



**THE REPUBLIC OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT
DIRECTORATE OF WATER RESOURCES MANAGEMENT**

**INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT
(IWMDP)**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR THE
PROPOSED IMPLEMENTATION OF EMERGENCY MAINTENANCE OF RIVER
NYAMWAMBA FOR FLOOD MITIGATION AGAINST DAMAGE OF CRITICAL
INFRASTRUCTURE AND LOSS OF LIVELIHOODS IN KASESE DISTRICT**

MAY 2022

CERTIFICATION

We the undersigned certify that this ESMP for the proposed emergency maintenance of River Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods in Kasese District was conducted under our direction, supervision and based on the Terms of Reference approved by NEMA. We hereby certify that the particulars given in this ESMP are correct and true to the best of our Knowledge

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Developers Obligation

I certify that I have read and understood the contents of this project brief for the proposed emergency maintenance of River Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods, Kasese District. I agree to undertake all the recommended mitigation measures and all aspects of monitoring in order to protect the environment.

Permanent Secretary

Ministry of Water and Environment

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List of Acronyms and Abbreviations

ADB	African Development Bank
AIDS	Acquired Immune Deficiency Syndrome
AOI	Area of Influence
DDP	District Development Plan
DWRM	Directorate of Water Resource Management
EA	Environmental Audit
EAP	Environmental Action Plan
EIA	Environment Impact Assessment
EIS	Environmental Impact Statement
ESIA	Environment and Social Impact Assessment
ESMMP	Environment & Social Monitoring and Management Plan
ESMP	Environment & Social Management Plan
GIS	Geographical Information Systems
GoU	Government of Uganda
GPS	Global Positioning System
HIV	Human immunodeficiency virus
LC	Local council
LG	Local Government
MWE	Ministry of Water and Environment
NDP	National Development Plan
NEA	National Environmental Act
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
NPA	National Planning Authority
OHS	Occupation Health and Safety
PAPs	Project Affected Persons
RAP	Resettlement Action Plan
SDGs	Sustainable Development Goals
STI	Sexually Transmitted Infections
UBOS	Uganda Bureau of Statistics
WB	World Bank

EXECUTIVE SUMMARY

1. Background to the Proposed Project

Government of Uganda, with funding from the World Bank is implementing Integrated Water Management and Development Project which is providing support to catchment management, protection and restoration activities in Nyamwamba catchment found in Albert Water management Zone (AWMZ). The project supports undertaking emergency maintenance works on river Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods in Kasese District.

It is envisaged that the proposed emergency works shall contribute to improved ecosystem functions and services, improved river capacity to hold anticipated large volumes of water during high peak seasons, augment infrastructure protection against floods, poverty alleviation, employment, community development, improved livelihoods and above all protect against loss of lives. As much as the proposed works shall have potential environmental and social benefits, if not well planned, could have deleterious effects on the natural resources.

As a means of ensuring environmental and social sustainability, there is need to assess the potential environmental and social threats, propose effective mitigation measures, and develop an understanding of the different factors (bio physio-chemical) that may be affected by the proposed works. Therefore, this ESMP has been prepared to provide predications on the likely environmental and social impacts of the proposed project. This is ESMP has been prepared in accordance to the National Environment (Environment and Social Assessment) Regulations 2020 and The World Bank Environmental Assessment (OP 4.01).

2. Project description

This project seeks to undertake emergency maintenance works on river Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods in Kasese District. This section describes the proposed development and provides the concept designs of the proposed development including materials, the type of machines that will be used during emergency river maintenance works and the various activities to be undertaken during the emergency works.

The emergency river maintenance works stretching 5,407m shall be undertaken on the 3 priority hotspots of Masule, Kyanjuki village and Kyanjuki camp with the objective to improve the channelization of flood water within the river Nyamwamba through:

- (i) De-silting and cleaning of built-up flood deposits at priority hotspot locations/sections of the river channel so as to increase the river's flood water carrying capacity;
- (ii) Reinstating/reinforcing and realigning of eroded/collapsed riverbanks using Embankment/dykes; and
- (iii) Protecting vulnerable/weak river sections using Gabion Masonry.

3. Relevant legal, regulatory and institutional framework

Sets of environmental, social and labour laws and acts will be applicable for proposed project implementation. The proposed project triggers the World Bank Operational Policy OP 4.01¹, requiring an Environmental Assessment

¹ The full treatment of OP/BP 4.01 can be found at
<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543912~menuPK:1286357~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html>

(EA) which takes into account the natural environment (air, water and land); human health and safety; social aspects (Natural Habitats OP 4.04, physical cultural resources OP 4.11, involuntary resettlement OP 4.12 and rapid response to crises and emergencies OP 8.00) and including World Bank Group Environmental, Health, and Safety Guidelines² amongst others. EA considers natural and social aspects in an integrated way, and aims at preventing, minimizing, mitigating or compensating for adverse environmental impacts. Whenever feasible, preventive measures are preferred over mitigation or compensatory measures. The proposed project was subjected to a screening process based upon which it was rated as category B of the World Bank classification framework. Presence of huge number squatters and infrastructures on left and right embankment of Nyamwamba upstream, midstream and downstream has triggered rapid response to crises and emergencies OP 8.00). Implementing contractor as well as all agencies involved in implementing any part of project activities shall follow applicable government laid down laws/ acts/ regulation. Separate responsibility under each applicable law is detailed out to manage any environmental and social concerns. Prior permission like Riverbank user permits issued by the National Environment Management Authority will be obtained before commencement of implementation works.

The Contractor will also be required to develop Contractors' Environmental and Social Management Plan (CESMP) to the address site specific E&S issues for both the main contract and the auxiliary construction activities e.g., the process to obtain approval of local government authority for sites identified for camp establishment, temporary storage and disposal of waste materials including de-silted material, vegetation wastes among others. The CESMP will contain amongst others a stakeholder engagement plan (SEP) which will identify the different stakeholders' categories, their issues/concerns/interests, expectations, information needs and role on the project. The contract shall identify and implement strategies to address the stakeholders concerns and emerging challenges during implementation. It will be required that the contractor undertakes consultations and involvement of all the stakeholders of the project.

The proposed Emergency Maintenance of River Nyamwamba for Flood Mitigation against Damage of Critical Infrastructure and Loss of Livelihoods project will be undertaken in conformity with the national and international legal frameworks which include but not limited to the Constitution of the Republic Uganda, 1995, the Water Act of 1995, the National Environment Act (NEA) of 2019, Occupational Health and Safety Act 2006 and World bank Environmental and Social Safeguards operational policies and procedures including Environmental, Health and Safety (EHS) guidelines.

NEA section 5 of Principles of Environment Management subsection (2) it ensures that in case of an environmental emergency such as a disaster of any magnitude, the lead agencies promptly notify other relevant agencies and departments so as to guarantee the availability of support. However, the schedule 11 of the Act exempts emergencies and disasters from environment and social impact assessments.

4. Environmental and Social Baseline

Status of baseline social and environmental conditions was considered in three aspects, i.e., (1) physical, (2) biological and (3) social environment. Hydrological and climate data, presence of vulnerable fauna was collected mainly from secondary sources whereas socio-economic, floras were collected from primary and secondary study. A census study of probable impacted encroachers/ squatters/ utilities/ community resource and enumeration study of presence of tree species preset within active work zone were carried out.

² The EHS Guidelines can be consulted at www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines

River Nyamwamba is physically located within the Rwenzori National Park and ecologically diverse; it is ecologically fragile and susceptible to climatic and other environmental variations. In this regard assessments were to be undertaken to guide planning and management of flood mitigation works.

Situation analyses findings indicated that the river is still experiencing disastrous recurrent flash floods with the most current that happened during the assessments on 14th July 2021 and 15th August 2021. The floods similar to that of May 2020 destroyed a number of infrastructures including but not limited to roads, farmlands, settlements, hospitals, hydro-power schemes among others.

Primary study reveals that at hotspot area (1) ie Masule, a total of 20 Houses, 40 goats, 60 chicken and 40 acres of farm land are at risk and a total of 60 people could benefit from the intervention, (2) Kyanjuki village, Kilembe Secondary School, Kilembe Hospital, Kyanjuki Bridge, Hydropower Intake hydraulic structures, penstock, 100 Houses, 200 goats, 300 chicken and 40 acres of farm land are at risk and 1000 people and all beneficiaries of the hydropower could benefit from the intervention, (3) at Kyanjuki Camp (Namuhuga and Kyonjojo), Kilembe Hospital staff Quarters, Katiri Bridge, PowerHouse for Nyamwamba HPP1, 2.5km of paved road, 250 Houses, 200 goats, 300 chicken and 10 acres of farm land are at risk and 1700 people and beneficiaries from the hydropower could benefit.

Biodiversity in the project area especially in the upstream area of the Rwenzori National Park is very rich. The significant faunal species in the project area include *the Colobus guereza, Cercopithecus spp, Mus musculoides, Lemniscomys striatus, Mastomys natalensis, Amietia ruwenzorica, Phrynobatrachus mababiensis, Phrynobatrachus natalensis, Hoplobatrachus occipitalis, Afrixalus fulvovittatus, Hyperolius kivuensis, Kassina senegalensis, Hyperolius viridiflavus, Hyperolius cinnamomeoventris, Kinyongia xenorhina, Trioceros johnstoni, Hemidactylus brookii, Python sebae, Hapsidophrys lineatus and Naja melanoleuca.*

In addition to several species of birds including the *Balearica regulorum, Stephanoaetus coronatus, Cyanomitra verticalis and Cossypha niveicapilla.*

No migratory path of animals / birds found in and around the project site. In addition, there are no species of conservation concern within the project footprint. As proposed sites are having human settlements on both sides of the embankment, and because of the flow of river, it has not been a suitable crossing over or migratory path for animals.

The proposed maintenance activities shall start approximately 60 meters from borderline of Rwenzori National Park in the upstream. In the downstream, the site is approximately 9km from Queen Elizabeth National Park (QENP). Therefore, the proposed work sites of each project activity and its influence area does not form part of any National Park, Wildlife Sanctuary or Elephant Corridor except presence of the Queen Elizabeth National Park at a distance of 9 km. away from for Kyanjuki Camp (Namuhuga and Kyonjojo).

5. Environmental and Social Impacts

There will be impact on environmental and social aspects mainly due to implementation of category B project activity. All impacts due to project activity proposed under emergency flood maintenance works are reversible in nature. Positive impacts include, flood control, protection of major infrastructures e.g., HEP, Hospital, Bridges, Schools, Roads and human settlements. In addition, there will be improved livelihoods, safety of the community, water quality and improved river banks stability and environmental protection amongst others. On the other hand, the anticipated negative impacts during maintenance activities might include poor solid waste management, accidents, loss vegetation, collapse of river embankments among others which are localized to sites and can be adequately managed. The mitigation measures shall include acquisition and compliance with the key permits such

as ESIA approval certificates, waste disposal permits, water use permits, revegetation, stakeholders' engagements, awareness and training of project workers and communities, provision of appropriate protective equipment etc. There are however, anticipated residual impacts such as exposure to accidents, river bank degradation due to human activities as well as water pollution which will require further mitigation including sensitization, river bank zoning and monitoring, signages among others. Over all, the positive impacts of the maintenance activity of river Nyamwamba overweight the negative impacts.

6. Environmental and Social Monitoring Plan

Monitoring plan to evaluate effect after implementation of mitigation plan is developed and responsibility is given to project authority. Different parameters including air, water, soil/silt and noise quality will be observed on periodic basis. Sensitive locations where any kind of work is proposed are identified and earmarked in map for future monitoring of various environmental parameters. Total 10 locations for air, 10 locations for inland surface water, 5 locations for ground water and 5 locations for noise quality are to be monitored on quarterly basis. Social parameters also identified and plan for regular monitoring is formulated. Monitoring and evaluation work shall be carried out throughout the project implementation period of 8 months and initial one of project operation.

7. Stakeholder Consultation

All potential stakeholders were consulted during the process of impact assessment study. Total 6 project sub counties were covered during field assessment. At-least one FGD with local community were conducted at each sample village and due to COVID 19 pandemic, only a few individuals were consulted while observing the Ministry of health's SOPs. District officials as well as NGOs and private companies undertaking projects within the Nyamwamba catchment were consulted. Catchment management issues were raised and responses were made by the ministry officials during the engagements. The records of stakeholder's engagement have been provided in annex 2.

8. Grievance Redress mechanism

Effective grievance redress mechanism gives an opportunity to the organization to implement a set of specific measures to ensure good governance accountability and transparency in managing and mitigation of environmental and social issue of a particular project. This consists of defining the process for recording/receiving complaints and their redress in respect of environmental and social matters. An integrated system will be established with Grievance Redress Committees (GRCs), with necessary officers, officials and systems, at the project implementation unit level (for detailed GRM including referral path ways for GBV and VAC see annex 4). Grievances, if any, may be submitted through various mediums, including in person, in written form to a noted address, e-mail, or through direct calls to concerned official/s. The Social / Environmental Expert in the concerned agency shall be responsible for coordination of grievance/complaints received. The grievance redress mechanism shall be in place from project inception throughout the project implementation and operation. A platform for grievance redress should be organized and its regular meetings will be conducted so as to allow people to put forth their grievances, if any. It will help the appropriate authority to find solutions and amicably address the issues. The project, apart from web-based system, will also have Five-tire grievance redress mechanism, i.e., (1) at community level, (2) at the project site level (Contractor), (3) Sub County/division level (Lower local government level) and (4), district level, (5) Ministry level. However, aggrieved parties may be free to seek for alternative legal/judiciary redress and all criminal related matters shall be addressed in accordance with criminal justice system of Uganda.

9. Conclusion

- There are no protected areas, archeological or cultural sites, rare or endangered flora and fauna to be affected by the river maintenance works. The ESMP/PB found no endangered terrestrial species likely to be affected.
- Mitigation measures were developed to avoid and minimize potential environment and social impacts of the project. These measures are incorporated in the design process of proposed river maintenance works. Based on the screening exercise, the Project does not traverse any protected area, cultural site, endangered or rare species in the selected project locations.
- The impacts during the preconstruction, construction and operation phase of the project are minor and moderate. All impacts incurred during these phases will be mitigated to avoid or minimize the potential impacts. To ensure these mitigation approaches are implemented, the approaches will be included in the contract documents as part of contractor's ESMP.
- Following the requirements of the ESMP, the contractor will be required to provide a detailed CESMP based on the model set out in this report. Monitoring contractor's compliance with the ESMP will be undertaken by MWE, NEMA and Kasese District Local Government. Monitoring reports will be submitted to MWE and Kasese District Local Government.
- From the screening exercise and community consultation, it is concluded that the level of assessment required meets the requirements. Therefore, no further assessment is required and that the Project complies with the environmental Categorization of Category B.

1. INTRODUCTION

1.1. Background to the Proposed Project

Government of Uganda, with funding from the World Bank is implementing Integrated Water Management and Development Project which is providing support to catchment management, protection and restoration activities in Nyamwamba catchment found in Albert Water management Zone (AWMZ). The project supports undertaking emergency maintenance works on river Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods in Kasese District.

It is envisaged that the proposed emergency works shall contribute to improved ecosystem functions and services, improved river capacity to hold anticipated large volumes of water during high peak seasons, augment infrastructure protection against floods, poverty alleviation, employment, community development, improved livelihoods and above all protect against loss of lives. As much as the proposed works shall have potential environmental and social benefits, if not well planned, could have deleterious effects on the natural resources.

As a means of ensuring environmental and social sustainability, there is need to assess the potential environmental and social threats, propose effective mitigation measures, and develop an understanding of the different factors (bio physio-chemical) that may be affected by the proposed works. Therefore, this ESMP has been prepared to provide environmental and social examination of the likely impacts the proposed project shall have.

1.2. Overview of the Nyamwamba Catchment

River Nyamwamba Catchment is located in Kasese District, south-western Uganda, and is characterized by verdant hilly environment of Rwenzori Mountains, with steep slopes and stones and boulders filling the valleys. The catchment consists of the following administrative units: Bulembia Division, Kilembe subcounty, Nyamwamba Division, Central Division, Rukoki, Kyarusandara, Kyarumba, Bugoye, and Mahango sub-counties. These sub counties are traversed by River Nyamwamba, which has its source in the Rwenzori Mountains.

River Nyamwamba Catchment covers an approximate total area of 257.2 km² (7 % of Kasese District). The distribution of the catchment amongst the different administrative units is summarized in *Table 1-1* below. The catchment is located within the Greater Semliki catchment which is approximately 33,487 km². The Greater Semliki catchment is shared between Uganda and the Democratic Republic of Congo and lies within the Albertine Rift Montane Eco-region of African Rift Lakes Priority Place. It lies in the Albert Water Management Zone under the decentralized water resources management in Uganda. Nyamwamba catchment is therefore a sub-catchment within the Greater Semliki catchment. Ministry of water and environment has developed River Nyamwamba Catchment Management Plan and measures identified to address the water resources issues in the catchment to be funded/ supported by IWMDP.

Table 1-1: Nyamwamba surface area coverage per Subcounty

County	Subcounty	Catchment Area (km ²)	% Subcounty Area in Catchment	Core/ Fringe
Busongora South	Kilembe	74.07	94.1	Core
	Rukoki	34.82	90.4	Core
	Kyarusandara	0.34	0.2	Fringe
	Muhokya	15.17	3.4	Fringe
Busongora North	Bugoye	3.17	1.6	Fringe
Kasese Municipality	Bulembia Division	59.69	96.4	Core
	Nyamwamba Division	51.35	74.3	Core
	Central Division	2.01	7.8	Fringe
Bukonzo East	Kyarumba	4.02	2.6	Fringe
	Mahango	12.60	38.3	Fringe

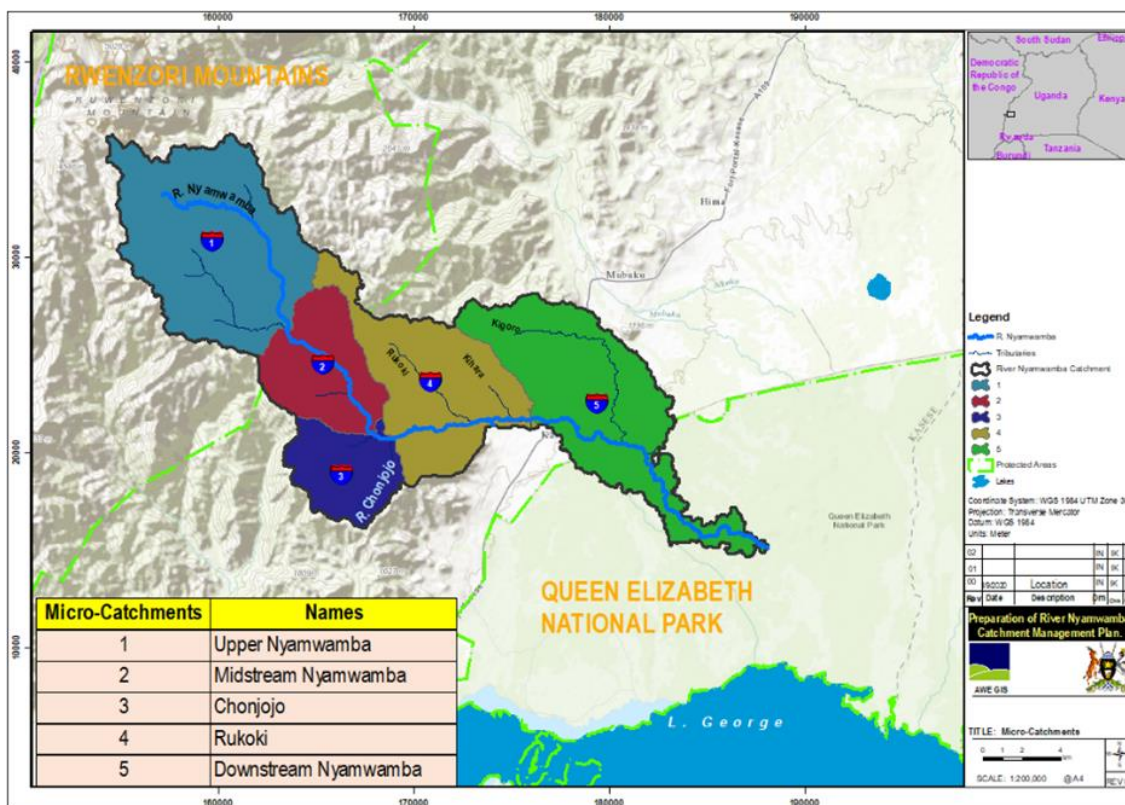


Figure 1-1: River Nyamwamba micro-catchments (proposed river maintenance works shall be concentrated in micro-catchments 2 and 3)

1.3. Flood timeline in Nyamwamba Catchment

Kasese District continues to experience the devastation caused by the flash floods resulting from the six major rivers in the area – Nyamwamba, Mubuku, Nyamugasani, Lhubirha, Rwembya and Sebwe – bursting their banks during heavy rainfall events; inundating the surrounding lowlands.

