	M	KANYAMAARA	E PEASANT	-	0774344	D7 Mitt
7	LHUSENGE IVAN	M	Karynmpar	AT.C.		0774954397	Hurrage
8	THEMBO WILLON KINE			PEASHNT	1	0777295470	
9	MUHARABY YOSOFU	m	KANYAMPHART	C PEASANT	-	07733246	1 YOSOFU
10	THEMBO OBED	m	KALMAMPARA	TIC ABASANIT	-	077281570	Statement of the local division of the local
11				FRIC PEASAN	мт. —	07755576	oy Bring
12	THUNGU AZIDA	F	KANYAMATR	AT.C		-	A2109





## RECORD OF ATTENDACE

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MEETING REFERENCE:

VENUE:

DATE:

#	NAME	SEX (M/F)	VILLAGE	DESIGNATION	· EMAIL	CONTACT	SIGNATURE
Carlos and	KAWEMBE SELEVESTT	M	KATSUNTAIRU			6774240471	+ Amper get
-	NWENTIN PRUTAZIO	N	KEMAN TO	PARMER	¢	0783017624	E Non
3	MABEBE NO204HERA	30	KEMANZO		#	077455710	6. MADELLE
4	MALWAYA FIDELI	M	KEMANGO		1		MARWAYA
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
¢10	MUHINOU CHARLES B	M	KEMANGO			571238225	A 4 A 4 A A
11		M	KATSUNGIRO			5755868513 6777057024	
12	MBUSA BRATTIM	M	NKUNYUI			0/1/05/024	19 GENILL



# 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 <sup>2*</sup>	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 <sup>2*</sup>	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

En

int REF. NO.

Tel:+2558313315111 / 71

NAL SERV

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 <sup>2+</sup>	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

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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 <sub>3</sub> (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.

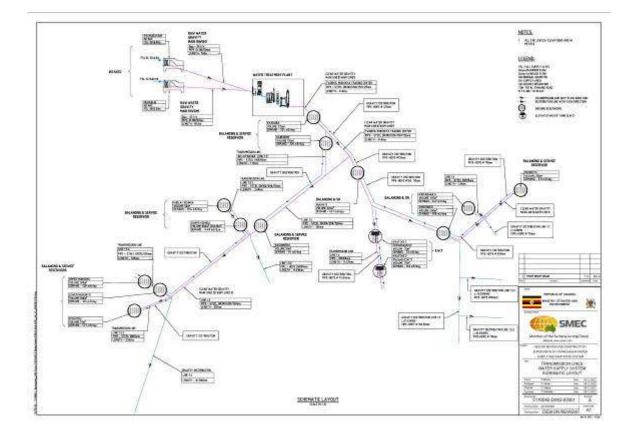
#### **Internal Reporting**

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 13<sup>th</sup> October 2022 to November 18<sup>th</sup> 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
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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