River Nyamwamba experiences the worst flooding amongst these rivers with bursting its banks on several weak points, in particular, the areas of Kasese Municipality, with Nyamwamba and Bulembia division being severely

affected. These floods affect infrastructures (e.g. Bridges, schools, Hydropower plants, water supply systems, and Hospitals), settlements, lives and livelihoods.

With the most recent river flooding experienced on July 15, 2021, river Nyamwamba has been flooding since 1966. The flooding timeline is shown in *Figure 1-2*.

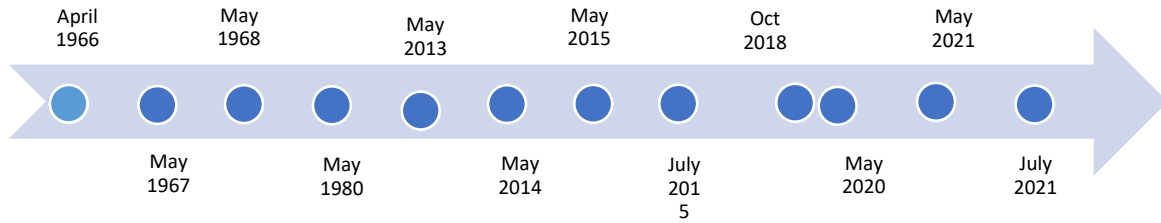


Figure 1-2: Major floods in Kasese since 1966

Table 1-2: Areas affected by flooding in Nyawamba over the years

S/N	Location	Coordinates		Cross Sectional Area (m ²)	Section Length (m)	Infrastructure (Livelihoods) at Risk	Population to Benefit from Intervention	Proposed Action/Intervention (Including Height of Structure where Applicable)	Priority
		Start	End						
1	Kyambogho	0°14'02.4"N 29°58'45.4"E K1	0°13'56.5"N 29°58'51.3"E K2	25	270	Hydropower Intake hydraulic structures, penstock and 14 acres of community owned trees	100 people and all beneficiaries of the hydropower	River maintenance (6,750m ³ of earthworks)	4
2	Masule	0°13'56.5"N 29°58'51.3"E M1	0°13'29.8"N 29°59'30.3"E M2	25	1200	20 Houses, 40 goats, 60 chicken and 40 acres of farm land	60	<ul style="list-style-type: none"> River maintenance (30,000m³ of earthworks) Gabion Masonry at lower end (1,500m length, 2m high) Embankment/dyke at upper end (2 m high) 	3
3	Kyanjuki Village	0°13'15.97"N 29°59'51.53"E KY1	0°12'19.11"N30° 0'25.0"E KY2	25	2207	Kilembe Secondary School, Kilembe Hospital, Kyanjuki Bridge, Hydropower Intake hydraulic structures, penstock, 100 Houses, 200 goats, 300 chicken and 40 acres of farm land	1000 and all beneficiaries of the hydropower	<ul style="list-style-type: none"> River maintenance (55,175m³ of earthworks) Gabion Masonry (2,000m length, 2m high) Embankment/dyke (2m high) 	1
4	Kyanjuki Camp Namuhuga and Dog Section (Kyonjojo)	0°11'47.1"N 30°00'53.6"E KYC1	0°11'30.8"N 30°02'53.3"E KYC2	25	2000	Kilembe Hospital staff Quarters, Katiri Bridge, PowerHouse for Nyamwamba HPP1, 2.5km of paved road, 250 Houses, 200 goats, 300 chicken and 10 acres of farm land	1700 plus all the country people who benefit from the hydropower generated	<ul style="list-style-type: none"> River maintenance (50,000m³ of earthworks) Gabion Masonry (800m length, 2m high) Embankment/dyke (2m high) 	2
5	Rukoki	0°11'41.3"N 30°05'42.9"E R1	0°11'34.2"N 30°06'29.6"E R2	10	1500	Main Bridge (Kasese-Fort Portal Road)	n/a	<ul style="list-style-type: none"> River maintenance (15,000m³ of earthworks) Gabion Masonry (1,500m length, 2m high) 	5
6	Rukoki (mubuku irrigation intake)	0°11'40.53"N 30° 4'55.32"E	0°11'41.12"N 30° 5'30.28"E	10	1100	Mubuku Irrigation Scheme Intake	n/a	<ul style="list-style-type: none"> River Maintenance (11,000m³ of earthworks) Gabion Masonry (200m, 1m high) 	6

1.4. Description of the selected hotspot areas

From Table 1-2 above, the most damaged areas/ hotspots for which emergency interventions are planned are indicated in the Table 1 3 below. These hotspots have been selected based on; extent of damage including; infrastructure at risk and lives/livelihoods that require protection.

Table 1-3: Priority hotspots for emergency maintenance works

S/N	Name	Coordinates		Cross Sectional Area (m ²)	Section Length (m)	Infrastructure (Livelihoods) at Risk	Population to Benefit from Intervention	Proposed Action /Intervention (Including Height of Structure where Applicable)	Deposits reused	Deposits disposed
		Start	End							
1	Masule	0°13'56.5"N 29°58'51.3"E M1	0°13'29.8"N 29°59'30.3"E M2	25	1200	20 Houses, 40 goats, 60 chicken and 40acres of farm land	60	<ul style="list-style-type: none"> River maintenance (30,000m³ of earthworks) Gabion Masonry at lower end (1,500m length, 2m high) Embankment/dyke at upper end (2 m high) 	20,000m ³	10,000m ³
2	Kyanjuki Village	0°13'15.97"N 29°59'51.53"E KY1	0°12'19.11"N30° 0'25.0"E KY2	25	2207	Kilembe Secondary School, Kilembe Hospital, Kyanjuki Bridge, Hydropower Intake hydraulic structures, penstock, 100 Houses, 200 goats, 300 chicken and 40acres of farm land	1000 and all beneficiaries of the hydropower	<ul style="list-style-type: none"> River maintenance (55,175m³ of earthworks) Gabion Masonry (2,000m length, 2m high) Embankment/dyke (2m high) 	44,140m ³	11,035m ³
3	Kyanjuki Camp (Namuhuga and Kyonjojo)	0°11'47.1"N 30°00'53.6"E KYC1	0°11'30.8"N 30°02'53.3"E KYC2	25	2000	Kilembe Hospital staff Quarters, Katiri Bridge, PowerHouse for Nyamwamba HPP1, 2.5km of paved road, 250 Houses, 200 goats, 300 chicken and 10 acres of farm land	1700 plus all the country people who benefit from the hydropower generated	<ul style="list-style-type: none"> River maintenance (50,000m³ of earthworks) Gabion Masonry (800m length, 2m high) Embankment/dyke (2m high) 	44,000m ³	6,000m ³

Subsequent to the table above, a map of the selected hotspots were delineated to show the exact extend of the intervention as shown below;

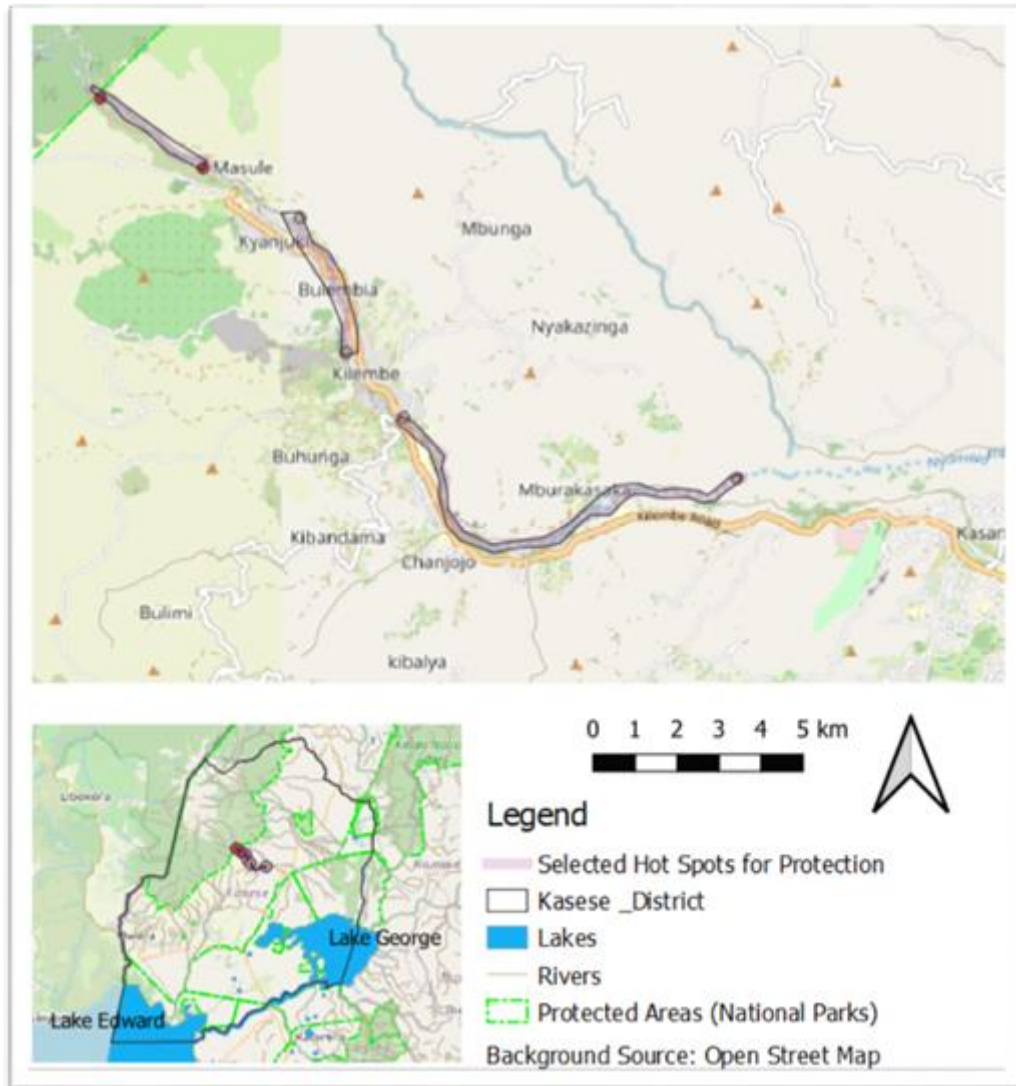


Figure 1-3: River Nyamwamba Proposed Project Areas

1.5. Purpose of the ESMP

The purpose of the ESMP is to give an environmental and social examination of the likely impacts of the proposed project on the biophysical and social aspects of the environment.

The aim is to improve decision making and to ensure that the proposed project would be environmentally and socially sound and sustainable. Environmental and social consequences should be recognized early in the project cycle and taken into consideration during project siting, planning, technology choice and design. Impact Assessment identifies ways of improving a project environmentally and socially and (in order of priority) preventing, minimizing, mitigating, or compensating for adverse impacts, as appropriate, for a given project. These steps help avoid costly remedial measures.

1.6. Project Implementation Arrangements

The Ministry of Water and Environment, shall institute a Project Management Team (PMT) who would be responsible for the day-to-day planning, management, coordination and monitoring of the proposed project activities.

Name of the Proponent

Ministry of Water and Environment.
Water Resources Management Directorate

Main Contact Person and Postal Address

The Permanent Secretary,
Ministry of Water and Environment,
P.O. Box 20026, Kampala, Uganda
E-mail: mwe@mwe.go.ug

2. RELEVANT LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK

In view of the wide-ranging policy and legal framework that impinges on management of water and the associated resources, implementation of the emergency river maintenance works is expected to conform to all the relevant policies and laws. Therefore, Ministry of waters and Environment is expected to ensure that the land and water resources are utilised in accordance with the policies and laws mentioned below and other relevant laws and regulations. In addition, it is incumbent upon the implementing Ministry to ensure that the local authorities are closely involved in the implementation of the management measures, and in monitoring of the activities of the various actors.

2.1. Relevant Policy Framework

a) Uganda Vision 2040

Uganda Vision 2040 provides development paths and strategies to operationalize Uganda's Vision statement which is "A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years" as approved by Cabinet in 2007. The main focus is transformation of the Uganda's economy from peasantry dominated and low-income economy to a more competitive and middle-income status for every Ugandan by 2040. National Development Plan phase III is therefore a Medium-Term investment plans that sets the milestones towards the realization of Vision 2040; beginning with medium term achievement of propelling the economy of the country to middle income by 2025.

Relevance: IWMDP intervention conforms to development priorities and implementation strategies emphasized by NDP-III. It addresses some of the key priorities of the NDP III in regards to infrastructure development. Construction of flood mitigation structures is huge contribution towards improvement of productive infrastructure that would not only help improve the capacity of river Nyamwamba to cope with climate variation shocks such as floods but also prevent livelihood loss and restore ecosystem integrity for better economic returns and welfare enhancements

b) Uganda Wildlife Policy, 2014

This Policy provides a framework within which all Government institutions, private sector, development partners, civil society and all other stakeholders in the wildlife conservation industry must operate in order to sustainably conserve and develop the wildlife resource base for national social-economic transformation. Additionally, it promotes climate change awareness, mitigation and adaptation pursuing initiatives that build capacity of wildlife populations and people to be more resilient to climate change shocks.

The policy on wildlife also provides for the management of wildlife resources for ecological, economic, aesthetic, research, scientific and educational benefits. The policy has direct relevance to the protection, control of access and sharing of benefits from wildlife management. Strategy (d) of the policy commits Government to ensure that all new developments and interventions within protected areas are subjected to appropriate environmental impact assessments and regular environmental audits are conducted on existing ones.

Relevance: This policy is relevant to the project since it is close to a protected area i.e. Rwenzori National Park

c) The National Policy for Conservation and Management of Wetlands (1995)

The wetlands Policy was formulated and adopted by government in 1995. It sets out five goals, namely to establish principles by which wetland resources can be optimally used now and in the future; to end practices that reduce wetland productivity; to maintain the biological diversity of natural and semi-natural wetlands; to maintain wetland functions and values; and to integrate wetland concerns into planning and decision making of other sectors.

Relevance: The riverine wetlands in the project area should not be affected by the project footprint.

d) The Uganda National Land Policy, 2013

The Uganda National Land policy provides a framework for articulating the role of land in national development, land ownership, distribution, utilization, alienability, management, and control of land. The Land Policy has a specific objective that seeks to ensure sustainable utilization, protection and management of environmental, natural and cultural resources on land for national socio-economic development. It seeks to ensure that all land use practices and plans conform to principles of sound environmental management, including biodiversity, preservation, soil and water conservation, and sustainable land management. Section 6.7, item 140 of the policy promotes optimal and sustainable use and management of environment and natural resources for the present and future generations.

The policy specific objective (vi) seeks to redress historical injustices to protect the land rights of groups and communities marginalized by historical or on the basis of gender, religion, ethnicity and other forms of vulnerability to achieve balanced growth and social equity. It seeks to ensure that use and management of natural resources, recognizes and protects the rights to ancestral lands of ethnic minority groups.

Relevance: *The policy therefore provides a framework for strategic management of environmentally sensitive areas such as Rwenzori National Park (RNP), groundwater, natural streams, wetlands, forest reserves and other land reserved for ecological purposes as delineated in the project area.*

The policy provides for recognition and protection of ancestral lands and also provides a framework for prompt pay, adequate and fair compensation to ethnic minority groups that are displaced from their ancestral land by government action

e) National Gender Policy, 2007

The policy's goal is to achieve gender equality and women's empowerment as an integral part of Uganda's socio-economic development. The specific objectives of the policy include among others to:

- reduce gender inequalities so that all women and men, girls and boys, are able to move out of poverty and to achieve improved and sustainable livelihoods;
- increase knowledge and understanding of human rights among women and men so that they can identify violations, demand, access, seek redress and enjoy their rights;
- strengthen women's presence and capacities in decision making for their meaningful participation in administrative and political processes;
- address gender inequalities and ensure inclusion of gender analysis in macro-economic policy formulation, implementation, monitoring and evaluation.

Relevance: *The policy promotes the participation of both men and women at all stages of the project cycle. The policy requires that for adequate implementation of gender aspects, there is need to develop a Gender Management Plan. The plan shall be developed by the contractor under site specific ESMP for the project.*

The policy emphasizes equal access to and equal control over economically significant resources and benefits.

f) The Resettlement/Land Acquisition Framework, 2002

The Resettlement/Land Acquisition Framework, 2002 is an institutional safeguard against severe or adverse impacts of planned project activities on the social welfare of communities and proposes mitigation measures by:

- Minimizing displacement of potentially affected project persons during project implementation;
- Endeavouring to ensure that the Project Affected Persons (PAPs) are adequately compensated and
- Putting in place measures to minimize adverse concerns where it is inevitable.

Relevance: *This policy framework focuses on measures to reduce involuntary resettlement, ensuring that the PAPs are resettled and are not worse off than they were before the project. The framework outlines measures to be taken with respect to land acquisition matters and which should be in tandem with existing national and international provisions governing land acquisition.*

g) National HIV and AIDS Policy, 2011 and National Strategic Framework for HIV/AIDS activities in Uganda

The National AIDS Policy is aimed at managing the HIV/AIDS pandemic and provides guidance on how to approach the pandemic. Together with the National Strategic Framework for HIV/AIDS activities in Uganda, it provides overall guidance for activities geared towards preventing the spread of HIV/AIDS. This will be achieved through:

- Increased coverage and utilization of HIV prevention services. Attainment of this goal and outcomes is also contingent on Increased adoption of safer sexual behaviors and reduction in risk taking behaviors;
- A strengthened and sustainable enabling environment that mitigates underlying factors that drive the HIV epidemic;
- Strengthened leadership and coordination of HIV prevention programs, and
- Strengthened information systems for HIV prevention.

Relevance: Among policy strategies is the requirement of both the public and non-public, formal and informal workplaces to formulate and implement HIV and AIDS policy to cater for HIV and AIDS prevention and care issues. Therefore, management of the project shall be at the fore to spearhead the requirements of the policy.

h) Environment Health Policy -2005

The Environmental Health Policy concentrates on the importance of environmental sanitation which includes: safe management of human waste and associated personal hygiene; the safe collection, storage, and use of drinking water; solid waste management; drainage; and protection against disease vectors (MOH 2005). Environmental health practices include: safe disposal of human waste, hand washing, adequate water quantity for personal hygiene and protecting water quality, all influence the morbidity and mortality of diarrheal diseases.

Relevance: The policy will guide implementation of Public Health and hygiene intervention measures on the project.

i) 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.

Relevance: The project management will ensure that all employees are above 18years and not school going.

j) The National Equal Opportunities Policy, 2006

The National Equal Opportunities Policy provides a framework for redressing 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.

Relevance: The project will avail equal opportunities and affirmative action.

k) The National Environment Policy, 1994 revised in 2014

The overall goal of this policy is the promotion of sustainable economic and social development heedful of the needs of future generations through ensuring environmental quality and resource productivity on a long-term basis. It calls for integration of environmental concerns into development policies, plans and projects at national, district and local levels. Hence, the policy requires that projects or policies likely to have significant adverse ecological or social impacts undertake an ESIA before their implementation. This is also reaffirmed in the National Environment Act no. 5 (2019) and National Environment Management Policy, 1994 revised 2014.

Relevance: *The implementing ministry is committed to ensure that the proposed interventions are carried out in an environmentally sound manner and will implement the suggested mitigation measures as required by this policy.*

l) The National Water Policy, 1999

The National Water Policy is one of the fundamental policies for the governance of water resources in Uganda. The overall policy objective is to manage and develop the water resources in a sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs, with the full participation of all stakeholders, and so as not to leave the future generations any worse off than ourselves.

Relevance: *The implementation of the emergency river maintenance works is geared towards achieving the policy objectives of preserving and ensuring adequate quantity and quality of the catchments' water resources*

m) The National Land Use Policy, 2007

In support of the national objectives on poverty eradication and economic growth, while at the same time ensuring sustainable utilisation of natural resources, including land and water, the main goal of the National Land Use Policy is 'to achieve sustainable and equitable social and economic development through land utilisation in Uganda'. The specific objective of the policy is to promote land use activities that ensure sustainable utilisation of natural resources for national socio-economic development. The policy emphasises community based participatory planning, gender, and land ownership, among other environmentally friendly practices.

Relevance: *Some of the interventions under this project shall promote sustainable land use management practices and shall ensure community participation at all levels as guided by the policy.*

n) The National Agricultural Policy, 2015

The overall objective of the agricultural policy is to promote food and nutrition security and household incomes through coordinated interventions that focus on enhancing sustainable agricultural productivity and value addition, providing employment opportunities, and promoting domestic and international trade. The guiding principles of the policy aim at pursuing a private sector led and market-oriented economy, development of agricultural development zones, provision of agricultural development services to farmers, ensuring key agricultural resources such as soils and water for agricultural purposes are sustainably used and managed, among others.

Relevance: *All the agricultural interventions that have been suggested by the proponent shall be carried out in accordance to this policy to ensure sustainable use of the key agricultural resources such as soils and*

o) The Uganda Forestry Policy, 2001

The Forest Policy (2001) emphasizes the ecological and socio-economic importance of protecting the country's forest resources. Through the policy, Government is committed to promoting an integrated sector that achieves sustainable increases in the economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable. To achieve this goal, the policy aims at improving management of the natural forests both on protected land and land under private ownership, promoting commercial forestry, forest products processing and value addition, increasing forests on-farm, and conserving biodiversity. The policy also gives government the responsibility to control illegal practices, monitor best practice, and measure environmental and social impacts. In addition, community participation in forest management is affirmed because it contributes to the social strength of the forestry sector and ensures:

- sustainable management of the forestry resources,
- sufficient supplies of forest products,
- Protection of water resources, soils, fauna and flora.

Relevance: Due to the high rate of deforestation in the sub catchment, afforestation activities as some of the interventions are proposed and this should be carried out in line with this policy to ensure sustainable development and management of forests in the region.

2.2. Relevant Legal Framework**a) The Uganda Constitution, 1995**

The constitution in its National Objectives and Directive principle of State policy, objective XIII provides for the protection of natural resources. It provides that the state shall protect important natural resources, including land, water, wetlands, minerals, oil, fauna, and flora on behalf of the people of Uganda. Objective XXVIII (i) requires State to promote sustainable development and public awareness of the need to manage land, air and water resources in a balanced and sustainable manner for the present and future generations. Paragraph (ii) of that objective goes ahead to state that the state shall take all possible measures to prevent or minimize damage and destruction to land air and water resources resulting from pollution or other causes.

Relevance: To ensure the project's compliance with the constitutional obligations on sustainability, an Environmental Project Brief has been prepared to give mitigation measures to ensure that the environment is not compromised during implementation of the interventions.

Article 39 preserves the right of every Ugandan to clean and healthy environment. Article 237(2)(b) of the constitution provides that notwithstanding clause(1) of Article 237 which provides that land in Uganda belongs to the citizens of Uganda to vest in them according to the land tenure systems provided for in the constitution, Government or local government shall hold in trust for all the people and protect natural lakes, rivers, wetlands, forest reserves, game reserves national parks and any land to be reserved for ecological and tourism purposes for the common good of all citizens.

b) The National Environment Act No.5 (2019)

The Act requires the developer of a project described in the fourth schedule to the Act to submit a project brief to the lead agency, in the prescribed form and giving the prescribed information. Where a project or an activity may have, is likely to have, or will have significant impact on the environment, an environmental impact study is required.

Section 5 of Principles of Environment Management subsection (2) it ensures that in case of an environmental emergency such as a

Relevance: The implementation of the proposed interventions is likely to have impacts on the environment thus the undertaking of this environmental assessment by the proponent was to identify its potential impacts on the neighboring communities and the environment and so devise mitigations to these impacts.

disaster of any magnitude, the lead agencies promptly notify other relevant agencies and departments so as to guarantee the availability of support. However, the schedule 11 of the Act exempts emergencies and disasters from environment and social impact assessments.

c) **The National Forestry and Tree planting Act, 2003**

The Act provides for:

- Conservation, sustainable management and development of forests for the benefit of the people of Uganda
- The declaration of forest reserves for the purposes of protection and production of forests
- Sustainable use of forest resources and the enhancement of the productive capacity of forests
- The promotion of tree planting
- The establishment a National forestry Authority.

Relevance: *Interventions involving growing of different tree species within the sub catchment shall be carried out in respect to this Act and in the know of the concerned district council.*

Part V section 41 of this Act provides for licenses and subsection (1) states that, *a responsible body may, subject to the management plan, grant to an interested person for: the cutting, taking, working or removing of forest produce from a forest reserve or community forest; or the sustainable utilization and management of the forest reserve or community forest.*

d) **The Water Act (1995)**

Section 100 vests all rights to investigate, control, protect and manage water in Uganda in the Government and in section 34, it makes it an offence to pollute or cause a risk of water pollution.

Relevance: *The implementations of the interventions will adhere to the requirements of the Act to prevent contamination of the nearby water resources*

e) **The Public Health Act, Cap 281**

Section 7 of the Public Health Act provides local authorities with administrative powers to take all lawful, necessary and reasonable measures to prevent the occurrence of, or to deal with any outbreak of, any infectious communicable or preventable disease in order to safeguard and promote public health. Section 105 of the Act imposes a duty on the local authorities to take measures to prevent any pollution that is dangerous to health to enter any water supply that the public has a right to use for drinking or for domestic purposes. The Act further details the location of waste disposal facilities such as solid waste skips and septic tanks in relation to settlements and food points.

Relevance: *The developer also aims at operating without subjecting the public and environment to any danger / nuisance arising from the implementation of interventions. Sanitary facilities will be set up at all project areas to prevent exposing communities to nuisances.*

f) **The Local Government Act, 1997**

The Local Government Act, 1997 provides for decentralization and devolution of Government functions, powers and services from the central to LGs and sets up the political and administrative functions of LGs. The LGs are responsible for the protection of the environment at the district level. This therefore, implies that LGs should be consulted on projects to be located within their jurisdiction and on matters that affect their environment.

Relevance: *Consultations were made with stakeholders at the district level for all districts within the sub catchment regarding the proposed project with an objective of obtaining their opinion on the proposed interventions and their applicability within their jurisdiction and ascertain viability of the interventions. Such engagements shall continue even during implementation of the project.*

g) The Occupational Safety and Health Act, 2006

Section 13 of the Act puts the responsibility of protection of the worker and the general environment on the employer and he or she must take all measures to protect the workers and the general public from the dangerous aspects of his or her undertaking.

Relevance: The project proponent will put in place all measures necessary to protect safety of workers on each intervention site where necessary and the general public in the vicinity of the intervention site.

h) The Wild Life Act, 2019

The Act provides for the conservation of wildlife throughout Uganda so that the abundance and diversity of their species are maintained at optimum levels commensurate with other forms of land use, in order to support sustainable utilization of wildlife for the benefit of the people of Uganda; (b) the sustainable management of wildlife conservation areas; (c) the protection of rare, endangered and endemic species of wild plants and animals; (d) ecologically acceptable control of problem animals; (e) the enhancement of economic and social benefits from wildlife management by establishing wildlife use rights and the promotion of tourism; (f) the control of import, export and re-export of wildlife species and specimens; (g) the implementation of relevant international treaties, conventions, agreements or other arrangement to which Uganda is a party; and (h) public participation in wildlife management.

i) Land Act Cap 227 (1998)

This clearly indicates that land belongs to the people and due compensation must be made before private assets are affected by development projects/ infrastructure. The applicability of this clause may not be a problem in this project site.

Relevance: The sites are located within the 100m buffer zone of the river and any issue of compensation may not arise

j) Land Acquisition Act (1965):

This is an old piece of legislation developed to make provision for compulsory acquisition of land for public purposes but it also requires in several sections (2-12) that compensation be made to property owners affected by the Project.

k) The water act 1995

The Water Act (Cap 152) envisages that water required for project construction activities and consumption by construction crew needs to be regulated. According to Section 6 of the Act, no person acquires any rights to use water or to construct or operate any works unless authorized under Part II of the Act. Thus, unless a person is an occupier of land on which surface water exists, water may not be used for any purpose without the approval of an authority. The general rights to use surface water are limited to domestic use and firefighting, indicating the importance attached to water supply for domestic purposes. Section 18 states that a person is not allowed to construct or operate any works unless he has a permit granted for that purpose by the Director, Directorate of Water Development (DWD). Construction is defined to include alteration, improvement, maintenance and repair. Section 31 (1) of the Water Act stipulates that it is an offence for a person to pollute water through discharge of waste into watercourses. In conformity with this law, the spillage of petroleum products, disposal of overburden, litter or construction waste should be avoided during project construction and operation or maintenance activities. Section 100: all right to investigate, control, protect and manage water in Uganda is vested in the Government and in section 34, it makes it an offence to pollute or cause risk of water pollution.

l) The Fish Act cap 197, 2011

Section 12 on prohibition against introduction or transfer of fish or their eggs and it states that no person shall introduce into Uganda or in any of its waters any species of fish, their eggs or progeny not indigenous to Uganda without the prior consent in writing of the chief fisheries officer. No person shall transfer from any fish pond or any

waters of Uganda any species of fish, their eggs or progeny into any other fish pond or other waters of Uganda without the prior consent in writing of the chief fisheries officer.

m) The Investment Code of 1991

In Section 19 (2) (d) the Code makes it an implied condition of every investment license “to take necessary steps to ensure that the operation of his business enterprise do no cause injury to the ecology or environment.”

2.3. Relevant Regulatory Framework

a) The National Environment (Environmental and Social Assessment) Regulations, 2020

The ESA regulations S.I. No.48/2020 hold for all projects/activities listed under the fourth and fifth schedule of the National Environment Act, 2019. The regulations state in part II section 6 (1, 2, 3, 4, 5) A developer of a project in section 112 of the Act and set out in Schedule 4 of the Act shall assess the likely environmental, health and socio-economic impacts of the project; A developer of a project set out in Part I of Schedule 4 of the Act shall submit a project brief to the Authority containing the information prescribed in sub regulation (5) and Schedule 2 to these Regulations; A developer of a project set out in Part II of Schedule 4 of the Act shall submit a project brief to the lead agency containing the information prescribed in sub regulation (5) and Schedule 2 to these Regulations; The project brief may be prepared by the developer or an environmental practitioner respectively.

Relevance: This project brief is carried out in fulfilment of the requirements of these regulations and the proponent will submit the briefs to the Authority for their comments and

b) The National Environment (Waste Management) Regulations, 2020

These regulations apply (a) to all waste classified, characterized and categorized under Schedule 2, Schedule 3 and Schedule 4 to these Regulations; (b) to the generation, collection, transportation, storage, treatment and disposal of waste; (c) to transboundary movement of waste; and (d) to all waste management facilities. For the avoidance of doubt, the above (a, b, c and d) shall not apply to petroleum waste regulated under the Petroleum (Waste Management) Regulations, 2019.

Relevance: The proposed interventions are not expected to produce hazardous waste and only organic wastes are expected to be produced though in small quantities. The proponent will ensure that these wastes are managed in line with these regulations.

c) The National Environment (Riverbanks, Lakeshore and Wetlands) Management Regulations, 2000

According to the National Environment (Riverbanks, Lakeshore and Wetlands) Regulations, Government or Local Governments (LGs) shall hold in trust for the people and protect wetlands, riverbanks and lakeshores for the common good of the citizens of Uganda. Government or local government shall not lease out or otherwise alienate any wetlands, riverbank or lakeshore.

Relevance: The interventions that will be carried out within riverbanks shall be implemented with regards to the principles of these regulations to ensure proper utilization and sustainable management of the riverbanks in the sub catchment.

The Regulations provide a list of regulated activities whose implementation in wetlands, riverbanks and lakeshores is subject to issuance of a permit granted by the National Environment Management Authority (NEMA) in consultation with the relevant Lead Agencies. The activities include brick making, recreation activities such as spot fishing, maintenance of green spaces, cultivation, drainage, commercial exploitation, sewerage filtration, fishing using fish gear and weirs, fish farming and other aquaculture, construction of transport and communication facilities such as roads, railways, telephone lines, burning and any other exploitative activity which is of a commercial or trade nature, such as harvesting of papyrus for commercial purposes.

An environmental impact assessment as required under the Environment Act is mandatory for all activities in the wetlands, riverbanks and lakeshores and special measures are essential for protection of riverbanks, lakeshores and wetlands of international, national, and local importance as ecological systems and habitats for fauna and flora, and for cultural and aesthetic purposes, as well as for their hydrological functions and values for preventing soil erosion, siltation and water pollution. Every landowner, occupier or user who is adjacent or contiguous with a wetland, riverbank and lakeshore has a duty to prevent the degradation or destruction of the wetland, and to maintain ecological and other functions of the wetland. A developer desiring to conduct a project which may have a significant impact on a wetland, riverbank or lake shore, is required to carry out an environmental impact assessment in accordance with part x sections 110, and 120 schedules 4, 5, and 6 of the National Environment Act 2019.

d) The National Environment (Hilly and Mountainous Area Management) Regulations, 2000.

These Regulations shall apply - (a) to facilitate the sustainable utilization and conservation of resources in mountainous and hilly areas by and for the benefit of the people and communities living in the area; (b) to promote the integration of wise use of resources in mountainous and hilly areas into the local and national management of natural resources for socio-economic development; and (c) to regulate and promote efficient and sustainable use of resources in mountainous and hilly areas so that the functions and values derived therefrom are maintained for the present and future generations.

Relevance: *The regulations call for District Councils shall make by-laws identifying mountainous and hilly areas within their jurisdiction which are at risk from environmental degradation. The project intends to restore riverbank section along R. Nyamwamba*

e) The National Environment (Noise standards and control) regulations 2002

The regulation provides standards for the maximum permissible noise level to which a person may be exposed from a facility, activity or construction site; control of noise and for mitigating measures for the reduction of noise levels and giving effect to the provisions of section 29 of the Act. Regulation 6 (1) provides that the maximum noise levels to which a person may be exposed from any area and shall not exceed the level specified in Column 2 of part 1 of the First Schedule. Regulation 7 (1) No person shall emit or engage in any activity that emits or is likely to emit noise in excess of the permissible noise level specified in the regulation 6, unless permitted by a license under these regulations; and Any person who emits or engages in any activity that emits or is likely to emit noise above maximum permissible level specified in in sub-regulation (1) commits an offence.

Section 8 (1) Duty to control noise and it's the duty of the owner or the occupier of a facility or machinery, to use the best practicable means of ensuring that the emissions of noise from that machinery, facility does not exceed the permissible noise levels. Sub-regulation (3) a person or occupier of a facility or machinery or plant generating noise who fails to comply with this regulation commits an offence. The project implementation team will ensure no noise emission exceeds maximum permissible levels.

f) The National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999

The water (waste discharge) regulations 1999, Regulation 4 (1): No person shall discharge effluent or waste on land or into the aquatic environment contrary to the standards established under regulation 3 unless he or she has a permit in the format specified in the First schedule issued by the Director.

2.4. Institutional Framework

a) National Environmental Management Authority (NEMA)

The National Environment Management Authority (NEMA) is a statutory body tasked with coordinating, monitoring, and supervising all matters pertaining to the environment, with the Ministry of Water and Environment as its line ministry.

Relevance: The developer intends to restore, conserve and protect riverbanks as one of the proposed interventions and therefore shall work closely with the NEMA. In addition, NEMA shall work hand in hand with the MWE to solve issues regarding encroachment of communities on riverbanks reserves.

b) Ministry of Gender, Labour and Social Development

Ministry of Gender, Labour and Social Development is a Government Ministry with a responsibility to empower communities in diverse areas. The Ministry promotes cultural growth, skills development and labour productivity while promoting gender equality, labour administration, social protection and transformation of communities. Through its Occupation Health and Safety Department, the ministry ensures safety, health and welfare of a person at a workplace.

Relevance: The department of Occupation Health and Safety will be charged with monitoring the developer/contractor's compliance to the requirements of the Occupational Health and Safety Act 2006.

c) Ministry of Local Government (MoLG)

This is charged with the responsibility of promoting a decentralized and good local governance system, facilitating delivery of quality lower local government services in order to contribute to sustainable socio-economic development.

Relevance: The project will be implemented in Kasese Local Government (LG) that will certainly have roles and responsibilities to play.

d) National Forest Authority (NFA)

NFA is the body mandated to; "Manage Central Forest Reserves on a sustainable basis and to supply high quality forestry-related products and services to government, local communities and the private sector". NFA has a vision of contributing to a sufficiently forested, ecologically stable and economically prosperous Uganda. They also have the national tree seedling centre where different species of trees are obtained and supplied to different institutions.

Relevance: NFA shall work hand in hand with the MWE to solve issues regarding encroachment of communities on forest reserves.

e) Ministry of Water and Environment (MWE)

This is the ministry that is responsible for the management of all environmental and water related issues in the country. The MWE is responsible for the protection of all water resources and water sources in the country including management and monitoring of all the water basins in the country and their surrounding ecosystems.

Relevance: The Water Management zone under the Directorate of Water Resources Management is responsible for monitoring and management of the Catchment and shall be in charge of overseeing implementation of the proposed interventions.

f) Ministry of Energy and Mineral Development (MEMD)

This is the Ministry that is responsible for the management of all energy and mineral resources in the country. MEMD is responsible for the development of energy and mineral resources.

Relevance: MEMD is a user of the water for Hep and also a future implementer of the river maintenance works

2.5. International Laws and Regulations

a) *The 1968 African Convention on the Conservation of Nature and Natural Resources*

Article II of the convention gives its fundamental principle as conservation, utilization and development of soil, water, flora and faunal resources in accordance with scientific principles and with due regard to the best interests of the people.

Relevance: *The proponent will ensure conservation of natural resources especially the water resources and sensitive flora and fauna during implementation of the proposed interventions.*

In Article IV, the convention requires all contracting States to take effective measures for conservation and improvement of the soil and shall in particular combat erosion and misuse of the soil. Article IV (a) points out need to establish land-use plans based on scientific investigations (ecological, pedagogical, economic, and sociological) and, in particular, classification of land-use capability by the contracting state.

b) *The World Bank Safeguard Policies*

The proposed project triggers the World Bank Operational Policy OP 4.01³, requiring an Environmental Assessment (EA) which takes into account the natural environment (air, water and land); human health and safety; social aspects (Natural Habitats OP 4.04, physical cultural resources OP 4.11, involuntary resettlement OP 4.12 and rapid response to crises and emergencies OP 8.00) and including World Bank Group Environmental, Health, and Safety Guidelines⁴ amongst others. EA considers natural and social aspects in an integrated way, and aims at preventing, minimizing, mitigating or compensating for adverse environmental impacts. Whenever feasible, preventive measures are preferred over mitigation or compensatory measures. The proposed project was subjected to a screening process based upon which it was rated as category B of the World Bank classification framework.

Relevance: *The World Bank Safeguard Policies guide the implementation of relevant safeguards on the project.*

There are certain gaps between the aforementioned Ugandan laws and regulations and the requirements under the triggered World Bank safeguard policies. The following are the critical gaps identified;

The Ugandan Laws do not provide for Framework Approach (ESMF) but rather only specific instruments (ESIA, ESMP and Environmental Audits). This ESMP prepared for emergency maintenance works on river Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods in Kasese District in line with OP 4.01 will guide the preparation of the specific instruments for environment and social management of the project components. Independent review is not specifically provided for under ESIA Regulations, 2020 of Uganda and as a result the review of ESIA is commonly reviewed by government agencies, whereas the OP 4.01 provides for Panel of Experts to for Category A type projects. Under OP 4.04 Natural Resources, Uganda lacks Regulations to implement the National Forestry and Tree Planting Act and the Wildlife Act. Therefore, OP 4.04 and OP 4.36 on Forests shall be used to assess any impacts on natural habitats. On OP 4.11 Physical Cultural Resources, the Ugandan legal framework is limited in scope. For example, it does not cover certain aspects such as the intangible heritage. These are the salient environmental gaps between the Environmental Safeguard Policies and the Government of Uganda

³ The full treatment of OP/BP 4.01 can be found at <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543912~menuPK:1286357~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html>

⁴ The EHS Guidelines can be consulted at www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines

Environmental requirements. Where gaps exist, the World Bank Safeguard Policies shall take precedence especially on matters of implementation, monitoring preparation; review and approval of site specific ESMP which is not explicitly provided in the National Environment Act No. 5 of 2019. The other area is under OP 4.12 (Involuntary Resettlement) whereby Uganda's Land Act legal framework is restricted to fair, adequate and prompt compensation (cash), while the World Bank policy requires the need to provide alternative land, resettling the Project Affected Persons (PAPs) to levels or standards of livelihood similar to or better than before compensation. The Ugandan legislation also does not provide for restoration of livelihoods, resettlement assistance and compensation at replacement value.

International Conventions and Agreements

This section describes international and regional treaties, conventions, and codes of practice, and agreements applicable to the conservation and sustainable use of aquatic biodiversity in the Lake Victoria basin. These include;

- Declaration on Environment and Development, Stockholm in 1972
- Convention on the Conservation of Migratory Species of Wild Animals, Bonn, 1979
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Washington, 1973
- Convention on Biological Diversity, Rio de Janeiro, 1992
- The Convention on Climatic Change, 1992
- The Protocol Agreement on Conservation of Common Natural Resources, 1982
- Protocol on Environment and /natural Resources management, Arusha, 2006
- The Treaty for the Establishment of the East African Community, Arusha, 2000
- Convention for the Safeguarding of the Intangible Cultural Heritage, 2003
- United Nations Convention to Combat Desertification (UNCCD)
- The Convention on Wetlands of International Importance Especially as Waterfowl Habitat Convention on Elimination of all Forms of Discrimination Against Women, 1979
- The UN Conventions on the rights of persons with disabilities 2008

3. DESCRIPTION OF PROJECT ACTIVITIES

This project seeks to undertake emergency maintenance works on river Nyamwamba for flood mitigation against damage of critical infrastructure and loss of livelihoods in Kasese District. This section describes the proposed development and provides the concept designs of the proposed development including materials and the type of machines that will be used during emergency river maintenance works. This will also involve establishment of support structures (construction camps, workers camp, temporary offices, access routes, vehicle equipment storage and parking yard).

The emergency river maintenance works stretching 5,407m shall be undertaken on the 3 priority hotspots selected in section 1.4 and highlighted in Table 1 3 with the objective to improve the channelization of flood water within the river Nyamwamba through:

- (i) De-silting and cleaning of built-up flood deposits at priority hotspot locations/sections of the river channel so as to increase the river's flood water carrying capacity;
- (ii) Reinstating/reinforcing and realigning of eroded/collapsed riverbanks using Embankment/dykes; and
- (iii) Protecting vulnerable/weak river sections using Gabion Masonry.

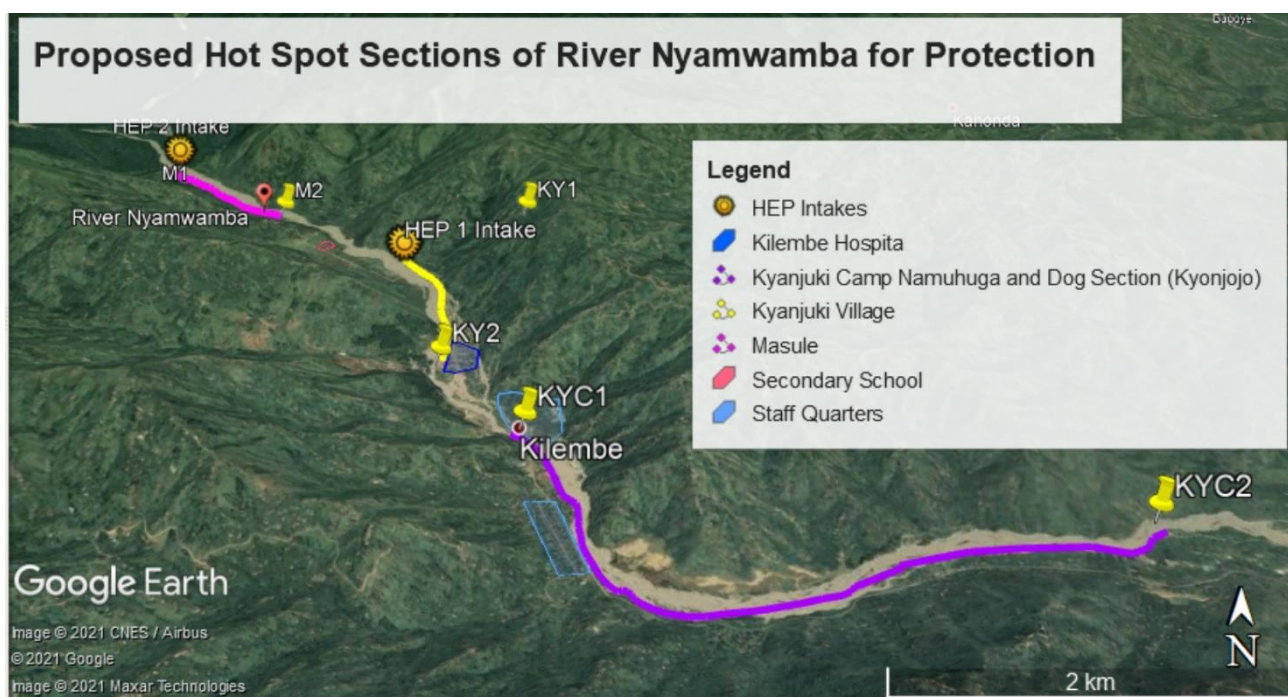


Figure 3-1: Map of the proposed hotspot locations for the emergency maintenance on river Nyamwamba

Table 3-1: Proposed Hotspot locations for the emergency maintenance on river Nyamwamba

S/N	Name	Coordinates		Cross Sectional Area (m ²)	Section Length (m)	Infrastructure (Livelihoods) at Risk	Population to Benefit from Intervention	Proposed Action /Intervention (Including Height of Structure where Applicable)	Deposits for Reuse	Deposits for disposal
		Start	End							
1	Masule	0°13'56.5"N 29°58'51.3"E M1	0°13'29.8"N 29°59'30.3"E M2	25	1200	20 Houses, 40 goats, 60 chicken and 40 acres of farm land	60	<ul style="list-style-type: none"> River maintenance (30,000m³ of earthworks) Gabion Masonry at lower end (1,500m length, 2m high) Embankment/dyke at upper end (2 m high) 	• 20,000m ³	• 10,000m ³
2	Kyanjuki Village	0°13'15.97"N 29°59'51.53"E KY1	0°12'19.11"N30° 0'25.0"E KY2	25	2207	Kilembe Secondary School, Kilembe Hospital, Kyanjuki Bridge, Hydropower Intake hydraulic structures, penstock, 100 Houses, 200 goats, 300 chicken and 40 acres of farm land	1000 and all beneficiaries of the hydropower	<ul style="list-style-type: none"> River maintenance (55,175m³ of earthworks) Gabion Masonry (2,000m length, 2m high) Embankment/dyke (2m high) 	• 44,140m ³	• 11,035m ³
3	Kyanjuki Camp (Namuhuga and Kyonjojo)	0°11'47.1"N 30°00'53.6"E KYC1	0°11'30.8"N 30°02'53.3"E KYC2	25	2000	Kilembe Hospital staff Quarters, Katiri Bridge, PowerHouse for Nyamwamba HPP1, 2.5km of paved road, 250 Houses, 200 goats, 300 chicken and 10 acres of farm land	1700 plus all the country people who benefit from the hydropower generated	<ul style="list-style-type: none"> River maintenance (50,000m³ of earthworks) Gabion Masonry (800m length, 2m high) Embankment/dyke (2m high) 	• 44,000m ³	• 6,000m ³

3.1. Project Tasks

Specifically, the project tasks shall include river maintenance works and setup of auxiliary activities such as campsites and borrow pits. Whereas, the maintenance sites are known as indicated in subsequent sections, the campsites shall be identified by contractor during the mobilization phase of the contract in accordance with the contract and statutory requirements.

3.1.1. River maintenance works at Masule Village (earthworks, gabion masonry and embankment/dyke)

This will entail excavation and desilting of channels to remove boulders and other debris from main stream to flush floods efficiently and to avoid over accumulation of debris that may limit channel capacity during flood events. In addition, the river maintenance works will involve placement of gabions as protection works for stabilizing the river bank adjacent to hot spots to prevent undercutting and fluvial scour, and to protect the most vulnerable sections along Nyamwamba River, where flow velocities are extremely high.

This proposed developments at Masule village will involve river maintenance with an estimated earthwork of 30,000m³, installation of gabion masonry at the lower end of 1500m length and 2m high, and raising an embankment/dyke at the upper end of 2m high. Out of the 30,000m³ earth work, estimated 20,000m³ will be reused for backfilling the embankment and 10,000m³ shall be disposed in designated stock piled as by the district local government.

Construction machines include excavators, concrete mixer and tipper trucks including some manual labor. The outcome will be a new gabion masonry 1500 m long and 2 m high. This will increase conveyance capacity, reduce sediment and boulders piling during floods and help in the strengthening and stabilization of the river banks.

3.1.2. River maintenance works at Kyanjuki Village (earthworks, gabion masonry and embankment/dyke)

This will entail excavation and desilting of channels to remove boulders and other debris from main stream to flush floods efficiently and to avoid over accumulation of debris that may limit channel capacity during flood events. In addition, the maintenance works will entail placement of gabions as protection works for stabilizing the river bank adjacent to hot spots to prevent undercutting and fluvial scour, and to protect the most vulnerable sections along Nyamwamba River, where flow velocities are extremely high.

The proposed developments at Kyanjuki village will involve river maintenance works with an estimated earthwork of 55,175m³, installation of gabion masonry at the lower end of 2000m length and 2m high, and raising an embankment/dyke at the upper end of 2m high. Out of the 55,175m³ earth work, estimated 44,140m³ will be reused for backfilling the embankment and 11,035m³ shall be disposed in designated stock piled as by the district local government.

Construction machines include excavators, concrete mixer and tipper trucks including some manual labor and associated camp sites. The outcome will be a new gabion masonry 2000 m long and 2 m high. This will increase conveyance capacity, reduce sediment and boulders piling during floods and help in the strengthening and stabilization of the river banks.



Photo 3-1 Proposed section for removing boulder in the river course



Photo 3-2: Proposed hotspot for gabion installation at Kyanjuki village

3.1.3. River maintenance works at Kyanjuki Camp (Namuhuga and Kyonjojo (earthworks, gabion masonry and embankment/dyke)

This will entail excavation and desilting of channels to remove boulders and other debris from main stream to flush floods efficiently and to avoid over accumulation of debris that may limit channel capacity during flood events. In addition, the river maintenance works will involve placement of gabions as protection works for stabilizing the river bank adjacent to hot spots to prevent undercutting and fluvial scour, and to protect the most vulnerable sections along Nyamwamba River, where flow velocities are extremely high.

The proposed developments at Kyanjuki Camp will involve river maintenance works with an estimated earthwork of 50,000m³, installation of gabion masonry at the lower end of 800m length and 2m high, and raising an embankment/dyke at the upper end of 2m high. Out of the 50,000m³ earth work, estimated 44,000m³ will be

reused for backfilling the embankment and 6,000m³ shall be disposed in designated stock piled as by the district local government.

Construction machines include excavators, concrete mixer and tipper trucks including some manual labor. The outcome will be new gabion masonry 800 m long and 2 m high. This will increase conveyance capacity, reduce sediment and boulders piling during floods and help in the strengthening and stabilization of the river banks.

3.2. Project concept design

The Project concept design was based on the river characteristics including chemical and biological properties in the river. See attached design drawings for reference as annex 1.

3.3. Project construction Materials

Locally sourced (in Kasese) construction materials shall include; cement, sand, aggregates, hardcore/boulders from excavated material, murrum, water and oils & fuels. Construction materials sourced outside Kasese shall include; gabion boxes, geo-textiles, steel and timber. The boulders shall be used for hardcore and gabion constructions and excess remainder of the hardcore/boulders shall be used to back fill behind the built embankment as stabilization materials.

3.4. Project construction Equipment

The project shall employ the following equipment sets;

Table 3-2: Showing equipment to be used during the flood maintenance works

No.	Equipment Type	Minimum Characteristics	Minimum Number required
1	Excavator - Crawler mounted	0.7 m ³	1
2	Bull-Dozer with Ripper - Crawler Mounted	180 HP	1
3	Back-Hoe Excavator - Wheel mounted with bucket width 0.3,0.45 and 0.6 m	70 HP	1
4	Front End Loader - Wheel mounted	2.3 m ³	1
5	Motor Grader - Wheel mounted	90 HP	1
6	Dump Truck	8&11 Tonne	4
7	Water Bowser	1000 Lit	1
8	Lorry / Pickup / Truck	1.5 Tonne	1
9	Rammer Compactor / Vibrator	80 Kg	1
10	Roller compactor / Vibrator	4 Tonne	1
11	Poker Vibrator Plant including 25, 32, 50 mm poker	0.4 Kw	1
12	Diesel Generator	5 kVA	1
13	Portable Air Compressor including rock Breakers & Hammers	175 cfm	1
14	Submersible Pump	1 HP	1
15	Concrete Mixer	0.3 m ³	1

4. STUDY METHODS USED

The methods used for collection of data in preparation of this Project Brief/ESMP included literature review, field visits, stakeholder consultations, onsite observations and specialised studies such as geophysical mapping, studies on the local hydrology of the area, mapping to ensure continued or better ecosystem functioning in the area and analyses. Some of these methods are further described below.

4.1. Review of Relevant Literature

The team identified several documents related to the project and reviewed them prior and during the compilation of this brief, and details of these have been showed in the bibliography. Primary data and secondary baseline data on area land use, social aspects, sensitive receptor systems and ecology that are likely to be affected by the project at the proposed site were reviewed. Literature was also reviewed to obtain the regulatory and institutional context relevant to the project.

The review also indulged use of secondary data on legislation and environmental standards both locally and World Bank safeguard policies in regard to the project proposed, biodiversity conservation, area land use, area physical plans and socio-economic issues. This literature was reviewed to get baseline and background information of the proposed project site.

4.2. Field Based Surveys

Site visits were undertaken within sub catchment to study environmental conditions in the different identified hotspots where interventions are to be implemented. This involved establishing biophysical baseline conditions of the sub catchment through observation, taking measurements of physical environmental parameters, capture of sensitive receptor systems, in-situ analysis of some environmental parameters and public consultations. It also involved noting an inventory of activities, land use and social infrastructure in the neighbourhood affected or likely to be affected by the proposed project activities. Site/field visit and inventories created assisted in establishing yardsticks that will be used in monitoring compliance of the project to mitigation measures and legal requirements.

4.2.1. Direct Observation and Photography

Direct observation and photography were used to obtain the appearance of the project area and evidence collection for analysis. Transects walks through the proposed area were carried out to collect data and help in assessing site suitability and the likely impacts as a result of project implementation. This enabled the environmental assessment team to make professional observation of the physical environment in addition to other social and environmental attributes likely to affect or be affected by the implementation of the proposed catchment interventions.

4.3. Consultations with Stakeholders

Consultations were held with various stakeholders and community members in a clustered manner (small groups between 5-8 participants) due to COVID 19 pandemic in the country. All SOP guidelines issued by Ministry of health were followed including social distancing, wearing of masks, hand washing and hand sanitization by the stakeholders before accessing the meeting area. The consultations were done in accordance to with the National Environment Act, 2019, ESIA Regulations (2020), and Guidelines for EIA in Uganda. The aim of these consultations were to identify and take note of environmental and social concerns and views of stakeholders at an early stage so that their suggested mitigation measures are incorporated in the final implementation plan for implementation of the identified measures.

Consultations were held with various stakeholders regarding the proposed interventions to be implemented within the sub catchment. The proposed project was disclosed particularly to the catchment management committees, local members within the hotspots in the sub catchment through their local leaders, different districts officials such as Environment Officers, Natural Resource Officers, and Community Development Officers, among others to establish concerns related to the proposed activities and its future operations. Details of people consulted and key issues raised by stakeholders are presented in annex 2.

4.4. Professional Judgment

This involved prediction and analysis of environmental impacts that may result from the implementation of the project activities, proposing appropriate mitigation measures and development of an Environmental and Social Management and Monitoring Plan.

5. BASELINE INFORMATION

5.1. Physical Environment

a) Climate

Kasese district experiences bimodal rainfall pattern. The bimodal pattern results from the regional movement of air masses associated with the inter-tropical convergence zone (ITCZ). Unlike typical monsoon climates that are derived from a reversal of wind currents from the northeast in January to the southwest in July, a north-south reversal in East Africa causes the heavy rains to occur in April and October (Taylor et al. 2007). The first rains are short and occur during March-May and the longer rains from August-November. Annual rainfall ranges from 800 mm -1600 mm, 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 zero at the summit. The temperature and humidity in the watershed vary with altitude, with the high land temperatures ranging from 0^o to 25^oC and the low land from 8^o to 30^oC.

b) Topography

Kasese District is famous for the Mountains of the Moon which constitute part of the catchment where pristine waters of River Nyamwamba originate. The Rwenzori Mountain ranges, including the Margherita and Stanley peaks can be vividly viewed and accessed from Kasese town. The topography ameliorates tourism, a significant activity within the catchment given its natural resource endowment including mountains and national parks. The national parks located in the catchment include: Queen Elizabeth National Park in the downstream and Rwenzori Mountains National Park in the upstream. The emergency maintenance works in the upstream starts approximately 800m at Masule 1 from the park boundary. It is therefore anticipated that to the wild animals would be affected by noise from heavy machineries like bulldozers and increased traffic levels during the works in this particular area. The contractor shall therefore explore all available measures to prevent and mitigate all possible negative impacts including but not limited to working during day hours and monitoring noise levels.

In the downstream, there exists Queen Elizabeth Nation Park which is approximately 9km from the last emergency maintenance point. It is therefore anticipated that stream flow will be temporarily disrupted and this would impact on the availability of water downstream for the terrestrial wildlife. The contractor shall therefore put in place measures to ensure that stream disruption is minimized as possible by scheduling their operations.

c) Geology and Soils

The geology of the catchment is mainly built up of Precambrian metamorphic rock which constitutes of gneisses, quartzites, schists and varying amounts of mafic igneous rocks. Gneiss dominates in the northern part of the mountain range, while gneiss with schists of the Kilembe prevails in the southern part. Kilembe copper mineralisation occurs within an amphibolite unit of the Kilembe Series rocks that are part of the Ruwenzori fold belt.

Concerning rock strength characteristics, the schists are considered to have a medium erodibility, the gneisses a low erodibility, while the amphibolites have a very low erodibility. As to the weathering of the bedrock, the weathering rates in the Rwenzori Mountains are low, leading to weathering-limited slope evolution dominated by physical erosion processes. The catchment area is covered with Argillites with basal quartzites and amphibolites locally. Along the river, the site general lithology consists of granitized or high to medium grade metamorphic formations. The Argillites including elements of phylites and Schists and metamorphosed formations are present in this region.

There are four geological features in the Kasese district: partly granitized and metamorphosed formations, pleistone to recent rock formations, wholly granitized or high to medium grade metamorphosed formations and the rift valley geological features and formations.

- Pre-Cambrian: This comprises of the Kilembe series which is closely associated with the Buganda-Toro system. This system is the most expensive of the cover formations which occupy much of western Uganda.
- Cenozoic (Pleistocene to recent): This category covers some district areas such as the plains in Kasese Municipal Council, Muhokya, Karusandara, and Lake Katwe area where rift valley segments are quite evident.
- The Crater Lake comprising of volcanic rocks, and parts of Kitholhu and Munkunyu - Lake Katwe area.
- The permanent swamp area where sediments, alluvium, black soils and moraines occur.



Figure 5-1: Some of the copper tailings in Kilembe Subcounty

The soils are mainly non-hydromorphic and owe their development and characteristics to permanent or seasonal water logging conditions. The dominant soils are mainly organic soils ranging from clay loams, sand loams to Murrum in most areas of the catchment. The soils in Kasese District, are Organic, Podsol/ eutrophic, and Hydromorphic. These soils are vulnerable and are degraded because of unwise human activities such as over cultivation, cultivation on steep slopes, poor agronomic practices and over grazing causing soil erosion and fertility loss.

d) Drainage

River Nyamwamba and its tributaries originate from the Rwenzori Mountains a horst on the border with Democratic Republic of Congo and Uganda reaching an altitude of 5019 m.a.s.l. In Kilembe the catchment covers approximately 74.07 km². The slope gradients are rather high and regularly exceed the local and global thresholds for slope stability. The catchment is subdivided by the park boundary at 1700 m.a.s.l above the forest belt, a bamboo belt extends up to 3000 m.a.s.l. after which the healthier forest and shrub zone start. At the highest elevations in the catchment, rock outcrops and bog land prevail. Permanent glaciers are present on the Rwenzori peaks, but the Nyamwamba catchment does not drain the glacier area.

Downstream, the river continuously meanders due to extreme siltation and random deposition of boulders of different sizes, which reduces the river conveyance capacity. Consequently, flash floods are a common occurrence in the catchment. Previous studies have also attributed these floods to climate and land use changes (Jacobs et al., 2016).

Table 5-2: Delineated River Nyamwamba Micro-catchments

Number	Name	Area (km ²)
1	Upper Nyamwamba	79.85
2	Midstream Nyamwamba	31.87
3	Chonjojo	23.44
4	Rukoki	52.60
5	Downstream Nyamwamba	69.47
Total		257.23

Following the hydrological drainage, five micro-catchments were delineated in the Nyamwamba catchment (**Error! Reference source not found.**). However, the emergency maintenance works will be implemented in the parts of; midstream Nyamwamba and Chonjojo.

e) Hydrology

Historical annual river runoff ranges between 520 mm (in 1965) and 1769 mm (in 1967). The daily runoff ranges between 0.09 and 141.34 m³/s with an average annual runoff of between 1.55 and 5.26 m³/s (Table 5-).

Table 5-3: Annual and Monthly Flow at Weir for Nyamwamba 1HHP

Year	Equivalent runoff (mm)	Maximum daily runoff (m ³ /s)	minimum daily runoff (m ³ /s)	Average runoff (m ³ /s)
1964	823	16.58	0.09	2.44
1965	520	15.21	0.56	1.55
1966	1609	39.8	0.45	4.79
1967	1769	39.25	1.08	5.26
1968	1723	53.9	0.88	5.11
1969	899	65.73	0.43	2.67
1970	1163	49.87	0.28	3.46
1971	1316	83.2	0.13	3.92
1972	679	43.8	0.18	2.01
1973	669	30.78	0.18	1.99
1974	1215	141.34	0.33	3.61
1975	1584	74.66	0.18	4.71

On average, the months of May receive the most rainfall during the year with flows of around 7.28 m³/s while January is the driest month with flows averaging 0.73 m³/s (**Error! Reference source not found.**) at the N1HPP weir point.

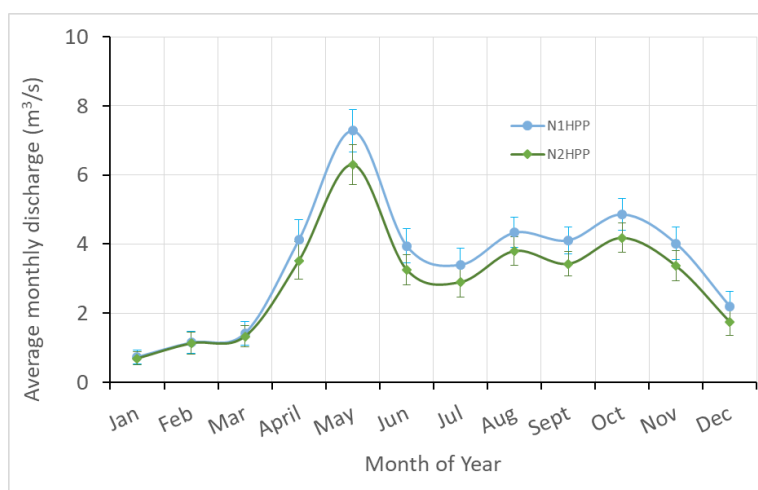


Figure 5-2: Average monthly discharges for flows of R. Nyamwamba at N1HPP and N2HPP weir points for the period 1964 – 1975. N1HPP is down streams of N2HPP.

Downstream, the river continuously meanders due to extreme siltation and random deposition of boulders of different sizes, which reduces the river conveyance capacity. Consequently, flash floods are a common

occurrence in the catchment. Previous studies have also attributed these floods to climate and land use changes (Jacobs et al., 2016).

f) Sediment loading in the river system

The estimated sediment yield was ranging from 0 – 66.16 t/km²/yr. Total soil loss from a watershed is usually significantly greater than the measured sediment yield, the bulk of the sediment is deposited at intermediate locations wherever the entraining runoff waters are insufficient to sustain transport, deposition occurs where gradients decline downslope, at the base of the slope. It is substantially explicit that sediment yield is most pronounced in areas around Kyanjuki and Masule.

g) Water quality

The water quality of the river is poor due to human activities within the Kilembe Township. It was observed that during the May 2020 unprecedented flood event most of the sewer lines and waste water management infrastructure were destroyed, the sanitary pipes are now directed into the river. Downstream near Road barriers people fetch and consume untreated water from river Nyamwamba.

The presence of heavy metals as a result of poor management of copper processing tailings has significantly impaired the quality of the R. Nyamwamba waters. Stock piles of copper tailings located in Kyanjuki which were left behind after closure of mines in 1970s are steadily leaching especially during high flows. According to Department of Geological survey and mines, more than 15 million tonnes of stockpiles were produced by the mines between 1956 and 1980. The Kilembe mines also drain from the tunnels with suspensions of copper sulphate and other dissolved minerals which make the water to appear blue-green. Previous studies have shown that this mine discharge might contain heavy metals like copper, cobalt, iron and lead. The discharge flows untreated through reed plantation after the processing plant joins a small tributary which then joins river Nyamwamba.

The water from the mines is not suitable for domestic and irrigation. It therefore, creates a big threat to the food chain where they accumulate over time. Additionally, the unregulated and inappropriate use of pesticides especially by farmers cultivating on river banks is perilous to the receiving environment. The water quality in downstream areas of Rukoki Subcounty slightly upstream of Fort Portal - Kasese Road Bridge about 5km from Kyanujki is impaired by sand mining. Sand mining aggravates the disaggregation of the bed sediment and increases the river turbidity and river bank destabilization.



Figure 5-3: Kilembe mines drainage from tunnels with suspensions of copper sulphate and other dissolved minerals.

Figure 5-4: A precipitate poised in a mine drainage

Sources of pollution are scattered across residential, agricultural, forested and urban landscape. Pollutants are transported to receiving water bodies in runoff following storm events or carried in irrigation return flows. Non-point source pollution is mainly by inappropriate land use and therefore can be controlled by improved land use management. The identified non-point source pollution in the basin includes the following:

- Small scale subsistence farming. The middle and lower Nyamwamba catchment is dominated by small scale farmers who use numerous agro-chemicals to control weeds, kill pesticides to increase crop yields. There is inappropriate use of chemicals and limited soil and water conservation structures.
- During the field visit it was also observed that much of the river banks have been encroached on through riverine cultivation and quarrying of sand especially the lower catchment areas which contributes to release of total suspended solids (TSS) into the rivers.
- Washing and bathing in the river, it's very common practice of the catchment; direct cattle watering from the river was also observed especially in the lower catchment areas.



Figure 5-5: Sand mining on the banks of River Nyamwamba

- Continuous scouring of stock piles on banks of river Nyamwamba and leach out from the derelict/Defunct Kilembe Mines/Copper pyrites in the sub-catchment.
- Improper solid waste management and disposal. Kasese municipality lacks gazetted site(s) for solid waste disposal and wastewater treatment. The existing solid waste composting plant is inefficient in the operations of facilities with leachate from the decomposing organics discharging to the environment untreated.



Figure 5-6: Legacy mine stock piles from the defunct Kilembe Mines.



Figure 5-7: Scouring of Stock piles on banks of river Nyamwamba

5.2. Socio-Economic Environment

a) Population

The population of Kasese District is estimated to be 694,987 people, of which, 51.3% (356,772) are females and 48.7% (338,215) males living in 139,406 households (UBOS, 2014). Currently, the district's population growth rate (2.45%) is below the national average of 3.4%. Around 75.5% of the population is rural. Only 3.7% of the population is aged over 60 years. This implies that the population of the district has a huge dependent base (Kasese District DDPII 2015/16-2019/2020). Additionally, high population growth rates have great influence on river catchment management and therefore this must be taken with great attention during planning and implementation periods. The River Nyamwamba catchment is in 10 sub counties with each contributing a different population pressure (Table 5-).

Table 5-4: Population distribution in sub counties comprising R. Nyamwamba catchment

Subcounty	Population	Land Area (sq. km)	Population Density
Bulembia Division	13,251	62.4	212
Muhokya	19,222	317.3	61
Kyarumba	42,195	155.8	271
Mahango	19,682	31.7	621
Central Division	31,711	25.9	1224
Bugoye	35,367	205.1	172
Nyamwamba Division	56,103	65.8	853
Karusandara	11,890	154.6	76
Rukoki	13,999	37.4	374
Kilembe	13,330	78.4	170

(Source: UBOS, 2014)

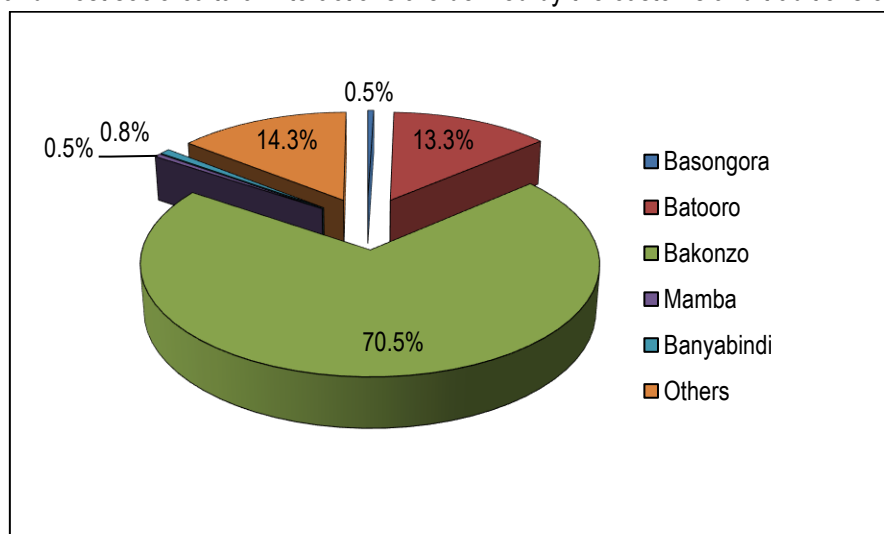
b) Household characteristic

According to HPHC (2014), total number of households in Kasese District are 139,406 with majority headed more than half (79.9%) male headed while 20.1% households were female headed. Additionally, 0.4%, 28% and 14% were headed by respective vulnerable household heads including children (10-17 years), youth (18-30 years), and older persons (60 years and above) The average household size is 5 in Kasese district, which is higher than the national average of 4.7.

9.2% of the total population in the district aged above 2 years has a disability. In general, the high household size is likely to reduce the standard of living of the households especially among child, women and elderly headed households given the limitation of meagre sole income sources to support the big household sizes. As a result, the household capability to absorb shocks and adapt to trends is affected.

c) Ethnic composition

Ethnicity is the state of belonging to a social group with common culture, tradition and language. Ugandans are classified by ethnic groups as listed in the Constitution of the Republic of Uganda. Kasese is a multi-ethnic district with many people of ethnic backgrounds. The main languages and ethnic groups that dominate the Nyamwamba catchment area are the Lukonzo and Lutoro of the Bakonzo and Batoro people respectively. Bakonzo falls within the broad Bantu category. Other ethnic groups in the district include Banyankole, Basongora, and Bakiga as highlighted in the figure below. (NPHC, 2014). The people in the proposed project area closely identify with their Mukonzo⁵ tribe and most socio-cultural interactions are defined by the customs and traditions of the tribe.



Source; primary household survey findings (2018)

Figure 5-8: Ethnic composition

d) Settlements and Housing

Settlement patterns

The catchment area has three major human settlement patterns, based on the livelihood (grazing and cultivation), level of development (along Road network) and the nature of relief of the area, as discussed below;

- The mountainous areas have scattered settlements; these include Mahango and Kilembe Sub Counties
- The lower altitude has linear settlement; these include Central Division, Nyamwamba, Bulembia, Bugoye and Muhokya which is both high and low.
- The medium altitude has clustered settlement; this is mainly Rukoki, however some parts of the Subcounty are low altitude.

Housing

The Universal Declaration of Human Rights of 1948 recognizes the right to housing as an important component of human rights. Similarly, the Government of Uganda recognizes the strategic social and economic importance of housing in the national economy and, particularly, to the socio-economic transformation of the country as highlighted in Vision 2040 (MLHUD 2016). The characteristics of dwellings and various aspects of households

⁵ Konzo means short.

living arrangements provide an important indication of the well-being of household members. According to the 2014 NPHC, the types of housing across Kasese district are presented below.

Table 5-1: Type of housing in the district

District	Status of dwelling units		Permanent roof materials	Permanent wall materials	Permanent floor materials
	Temporary	Semi-permanent			
			130,914	69,995	36,721
Kasese	8,090	96,933			

Source: UBOS 2014: NPHC

From the above information, Majority of the dwellings in Kasese district are semi-permanent.

The type of materials used to construct the household's dwelling unit gives a general picture of the structural condition of the building based on the durability and permanency of the materials and also provides a general indication of the socio-economic status of the household. Majority of the households in Nyamwamba catchment are semi- permanent.

Definition of the types;

- Temporary roof: thatch; tin; other
- Permanent roof: Iron sheets; tiles; asbestos; concrete
- Temporary Wall: mud and pole; unburnt bricks with cement; unburnt bricks with mud; wood; tin/iron sheets; others.
- Permanent wall: burnt/stabilized bricks; cement blocks; concrete/stones
- Temporary floor: total earth; rammed earth; earth (other); wood; others
- Permanent floor: concrete; brick; stone cement screed; tiles

e) Land use and land tenure

Land use

The land use types in the catchment area fall under Six broad categories namely; Forest, Water, Agriculture, Urban/Built-up areas, Grassland and bare land. According to Kasese District Environment Action Plan (2016-2019) 30% of the total land area in Kasese district is utilized for agriculture. The total area of land gazetted under forestry within the district is about 17.4 sq km with 2 Central Forest Reserves (CFRs) and 2 Local Forest Reserves which include Mubuku CFR and Kisangi CFR while the Local Forest reserves are Kanyampara and Nyabirongo. On the other hand, the district straddles 3 National parks, which it shares with the surrounding districts. The Rwenzori National Park, a world heritage site stretches into the Congo besides being shared between Kasese, Kabarole and Bundibugyo. Other parks are QENP and KNP shared by Kasese, Kamwenge and Kabarole (Kasese DEAP 2016).

Additionally the Kasese district is endowed with a number of rivers including but not limited to Nyamwamba, Mubuku, Nyamugasani, Lhubiriha, Rwembya and Sebwe. The Mubuku has a protection/ buffer zone of 100m and the small rivers of Sebwe, Nyamugasani, Nyamwamba, Lhubiriha and Rwembya have a buffer zone of 30m as per the National Environment (Wetlands, Riverbanks and lakeshores) regulations 2000 and all activities within the protection zone are regulated and prior permission granted by the relevant government authorities.

The socio-economic survey established that the biggest part of land in the catchment area (precluding conservation areas i.e. RNP and QENP) is used for agricultural purposes (79.7%), followed by Urban/Built up areas (10.4%) that house residential and commercial set ups (Figure 5-3).

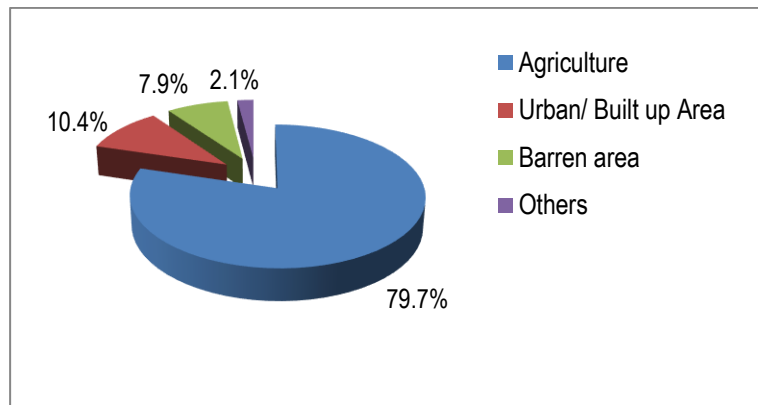


Figure 5-9: Land use

Tenure systems

There are four types of tenure recognized in Uganda under the Constitution (Article 246) and the Land Act (Cap 227) (Republic of Uganda, 1998): customary tenure, freehold, leasehold and mailo; a customary form of freehold tenure not thought to occur in the catchment area.

Customary Tenure: Over 70% of land in Uganda falls under customary tenure. Individual and communal customary tenures are recognised by the law. The land tenure in Kasese district is mostly customary and freehold. Customary land is land owned by indigenous communities and administered in accordance with their customs, with the Land Act 1998 listing individuals, family and common ownership as the types of customary land ownership. Customary tenure is the most widespread and the oldest tenure in Kasese whereby people of the present generation inherit land from the previous generation. The father of the family divides his land and gives it out to all children with the youngest male getting the lion share with the main house. The system has led to increased fragmentation of land and in turn to inefficiency in the agricultural production. The situation has been made worse by the increasing population which makes land fragmentation persistent.

In 2015, the ministry of lands, housing and urban development, in collaboration with food and urban development and Makerere University, selected Kasese district as a pilot for developing a digitalized system for customary certificate ownership implementation, which could be replicated at scale.

Freehold and leasehold tenures are also found in the catchment areas of public buildings and business infrastructure; as well as for private businesses. The lease hold tenure is granted for a specified period for payment of rent conferred by the state or private individual. It is granted by the land commission or urban authority. The freehold tenure is the type with full private ownership that is free of any obligations to the state other than payment of taxes and observance of land use controls imposed in the public interest. In the PIA, the lease hold tenure is not very common as the majority own land under the customary tenure.

Formal Land Ownership: According to the Socio-economic to the Nyamwamba situational analysis report, 2019, majority of population within the catchment were land owners. Average land ownership in the catchment was approximately 1 acre.

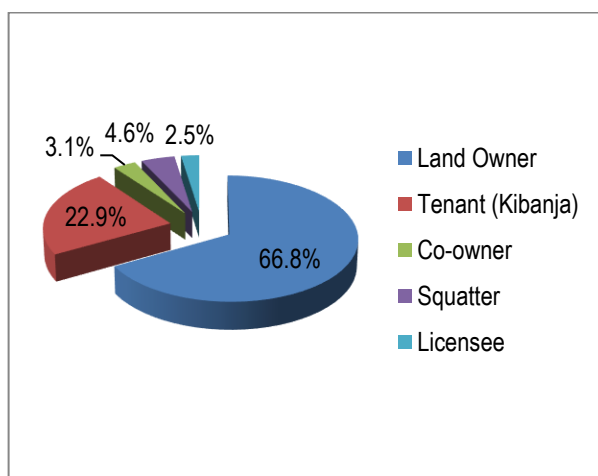


Figure 5-10: Land ownership

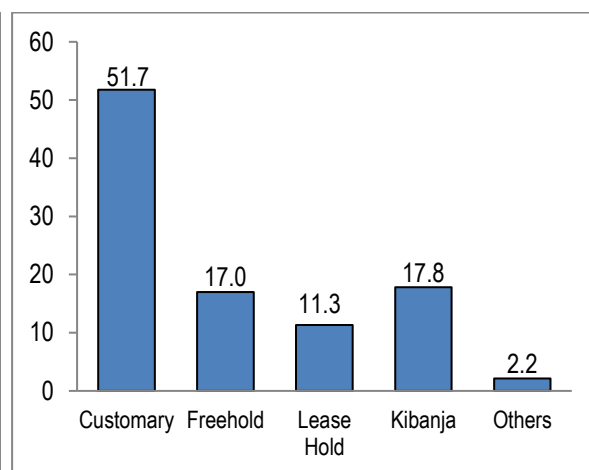


Figure 5-11 : Land type

Land conflicts

The Rwenzori region and Kasese in particular have experienced a series of land conflicts in the areas of Kabukero, Bigando and Rwehingo, Karusandara Subcounty. A report released by Rwenzori Peace Bridge of Reconciliation (RPBR), a local community initiative indicated that 80% of the conflicts, abuses and human rights violation in the district are as a result of land wrangles. The report also indicates that the conflicts are normally between family members and the different ethnic tribes. The conflicts involve the cultivators who are predominantly Bakonzo and the Basongora, the cattle keepers. In 2009, the government resettled pastoralists who had invaded Queen Elizabeth National Park in search of pasture after being evicted from Virunga National Park in DRC. Only 81 cultivators who were found on that land were given more than 270 acres while the pastoralists were given more than 700 acres in the same area. Since then, both sides have been clashing; each group accuses the other of encroachment. About 5 people have been killed and more than 50 heads of cattle mutilated in this conflict since 2009.

f) Social Infrastructure and Service Delivery

As defined by the United Nations Human Settlements Programme (UN-HABITAT), basic services include health and emergency services, water supply and sanitation, energy, social welfare, primary and secondary education, transport and communication facilities, public safety and the management of public open spaces. Baseline and monitoring indicators suggested by the UN-HABITAT programme follow a human rights-based approach with a focus on the following rights (among others): right to adequate housing (as part of an adequate standard of living), right to education, right to water and sanitation and right to health.

i. Education

Majority (70%) of district households send their children to UPE and USE schools. The minority (30%) of households whose children attend school in private facilities improved quality of education as the main reason. Current education infrastructure is not sufficient to meet the need of the district population. There are not enough government schools within 5kms of many households and there is insufficient teacher, classroom materials, latrine stances, and staff houses to ensure that the district receives quality education.

29.5% of households indicate that at least one child in the household has dropped out of school in the last 6 years. 98.6% of households with severe deprivations have had at least one child dropout of school. The catchment area has the highest concentration of households with children dropping out of school. The main reasons given for school dropouts were high school fees, pregnancy, marriage and orphan-hood.

Access to educationa) *Primary and secondary education*

Literacy rates in Kasese. School enrolment has increased following the recent passing of the Universal Primary Education (UPE) Policy, but the dropout rate remains high, especially for girls. According to the NPHC conducted in 2014, the illiteracy rates in Kasese District are highest among females with 39.6% of those aged 18 years and above being illiterate and 10.8% have never been to school.

A number of challenges affect the education sector in the catchment area and these include;

- School dropout due to lack of resources to pay school fees, some of these have turned into street children;
- Heavy domestic workload especially on the girl child;
- Early marriage and teenage pregnancy brought about by the cultural beliefs of the Bakonjo on the girl child; these are expected to get married and till the land, considering education less important for the girls.
- Floods which greatly affect school attendance especially in areas of Rukoki and Nyamwamba. This is because there are no bridges across the river and streams; those that were constructed were destroyed by the floods and have since never been rehabilitated. So, during rainy seasons, both the students/pupil and their teachers cannot cross to their school thus greatly affecting attendance and consequently performance.

The average distance to the nearest UPE school in the whole district is 1.53Km and that for USE schools is 3.87Km. Households in Lake Katwe, Buhuhira, Kyarumba, Kitwamba, Munkunyu, Bwesumbu, Bwera, Nyakiyumbu, Karusandara, Ihandiro and Kyondo have longer average distance to travel to UPE schools. For USE schools, the LLGs with the longer average distance to travel are Buhuhira, Rukoki, Bwesumbu, Lake Katwe, Bugoye, Kyarumba, Nyakiyumbu, Kitholhu, Maliba and Kilembe.

Education facilities in the district and the catchment area are presented in table 5-4 and table 5-5 respectively.

Table 5-2: Education facilities in Kasese District

Level of Institution	Number of Schools		Total
	Gov't Aided	Private	
Primary	233	161	394
Secondary	51	19	70
ECD's (Day care and Nursery)	0	107	107
Tertiary	2	0	2
Total	286	287	573

Source: Kasese District Local Government 3-Year District Environment Action Plan 2016-2019

Table 5-3: Education facilities within the catchment

Subcounty	Village	Name	Remarks
Mahango	Bukumbya	Bukumbia P/Sch	Gov't
	Kibalya	Kibalya P/Sch	Gov't
	Kyambogho	St. Peter Kibalya P/Sch	Gov't
	Nyamisule	Nyamusule P/Sch	Gov't
	Kyabwenge	Kabwaraba P/Sch	Gov't
	Kahokye	St. Kizito Sec Sch	Gov't
	Mahango	Kaburara P/Sch	Gov't
	Nyamutswa	Nyamutswa Junieur P/Sch	Private

Emergency Maintenance of River Nyamwamba for Flood Mitigation Against Damage of
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Subcounty	Village	Name	Remarks
Kilembe	Kibandama I	Kibandama Primary School	Govt Aided
	Kisanga	Kisanga N/School	Private
	Buhunga	Buhunga P/School	Govt
	Mbunga	Mbunga P/School	Govt Aided
	Nyakazinga	Nyakazinga P/School	Govt Aided
	Mburakasaka	Mburakasaka P/School	Govt Aided
	Kyambogho	Kyambogho P/School	Govt Aided
	Bunyandiko	Bunyandiko P/School	Govt Aided
	Buwatha	Buwatha P/School	Govt Aided
	Bulimi	Bulimi P/School	Govt Aided
	Ngangi	Ngangi P/School	
Rukoki	Buhaghura I	Buhaghura P/School	Govt
	Buhaghura I	Buhaghura Rcc P/School	Private
	Kasika	Kigoro P/School	Govt Aided
	Nyakabingo	Nyakabingo P/School	Govt Aided
	Kyamukoka	Nyakabingo Infant P/School	
	Nyakasojo Upper	Nyakasojo P/School	Government Aided
	Karongo	Karongo P/School	
Bulembia Division	Katiri	Katiri Nursery Sch	Private
	Katiri	Katiri P/Sch	Gov't Aided
	Katiri	Kilembe Valley P/Sch	Private
	Katiri	Mt Rwenzori Girls Sec Sch	Gov't Aided
	Bulembia	Bulembia P/Sch	Gov't Aided
	Bulembia	Royal Ranges Sec.Sch.	Private
	Bulembia	Rwenzori Terring Traing Sch	
	Kyanjuki	Kyanjuki P/Sch	Gov't Aided
	Masule A	Bunyakaliya N/Sch	
	Road Barrier	Rd Barrier Nursery Sch.	
	Road Barrier	Rd Barrier P/Sch	Gov't Aided
	Namuhuga North West	Namuhuga Kilembe P/Sch	Private
	Masule B	Masule P/Sch	Gov't Aided
	Kyanjuki	Twins Wing College	Private Aided
	Kyanjuki	Kyanjuki N/Sch	
Kyanjuki	Kilembe S/Sch	Gov't Aided	
Central Division	Base Camp Upper	Base Camp P/Sch	Gov't Aided
Nyamwamba Division	Umoja	Mighty Matyrs Nursery	Private
	Umoja	Nyakasanga Infant N&P/Sch	Private Aided
	Umoja	St. Peters P/Sch	Gov't
	Umoja	Uganda Martyrs Nyakasanga P/Sch	Gov't
	Kisagazi	Kasese Parents Sec Sch	Private
	Kisagazi	New Life Education Centre N&P/Sch	Private
	Kisagazi	Standard College Kasese	Private
	Phase I A	Mubuku Irrigation P/Sch	Gov't Aided

Subcounty	Village	Name	Remarks
	Sebwe	Road Side Junior P/Sch	Private
	Sebwe	Sebwe P/Sch	Gov't Aided
	Kanyageya Main	Kanyageya P/Sch	Government Aided
	Kihara	Kihara P/Sch	Gov't

Literacy status of people within the catchment area is presented in the table below;

Table 5-4: Literacy status

Subcounty	Literacy status	
	Literate	Not literate
Bulembia Division	4,203	1,574
Central Division	12,971	2,170
Nyamwamba Division	23,035	4,732
Kilembe	3,390	1,949
Rukoki	3,247	2,156
Muhokya	5,378	3,003
Mahango	4,918	2,957

Source; UBOS 2014

b) Tertiary education

There are only three vocational institutes in Kasese district, namely Margherita Vocational training institute, Lake katwe technical institute and Kasese youth technical. These are inadequate for the high number of school dropouts in the area. In order to attend technical college, students from the area have to travel to the neighboring areas such as Mbarara, Fortportal or even Kampala.

ii. Health

The coverage of health facilities is generally good in the district. The majority of the households (59.4%) generally travel between 1 and 4 kms to access a health facility, which is an acceptable standard in Uganda. Nevertheless, a significant number of households (17.3%), particularly in rural Lower Local Governments, travel more than 5 kms to the nearest health facility. The quality of most of the health facilities is categorized as good (38.0%), though urban LLGs have better quality health facilities compared to rural LLGs. The table 5-7 below presents the health units in Kasese district;

Table 5-5 : Health units in Kasese District

Unit	No.	Ownership	
		Government	Private
Hospital	3	01	02
Health Centre IVs	5	01	04
Health Centre IIIs	42	22	20
Health Centre IIs	69	55	14
Total	119	79	40

Within the catchment area, atleast every Subcounty has got a health facility. However, these are usually flooded with patients whenever River Nyamwamba floods and during rainy seasons. This is so because of an increase in the spread of water borne diseases within the catchment during such seasons. These diseases include Typhoid, Malaria, diarrhea, bilharzias, cholera and Onchocerciasis among others. This is partly attributed to the low latrine

coverage owing to the high-water table in areas close to the river. Table 5-8 below shows the health units within the catchment area.

Table 5-6 : Health units within the catchment area

Subcounty	Name of health unit	Level	Ownership	Ownership category	Status	Functionality
Rukoki	Buhaghura	II	Public	Government	OPD	Functional
	Bughalisa	II	Public	Government	OPD	Functional
	Nyakabingo	II	Public	Government	OPD	Functional
Nyamwamba	Saluti		Public	Government		Functional
	Kasese Mun Council		Public	Government		Functional
	Rukoki		Public	Government		
	Mubuku Irrigation		Public	Government		
Central division	Kilembe	II	Public	Government	OPD	Functional
	Railway		Public	Government		
	St. paul					
	Katodoba					
Bulembia division	Kilembe	Hospital			OPD and IPD	Functional
	Kilembe dispensary					Functional
Mahango	Mahango	II	Public	Government	OPD	Functional
	Buthale	II	Public	Government	OPD	Functional

Source; Kasese District DDPII

Despite the presence a health facility in each Subcounty, the health sector within the catchment still faces a number of challenges, these among others are discussed below;

- Due to the hilly nature of some areas and poor road network for example in Mahango, access to these facilities still remains a challenge;
- Most of the areas have only one health facility serving a wide geographical area; this implies that patients have to walk or be moved over long distances and some have reportedly died on the way to the facility.
- The health facilities are understaffed, this is in addition to lack of equipment and inadequate drugs ; and
- Most of these facilities lack staff quarters, this means officers have to move long distances to and from work every day hence limiting their efficiency
- Some of the health facilities were destroyed by floods refer to figure 14.

There is therefore need to extend support to the health sector within the catchment area by constructing more health units, staff quarters and providing medical equipment.



Figure 5-12: Kilembe hospital damaged during flooding

iii. Water

Access to water

a) **Water Sources**

The catchment is endowed with various water resources, which cover about 12% of the total land area. Average access to safe water is estimated at 61% (59% Rural and 66% Urban). The predominant water supply technology is by public tap estimated at 53.8%. The prevalent type of management is communal at 82.2%. The average access to safe water in the respective Sub-Counties is as indicated in the **Error! Reference source not found.** below.

Table 5-7: Access to safe water in river Nyamwamba catchment

SubCounty	Access to safe water (%)
Mahango	95
Kilembe	89
Rukoki	59
Bulembia Division	66
Nyamwamba Division	NWSC
Central Division	NWSC

Total water access is 61% with the catchment area. Findings of the Socio-economic baseline survey conducted indicate that (42.8%) of the people in Kilembe and Rukoki depend on River Nyamwamba followed by Yard taps/Public stand posts for water for domestic use as indicated in (figures 5-6 and 5-7). The maintenance works will increase the turbidity of the water but will not interrupt water supply for the community. The main uses for river water is mainly domestic i.e. washing chores, bathing, car washing etc and not for drinking. Therefore, care shall be taken and proper scheduling of construction time shall be put in place to ensure that turbidity of the river is controlled and where applicable a mobile water tank shall be used to supply water for domestic use.

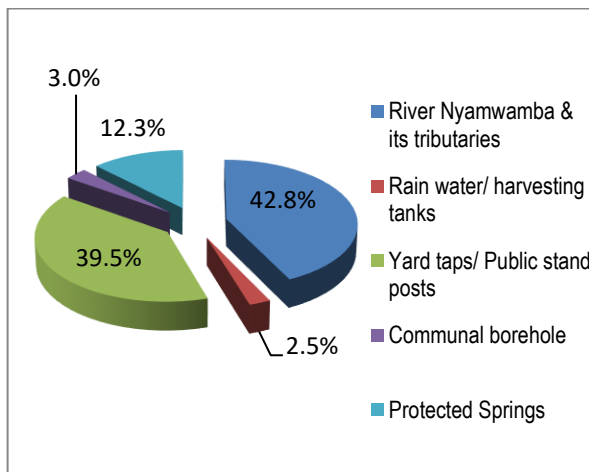


Figure 5-13: Sources of water

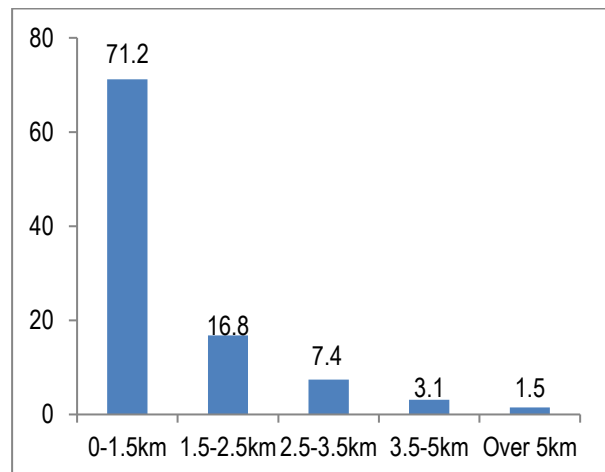


Figure 5-14: Distance to water source

River Nyamwamba is a the most reliable water source in the catchment however, given the current reports that indicated heavy contamination of the river with heavy metals, the communities have been refrained from using the water from the river until water quality reports are produced on the level of portability of water.

As such, majority of the people have resorted to alternative water sources like springs, rain water harvesting especially in Central and Nyamwamba divisions (photo a), boreholes (photo b), shallow wells and Gravity flow scheme operated by National Water and Sewerage Corporation for example in Mahango, Kihara, Misika, Nyamwamba division and central division).



Figure 5-15: Piped water supply in Kilembe subcounty.



Figure 5-16: A borehole in Nyamwamba village

iv. Sanitation infrastructure

Sanitation is a critical component of human life and this is reaffirmed by the importance the SDGs and NDP III attach to it. SDG 6 goes beyond drinking water to also address sanitation and hygiene. The construction of sanitary facilities, especially latrines is considered challenging in some areas due to adverse environmental conditions. These conditions include the presence of hard rock at shallow depths, collapsing and loose soils, and high-water tables, among others. This results in a lack of latrines in some households/communities, especially in water-logged and flood-prone areas of Kasese District. The Ugandan Government has various sanitation policies and strategies to address sanitation and hygiene in the country. Due to limited funding for the sub-sector however, implementation of these sanitation policies has not been adequate and effective, especially at Local Government Level (MOH 2014).

Types of latrines used

In the catchment area, latrines have been built in most villages but overall latrine coverage is low in areas close to river Nyamwamba increasing the risk of water borne diseases such as cholera, typhoid, dysentery, diarrhea etc whenever it rains or floods. The socio-economic survey assessed the coverage of human excreta disposal facilities in the catchment area. The results indicate that the traditional pit latrine is the most commonly used facility of human waste disposal at 94.4% (figure 11). Parts of central division and Nyamwamba Division were accessing flush toilets at 5.1% partly because these are urban settings served by NWSC facilities.

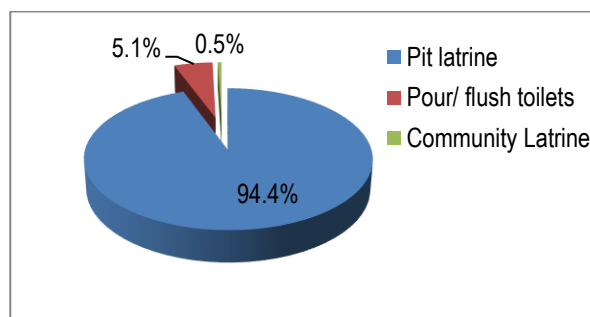


Figure 5-17: Type of facility of human waste disposal

Waste disposal methods/facilities

Kasese district has a compost site for domestic waste in Kidondo in Railway ward whereas the medical waste is incinerated. There are three incinerators in the district; at the municipal council premises, Kilembe mines and another mini incinerator. However, the waste management still remains a challenge. There is no waste water treatment plant in the district and so most of the solid waste and effluent from Kilembe mines, Kasese Cobalt Company and some health facilities is disposed off in River Nyamwamba. During preliminary consultations, it was revealed that the biggest cause of the silting of Nyamwamba is attributed to the waste disposal into the river. The indiscriminate waste disposal is also likely to increase risks to public health

v. Transportation

Road network

Kasese District has a total of 496kms of road network and the district is well connected with other regions by UNRA roads for example the Mbarara-Kasese road, port-Kasese road Bundibugyo road among others. However, the inter-village connectivity still remains a challenge especially in the mountainous areas. Seasonal changes affect the road conditions and during the rainy season potholes, water-logged areas and slippery mud make access difficult. In Mahango Subcounty for example, resources have been left untapped due to lack of access to the area (e.g. stone quarry in Bulamatsi village). The situation is not any better for service delivery and access to markets and other social infrastructure.

The road network in the catchment consists of;

- National (trunk) roads that connect the respective districts and the country with neighbouring countries;
- District roads, which link communities and connect the rural to urban areas and to the national road network;
- Urban road network and;
- Community access roads that provide access to and from schools, villages, community centres and national and district roads

Bridges

The catchment area is traversed by River Nyamwamba, and its tributaries. Connectivity of some villages and Sub Counties is therefore by means of bridges. However, since the devastating floods of May 2013, many of them were destroyed and have since never been rehabilitated. Examples of these bridges include; Kapoko – Nyakazinga, Misika – Kapoko, Base camp – Misika Bridge and Kihara – Nyakasanga connecting Rukoki to

Nyamwamba and Central division. The remaining ones including Katiri and Kyanujuki bridges are at risk if no interventions on the river are put in place. As such, many lives have been lost while trying to cross the river (photo c-d). The lack of bridges was also reported to be a major hindrance to access to social and economic services especially markets and schools.



Figure 5-18: Makeshift bridge between Masule and kyanjuki village



Figure 5-19: Children crossing the river in Road Barrier



Figure 5-20: Broken bridges in kilembe destroyed by floods

Transportation means

Public transportation was reported to be poor in mountainous areas. Walking, bicycles and boda bodas are the more common means of transport. Road network in the area has been destroyed by the floods making access to social services very difficult. The figure below shows the extend of the damage caused by the floods;



Figure 5-21: Damaged kilembe- Kasese town road



Figure 5-22: Damaged bridge between Kilembe and Maize factory



Figure 5-23: Some of the transport means in the catchment area

Energy

The energy sector in Kasese district comprises of both traditional and conventional energy sources that are either locally produced or imported. However, the dominant locally produced energy sources at both supply and demand levels are firewood, charcoal and hydro power. The energy consumed in households in the district is used mainly for cooking and lighting. Electricity supply

Kasese District is connected to the national power grid and has five hydroelectricity power dams;

- Bugoye power station with a capacity of 13 MW located along R. Mubuku in Bugoye Subcounty;
- Mubuku I power station with a capacity of 5 MW located in Kitoko;
- Mubuku II power station with a capacity of 10 MW located in Mubuku;
- Nyamwamba power station with a capacity of 9.2 MW located in Kilembe; and
- Lubilia power station with a capacity of 5.4 MW located in Ihandiro.

Within the catchment area there is only one hydropower plant (AEMS) which supplies to the national grid for onward distribution. Nonetheless, there is limited access to the national electricity network in the catchment area. During a rapid assessment conducted in Kilembe, community members, especially uphill, complained of not benefiting from the plant that is situated in their area. In the urban areas of central and Nyamwamba divisions, almost every household is connected to electricity but in rural area, some areas have been connected under the on-going rural electrification programme in Uganda. Majority in the rural areas though still depend on solar and kerosene.

Energy for lighting

Findings from a rapid survey indicate that majority of the community members (38.4%) use solar whereas 36.9% use Kerosene for lighting (figure 12) Electricity usage is at 21.7% and is expected to increase with the ongoing Rural Electrification exercise.

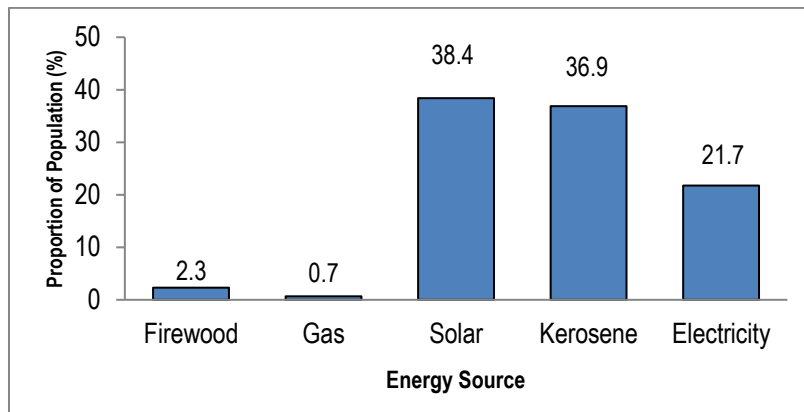


Figure 5-24: Energy used for lighting

A number of homes and shops in rural areas are equipped with solar panels used to charge mobile phones, supply radio to listen to music or provide light at night.

Energy for Cooking

⁶Firewood is the most dominant sources of energy at 98.8%. The use of traditional 3 stone stove dominates with 88%. Metallic charcoal stoves are commonly used in urban areas at 23%. Most of the households rely on firewood as the primary source of fuel for cooking (77.0%). Women use either a fireplace located inside the kitchen hut or outside. Charcoal and electricity are also used but to a lesser extent. Wood is typically collected by women near River Nyamwamba, wooded areas on the mountain or on communal grazing grounds.

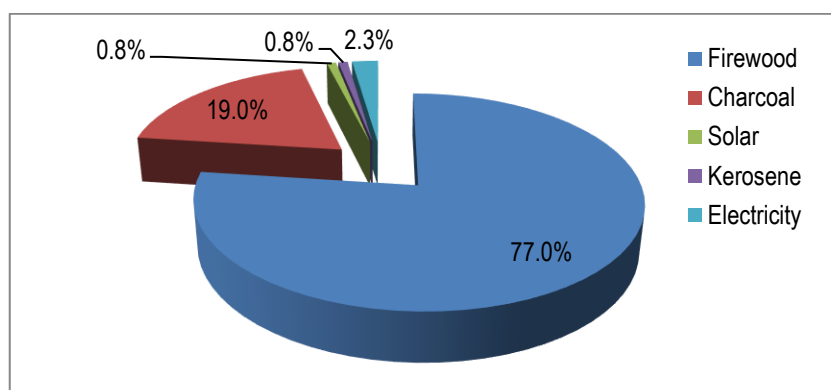


Figure 5-25: Energy used for cooking

It was estimated that each household uses approximately 100 kg of wood per month and as mentioned earlier, wood is the only source of fuel for cooking and heating water for majority of the households. Women reported to travel between 1 km and 5 km in order to collect or buy wood for fuel. During consultations with Subcounty leadership, Concerns were expressed about the over-harvesting of wood in the catchment area that has led to the cutting down of indigenous trees close to the river as well as uphill. This has overtime led to tremendous uphill soil and vegetation degradation exposing weathered rock and rending them to massive erosion during the rainy seasons.

⁶ According to the Kasese District Renewable Energy Strategy (2013-2020)



Figure 5-26: Nyamwamba II Hydro-power intake at risk

g) Gender inequality in the Project Impact Area

The district development plan states that the district is characterized by wide spread gender inequalities. For example, fewer women than men own land. Land ownership is predominantly customary. Given the patriarchal nature of the community in the PIA, some families still prefer to sponsor boys for tertiary education. According to the district development plan, some other gender challenges in the district include; less women than men in formal employment; high levels of Domestic Violence with 90% reported by women and high illiteracy levels among women than men; limited resources allocation to gender concerns. Similarly, when flood events happen to destroy the assets of the women, they find it much harder to reconstitute their livelihoods and standards of living because land acquisition in the area is majorly through inheritance which used for agriculture.

During the assessment and consultation with stakeholders in Kasese District, it was established that there are no indigenous peoples in the project area.

h) Vulnerable groups

In the project area, the assessment identified vulnerable groups to floods. The major vulnerable groups reported during the assessment included; the older persons(60+ years), and people with disabilities.

According to the Uganda National Population and Housing Census 2014, the population of the older persons (aged 60+) years in project area (Bulembia Division and Kilembe Subcounty) were 851 which accounted for 3.2% of the total population of 26,581 of the two administrative units.

The breakdown of traditionally protective structures such as families, and social customs and networks, exposes the elderly to economic insecurity especially as many are forced to look after dependants e.g. the disabled relatives and the grandchildren. The elderly have limited or no income and, despite limitations that age brings, most often engage in economic activities so as to meet their own basic needs as well as those under their care. The lack of respect and negative attitudes towards the elderly, keep them isolated from the very social structures and norms meant to support them, consequently heightening their vulnerability. Low income, ill health, food shortages and neglect by relatives are the main challenges faced by the older persons which are in most cases overcome by resorting to subsistence farming, selling excess crops, engaging in petty jobs or seeking support from other relatives. Due to this vulnerability it was noted that the older persons suffer disproportionately from flooding of river Nyamwamba than other population groups.

On the other hand, the National Population and Housing Census (2014), estimated that there were 3,455 people with some form of disabilities in the two administrative areas (kilembe Sub county and Bulembia Division).

Unequal access to public services and discriminatory attitudes towards PWDs limits their earning abilities. Despite their organisation into social and support groups like the Kasese District Union of Persons with Disabilities (KADUPEDI), PWDs still face significant hardships in accessing quality and non-discriminatory public services and compete with the able bodied for employment opportunities.

In the event of floods, PWDs suffer heavily from the effects of floods as result of inability move, escape and more dependent on other members to support.

i) **Communication**

According to the National ICT Policy framework, information is a resource that activates various sectors of the economy, making it possible for producers and consumers to be linked to markets. Availability of information provides an opportunity for the public to participate meaningfully in governance through engaging in public discussions and contributing to decision-making.

A survey conducted by UBOS 2016 shows that the most owned communication device in Kasese district is a mobile phone, followed by radios and televisions (UNHS 2016/17). In the catchment area, MTN is the dominant telecommunication network, followed by Airtel then Africell. The Radio stations in the district are mainly faith based;

- Radio Messiah – Anglican founded;
- Guide Radio – Catholic founded;
- Light Fm – SDA founded; and
- Engeya Fm – a government founded station under Uganda Broadcasting Services.

j) **Main economic activities**

The main economic activities within the catchment include farming, trade, agricultural produce, transportation, fish enterprises (capture fisheries and farm fisheries), mining, brick baking and laying, livestock keeping (cattle, chicken, piggery and goats), Craft making, Carpentry, Bakery, Alcohol distillation, Charcoal burning, Bee keeping, tree planting and commercial tree production, Mountain climbing, Lumbering, Tourism, Hydro power production. The various crops grown include; Bananas, Coffee, Fruits, Cassava, Beans, Avocados, Vanilla, Vegetables (tomatoes), ground nuts, maize, cotton, sugar canes, Irish potatoes, yams, vegetables (cabbages, tomatoes, onions, carrots, eggplant).





Figure 5-27: Different economic activities in the Nyamwamba catchment

5.3. Biological Environment

The biodiversity assessments in the project foot print have taken considerations of the flora and fauna including avifauna and aquatic life. Important to note is that the proposed footprint area is located in a highly degraded section of the river that largely contains settlements, schools, worship centres, health centers and other essential social services. Thus, the biological environment has been highly influenced by anthropogenic activities. The assessments were limited to hotspot areas of; Masule, kyanjuki camp, Kyanjuki village. Both direct and indirect observation methods were used to survey the fauna in the study area. Visual encounter along with interview method were employed to record different species in the area. In addition, the following methods were adopted to monitor the faunal diversity of the proposed project area.

a) Observation Survey Method and Consultation

While walking in the project area (transect) observations were made in selected sites and information recorded; Consultation with key informants (local experts-EO) and people / villagers living near to the project locations was also done to record information. The baseline data on faunal diversity was obtained by the following methods:

Review of literature: Secondary published literature e.g., River Nyamwamba catchment management plan was evaluated by respective subject matter expert to preliminary identify presence of different fauna and their habitat. Presence of fauna in area evaluated by means of secondary literature review.

- a) Consultation with experts: Consultation as well as Key Informants Interview was held with departmental staff of natural resources to identify presence of different fauna species. Consultation was held at district department project and HEP Staff.
- b) Rapid field survey: A checklist of species was developed based on secondary literature review. Presence and their habitation were crossed checked by means of field visit. Local people were asked regarding fauna species listed in checklist. Presence, habitation, possible impact on each type of fauna species as well as mitigation measures were discussed with local people. Availability of any other fauna species not-listed in checklist also recorded based on information provided by local people.
- c) Consultation with local community: Community consultation as part of Focus Group Discussion (FGD) also was performed to get information about presence of fauna species, their habitat, possible impact and suitable mitigation measures. Varieties of fauna species are recorded in the project area. Table 5-12 lists the different species of fauna present in the region.

Table 5-8: Fauna species present in project area

Type of Fauna	Scientific Name	IUCN Status
Mamal	<i>Colobus guereza</i>	LC
	<i>Cercopithecus spp</i>	LC
Rodents	<i>Mus musculoides</i>	LC
	<i>Lemniscomys striatus</i>	LC
	<i>Mastomys natalensis</i>	LC
Amphibians	<i>Amietia ruwenzorica</i>	LC
	<i>Phrynobatrachus mababiensis</i>	LC
	<i>Phrynobatrachus natalensis</i>	LC
	<i>Hoplobatrachus occipitalis</i>	LC
	<i>Afrixalus fulvovittatus</i>	LC
	<i>Hyperolius kivuensis</i>	LC
	<i>Kassina senegalensis</i>	LC

	<i>Hyperolius viridiflavus</i>	LC
	<i>Hyperolius cinnamomeoventris</i>	LC
Reptiles	<i>Kinyongia xenorhina</i>	NT
	<i>Trioceros johnstoni</i>	LC
	<i>Hemidactylus brookii</i>	NE
	<i>Python sebae</i>	NE
	<i>Hapsidophrys lineatus</i>	NE
	<i>Naja melanoleuca</i>	NE
Birds	<i>Balearica regulorum</i>	EN
	<i>Stephanoaetus coronatus</i>	NT
	<i>Cyanomitra verticalis</i>	LC
	<i>Cossypha niveicapilla</i>	LC

CR= Critically Endangered; EN= Endangered VU= Vulnerable species in all the 3 are referred to as **threatened**;
EX= Extinct; LC=Least Concern; NT= Near Threatened; DD= data deficient; NE= Not Evaluated

Due to the nature of river as shown the figure 5-28 below no fish was observed during the assessment.



Figure 5-28: Nyamwamba riverbed at Kyanjuki village

b) Flora characterization

This section of the river buffer is severely degraded and characterized by cultivation without robust rooting systems. Grasses, shrubs, herbs and trees have largely been replaced by crops. The pristine nature of most of the river buffer within project footprint has been disturbed by floods and human activities replacing the original vegetation with boulders and patches of tree plantations such as *Eucalyptus paniculatae* species combined with food crop cultivation. However, some sections still have some cover of shrubs and herbs comprising of *Datura suavelons*, *Phytolacca dodecandra*, *Acanthus pubescens*, *Tithonia diversifolia* as shrubs and *Brillantaisia nitens* as the dominant herb.

6. ANALYSIS OF PROJECT ALTERNATIVES

The purpose of this chapter is to present alternatives to the proposed project. The aim is to determine which alternative represents the most optimal balance between the environmental and economic costs and benefits. Five alternatives were considered in the environment impact study. The alternatives are compared in terms of their environmental impacts and their achievement of project objectives.

6.1. Alternatives to Locations

The project scope is to clear the river channel of sediments and boulder materials to allow for increased capacity of the flows and strengthen and stabilize the river banks as a way of reducing the impacts of flooding to the catchment communities. The choice of project location sites has been based on extent of damage including; infrastructure at risk and lives/livelihoods that require protection. Accordingly, Masule, Kyanjuki and Kyanjuki Camp are the areas most affected by the floods socially, environmentally and economically and require emergency actions. Therefore, working in any other sites other than this would not provide the anticipated economic, environmental, and social advantages in the short term.

6.2. Alternatives to Designs

The alternatives to the designs for emergency river maintenance works included; 1) use of gabions and dykes (2) erection of reinforced concrete embankment walls. Given the emergency nature of the anticipated works, the designs considered are for emergency river maintenance works was use of gabions and dykes. Moreover the use of reinforced embankments walls would require more time and costs.

6.3. Alternatives to operation

The construction works will require the use of heavy machinery such as excavators; graders; tipper trucks; aggregate crusher and other machinery as and when required. These machines are required for the types of works that will be carried out at each site. This being an emergency situation, the anticipated activities would be required to be undertaken in the shortest time possible and thus using these machineries will save time and is not labor intensive. The alternative to this would be to be employ local labor instead of the machines which would likely result into delays in addressing an emergency situation.

6.4. The “No Action” and “Action” Alternative

The No Action alternative in respect to the proposed activities implies that the status quo is maintained i.e. the emergency river maintenance works are not implemented. This option is not suitable in any way and it means the flooding problem and its associated impacts will continue hence the **No Action alternative** is not recommended.

Undertaking proposed emergency river maintenance works (“**Action alternative**”) remains the only viable alternative because of the necessity to manage flooding and its impacts on the area. The proposed project was designed to address adverse flooding impact on the environment.

All possible impacts of implementing this alternative were assessed and found to have practicable mitigation measures. The “Action” Alternative as described in this report is exhaustively discussed, particularly in Chapters 7 and 8.

7. EVALUATION OF ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS

This chapter identifies and evaluates significant environmental and social impacts that are likely to result from the implementation of proposed catchment management measures. The section contains a discussion of the environmental and social impacts of the proposed interventions and their mitigation and enhancement measures during the life cycle of the proposed project. While positive attributes of this project should be enhanced, mitigation measures will be put in place to minimize or eliminate the likely negative environmental impacts.

7.1. Impact Assessment Methodology

To evaluate the impacts associated with the proposed development, the following impact characteristics and an impact matrix were defined systematically. Potential and apparent impacts have been identified based on proposed activities to be undertaken. To establish impact significance, the following key concepts will be utilized as follows:

- **Impact identification:** Potential environmental impacts during the implementation of the different interventions of project development are identified and described including their causes.
- **Impact evaluation:** Each impact is evaluated based on extent, persistence, and ecological/social sensitivity, regulatory and legal compliance.
- **Impact severity:** Using a combination of the above criteria (extent, persistence, ecological/social sensitivity, and regulatory and legal compliance), the overall severity of the impact was rated as high, moderate, minor and negligible as per with broad categories of impacts for each rating.

Table 7-1 presents potential Impacts of the Proposed Project. Where potentially negative impacts were identified, mitigation measures to avoid, reduce or minimize them have been suggested and fully incorporated into the project designs while others would be implemented during project implementation as indicated in the project's ESMP. Good practice measures were identified and included in order to further minimize the impact of the proposed development. The proponent has agreed to these mitigation measures and they are, therefore, expressed as commitments.

7.2. Positive Impacts associated to emergency river maintenance works

A- During Pre-construction Phase:

No positive impacts envisaged yet at the stage of the project

B- During Construction Phase:

- **Creation of Employment opportunities:** The project shall create employment opportunities for both skilled (local skilled Labour) and unskilled (porters) over the project duration. The unskilled personnel shall come from the project area. This shall improve on the local household incomes as it is likely that most of the casual labour shall be procured locally. To improve on the local project sense of ownership and community participation, it is recommended that all non-technical labour slots be procured from the local community and priority be given to beneficiary household that will directly be affected by the project implementation. The employment opportunities shall be short-term and the magnitude of impact is expected to be moderate as it shall have reasonable change in the general employment landscape and community wellbeing.
- **Economic Benefits from sourcing construction materials:** The supply of construction materials shall provide economic opportunities for the suppliers of these materials. These present high financial benefit for suppliers. It shall be a short-term but significant socio-economic benefit.
- **Benefit to local retail business:** the construction works are expected to last about 8 months and having a workforce of about 50 people who shall require food and

Enhancement Measures

- The contractor shall observe OHS standards by provision of PPEs to all unskilled labourers who are secured within and outside the community
- All workers employed should be issued with contracts and should be paid in time. There should be streamlined recruitment system and documentation in regards to recruitment process. Non-Ugandans must have work permits.
- The contractor should disclose availability of employment opportunities before recruitment time to all for equal opportunities for all potential candidates.
- The contractor should have a clear policy on child labour, GBV, Sexual harassment and Abuse. The contractor shall prepare ESH code of conduct for the project and ensure it is signed, displayed and adhered to at all times.
- The contractor must ensure that the construction materials are procured within the country and to the extent possible within the project area.
- The suppliers must meet the necessary quality and environmental requirements and the contractor should therefore deal with suppliers that are accredited with relevant bodies where necessary.
- The contractor should investigate local capacity to supply construction materials, goods and services.
- The contractor should disclose procurement needs
- The contractor should have clear procurement procedures
- During sensitization meeting with the local communities, the local residents need to be informed about the project and how their businesses can benefit

accommodation, most of which shall be provided by local retail shops. This will represent a short-term economic benefit to the local retail owners.

- **Capacity Building:** The unskilled and semi-skilled workers employed by the project during the construction phase, will acquire new skills, knowledge and experience. Workers will be exposed to better techniques and work methodologies. Improved skills will build a critical mass of technicians, versed with skills related to gabion construction projects and this will not only benefit the contractor but also the local population at large during and after the project life. Although this is a long-term impact, only a few workers will be working on the project as already indicated. In addition, the time is very limited for the people to perfect the skills, thus the magnitude of impact will be low. Increased awareness on HIV/AIDS and other STDs, Malaria, and water borne diseases including COVID19. This will be undertaken through regular campaigns and distribution of condoms and sensitization and other SoPs by the contractor.

C- During Post-Construction Phase

- **De-silting and cleaning of built-up flood deposits at priority hotspot locations/sections of the river channel so as to increase the river's flood water carrying capacity.** With desilting and removal of boulders from the river at these sections, there will be increased capacity to route the flood flows.
- **Strengthened and stabilized river banks using embankment/dykes.** 1200m of river banks at Masule village, 2207m of river banks at Kyanjuki village and 2000m of river banks at Kyanjuki Camp (Namuhuga and Kyonjojo) will be strengthened and stabilized through placement of boulders and construction/installation of gabions at critical sections to protect them from scouring.

and this shall be scheduled under the contractor's stakeholder engagement plan (SEP)

- The contractor and subcontractors should encourage their workers to support businesses that meet the project accreditation and are in line with national laws.
- Provide training programs for the unskilled and semi-skilled workers; and
- Contractor should deliberately attach some identified unskilled and semi-skilled workers to technicians to ensure that the later acquire new or additional skills from the project.
- Conduct regular campaigns and sensitization meeting. This should be included in the contractors Stakeholders Engagement Plan (SEP)
- Open distribution of condoms to the workforce and communities. Putting in place information, education and communication materials on HIV/AIDS, GBV, and COVID 19 among others shall be incorporated in the contractor's SEP.

Enhancement Measures

- First track the construction phase to meet the intended purpose in real time
- Use of quality construction materials that can withstand external shocks from eroded boulders, high water velocity and weathering
- Sensitization of community members on the gazetted buffer zones to enhance river banks stabilization on the 30m protection zone provided for by the National Environment (Wetlands, riverbanks and lakeshores) regulations, 2000. Information packages shall be developed and disseminated to the public to mitigate against river degradation.
- Creating awareness to communities and agree on alternative livelihood activities like boulder mining for the construction industry.

- **Reduced flood risk to people, land and property by constructing Gabion Masonry:** Through the planned river maintenance works, there will be reduced flood risk to people, land and properties (20 Houses at Masule village, Kilembe Secondary School, Kilembe Hospital, Kyanjuki Bridge and 100 houses at Kyanjuki village and Kilembe Hospital staff Quarters, Katiri Bridge and 250 houses at Kyanjuki Camp (Namuhuga and Kyonjojo).
- **Reduced flood risk to businesses benefitting the local economy including the agricultural community.**
- **Reduced flood risk to hydraulic infrastructure including Nyamwamba HEP and Water Supply Schemes.** The existing hydraulic infrastructure projects – Nyamwamba I and II as well as the water supply schemes will be protected from destruction following future flooding events.
- **Reduced flood risk to paved roads and local roads.** Through the planned river maintenance works, there will be reduced flood risk to 2.5km of paved road and 5km of local roads.
- **Reduced flood risk to agricultural land and associated agricultural infrastructure** will enable more continual grazing and reduce risk of death/loss of livestock (40 goats, 60 chicken and 40acres of farm land at Masule village, 200 goats, 300 chicken and 40acres of farm land at Kyanjuki village and 200 goats, 300 chicken and 10 acres of farm land at Kyanjuki Camp (Namuhuga and Kyonjojo).
- **Safety issues along the river banks is secured;** at project completion, the local community will have a chance to enhance their income by protecting assets and commercial goods, and the continuity of business operations during the flood season.
- **Improved food security in the river catchment.** By controlling floods and protecting the river bank from bursting to people's farm lands, sufficient food crops shall be grown and harvested hence improving on food security.
- Improve public health and living conditions in the project area, especially for encroachment living households, reducing pollution of Nyamwamba River in areas adjacent to the intervention sections.
- Promote awareness on the existing laws and regulations on wetland, riverbanks and lakeshores protection. Information packages shall be developed and disseminated to the public to mitigate against river degradation.
- Strengthen/ develop community structures which can enhance internal community regulation through meetings and dialogues. This structure shall be documented under the contractor's SEP
- About 27,035m³ after trimming of the embankment. This material will still be used to construct temporary roads in areas where the roads are damaged by the floods

Positive impact on the Environment:

- The flooding, inundation and bad odors will be significantly reduced especially around Kilembe hospital, Barrier Road primary, Kilembe primary school and major trading centers along the river course through flood control works under the project.
- The project investments will achieve projects goal of an environmentally friendly, sustainable, and aesthetically pleasing environment
- The project is expected to protect downstream investments like Nyamwamba I hydropower project, settlements, roads, bridges, farms among others
- The project works are expected to be built to adapt to climate change and variability due to the recurrent flooding nature of the river
- The project is expected to enhance the ecosystem functions and services through re-enforcing the banks to control and accommodate adequate amounts of water in its course during the rainy season
- By desilting the river course and bed, impediments of river flow will be solved and water will freely flow and prevent further flooding of the river. Improve microorganism and matter distribution within the river

7.3. Negative Impacts associated to emergency river maintenance works

A- During Pre-construction Phase:

Impact due to acquisition of land for Camp sites including worker's camp, construction camp, temporary offices, access routes, vehicle equipment storage and parking yard:

- Temporary loss of asset (land) by the land owner for construction of contractor's Camp site.
- Generation of wastes including camp construction wastes, waste water, human waste, domestic wastes among others

Overall rating will be low because it will be reversible.

Increased waste generation:

The Project is expected to generate waste at camp sites. The solid wastes envisaged to be generated include soil spoils from camp site clearance, household waste from camp sites, and waste water from camp site.

Overall rating will be moderate because it will be reversible.

Loss of vegetation cover due to ground/site clearance and excavation works:

- During pre-construction phase, access routes to the various hotspots and area for installation of camp site shall be cleared. This means various tree species of *Eucalyptus paniculatae* species, *Datura suavelons*, *Phytolacca dodecandra* and *Acanthus pubescens* will be lost due to this. However, after the construction phase, access routes and the camp sites will be decommissioned and restored back to their natural states.

Proposed mitigation measures

Consultation with land owner and compensation. This procedure shall be publicized and documented under the contractor's CESMP and shall be guided by physical planning and act and National Environment Act.

The contractor at the end of his contract shall demolish and restore the section of land to as near to its original state as possible during demobilisation. Prior to demobilization, the contractor shall carry out early information dissemination and stakeholder consultations.

The demobilization procedure shall be included in the contractor's SEP.

This impact shall be made negligible with application of the above mitigation measures

- Waste bins properly labelled as per waste types will be strategically positioned in all places around the camp site to ensure that every waste generated is dumped into the nearest waste bin. All the waste bins will be emptied regularly by having all the rubbish taken to the approved dumping sites or sites designated by the contractor in consultation with district local authorities
- This impact shall be made low with application of the above mitigation measures
- Avoid unnecessary cutting of trees and vegetation clearance
- Limit both vegetation clearance of excavation to only areas of project influence
- Replacement planting of trees and revegetation at designated sites. For every tree cut, fifteen (15) trees shall be planted however this will depend on the quantity of land available for planting. Preferably indigenous tree species of bamboo, *Grevillea Robusta*, *Maesopsisemini (Musizi)*, *Azelia Africana*.
- Tree planting sensitization shall be undertaken for the communities within the area of project influence and house will be provided with tree seedling to promote tree planting campaigns.

The impact will be localized, lasting for a short period (only experienced during construction phase) and can be mitigated; the magnitude of impact is therefore assessed to be moderate before mitigation and will be reversible

Impacts related to Mobilization of Contractor, presence of Construction workers and association with local people:

- Social disruptions as a result of presence of Construction workers and association with local people during mobilization by Contractor
- Potential Spread of STIs, HIV/AIDS and COVID19
- The impact will be localized, lasting for a short period and can be mitigated; the magnitude of impact is therefore assessed to be moderate before mitigation and will reversible
- Properly disposal of the cleared debris ie trunks of trees deposited in the river course, broken bridge structures, housing debris, metals among others deposited along the river course during flash floods to designated dump sites as guided by the district environment officer
- Silt traps to be installed around stockpile to prevent erosion and subsequent silting of the adjacent river ecosystem
- This impact shall be made low with application of the above mitigation measures
- Site office or contractor’s camp established in consultation with authorities, local community in the vicinity and rightful land owners
- Village protocols discussed and initial awareness to workers as part of mobilization
- Contractor(s) is to ensure workers actions in and outside the work/camp area are controlled and village rules including code of conduct observed
- Ensure proper signage and security at camp, i.e., prohibition of unauthorized persons (especially children) from entering the camp, site office, or work area
- Contractor shall establish workers GRM using the project GRM guideline in annex 4 and ensure that ESHS codes of conducts signed by all employees and the conditions enforced
- Implementation of awareness and prevention program – Contractor and his / her workers
- Implementation of awareness and prevention program – Community or villages with in the selected localities
- Ensure strict adherence to SoPs by the contractor
- The contractor shall set up a worker’s grievance redress mechanism (GRM) and document all gender-based violence (GBV) responses mechanisms under the SEP
- This impact shall be made low with application of the above mitigation measures

Impacts related to Mobilisation of material and equipment:

- Potential Oil and fuel spillages from mobilised construction equipment on site
- Increased emissions or exhaust from vehicles and machinery
- Increased dust from generated by heavy vehicles transporting materials to and from work sites; and, uncovered loads on trucks and Dust from exposed stockpiles
- Increased traffic on access roads to the construction sites
- Overall rating will be moderate because it will be reversible.

B- During Construction Phase:

- Increase solid waste generation: The Project is expected to generate huge quantities of solid waste in form of muck including boulders of several cubic meters due to desilting of the river bed and course and project components including camp sites, materials pileup areas and other project components. Overall, an estimated 98% of 135,175m³ of the total muck/boulders generated would be reused in filling of gabions and the construction of embankments. All surplus suitable materials arising from excavation shall be used to construct temporary access roads where they are non-existent or damaged by floods. The contractor shall obtain permission from Kasese municipal council to use the gazetted waste disposal site. Other project wastes such as inorganic waste like metal scraps, plastic remains etc. will be effectively collected, re-used or recycled or safely disposed through registered vendors. This impact shall be localized

- Ensuring proper storage of materials. All construction materials including steel, lubricants, oil, gabion boxes and mattresses shall be stored in a dry store to avoid weathering or leaching into the environment
- Maintain construction equipment. Regular maintenance and servicing of construction equipment shall be done to prevent mal functioning and dangerous emissions of GHGs into the atmosphere
- Prohibit the use of machinery or equipment that produces excessive pollutions (e.g. generates dark fumes)
- Ensure that vehicles transporting dust producing materials are covered
- Regular dust suppression. The contractor shall use water buzzer trucks to water access routes and construction areas to suppress dust emissions
- Traffic management, Flags persons, speeds humps and speed limit signages shall be installed along all access routes to the sites.
- This impact shall be made low with application of the above mitigation measures

Proposed mitigation measures

- Boulders will be used to fill gabion boxes for bank stabilization and other tree breakages and Spoils shall be disposed off in gazetted places. About 27,035m³ after trimming of the embankment. This material will still be used to construct temporary roads in areas where the roads are damaged by the floods
- Excess boulders shall be distributed to stone crushers within the catchment for income generation. The contractor shall mobilise, train groups of individuals and supply them with hand crush tools to crush excess boulders generated from the site. This will inturn enhance income generation for the community (social corporate responsibility)
- The contractor shall identify construction companies who are willing to buy sand and boulders. The buyers shall identify temporal storage areas for the sand boulders.
- For the excess muck/ soil spoils, these shall be deposited in designated places approved by the district authority. The appropriate disposal area shall be identified by the district authorities (the natural resources department)

and of short-term nature lasting construction phase. Overall rating will be medium because it will highly likely but reversible.

- **River water sedimentation:** During the construction phase of the project, a range of earthworks and desiltation activities are anticipated at project components namely: excavation along river channel and embankments. These activities have great potential of exposing the land surface to the elements of erosion. Considering the gentle to steep slopes at all major project component points, the impact has high possibility of silting the water bodies downstream through sediment movement, collapse of embankments, and possible accidents to workforce. This impact will be noticeable in the downstream areas with high effect on the water quality in particular turbidity due to suspended solids and river and bed and bank siltation. It is anticipated
- Specific construction sites will have waste bins (plastic waste bins) to collect limited waste from the construction work and food waste and other consumables. They will be collected on a regular basis and be deposited in designated areas away from any water sources.
- Waste bins properly labelled as per waste types will be strategically positioned in all places around the site including camp site to ensure that every waste generated is dumped into the nearest waste bin. All the waste bins will be emptied regularly by having all the rubbish taken to the approved dumping sites or sites designated by the contractor in consultation with district local authorities;
- Hazardous waste including waste infested with oils and fuels shall be containerised and temporally stored at the campsite. This shall be disposed by NEMA certified waste company who will transport and dispose it in a gazetted area e.g Enviroserve in Hoima District.
- Notices prohibiting littering all around the site will be conspicuously erected to prevent careless littering of rubbish; provision of toilets/pit latrines, waste skips
- Contractors will undertake training and awareness campaign to all the employees on the requirements of environmental protection including proper solid waste management and measures to minimize waste production.
- This impact shall be made low with application of the above mitigation measures.
- It is proposed that temporary structures such as, any dumping sites, worker camps, toilets etc. be sited at safer distances from the water banks. At specific level;
- All excavated material not needed on site should be transported to stockpile areas that will be identified during the pre-construction phase with the help of Kasese district local government.
- the excavated material shall be used for back filling behind the gabion structure and re used as top soil cover during re-vegetation of cleared section of the project areas.

that during construction the turbidity of the river will be disturbed within a range of 2km downstream the project.

The impact significance before mitigation is medium given the level of construction works, the slope of the sites and the sensitivity of the receptor system.

- **Downstream impacts:** Installation of temporary structures including coffer dams during maintenance work, will have minimal and temporal impact on availability of water downstream. The structures will be constructed temporarily to divert the flow of water from the working area but channelling it to continue in the same river course. The magnitude of this impact is anticipated to be minor before mitigation.

- All stock piles will be well managed by the contractor through creating high embankments to limit any chance of movement of stock piled material and covering using tarpaulins to prevent dispersion by erosion agents like wind and water.
- Disposal of cut soil and all the debris trapped by the sediment traps will be undertaken outside wetlands, road reserves and fragile ecosystems (the riverine section) under the direction of the project supervising consultant who will approve disposal sites in collaboration with the local authorities. Such debris, for example, if it happens to be good rock, can be used to fill gabions to stabilise the river embankment
- There will be controlled clearance of vegetation and this will be limited to only sections that are required for the access and installation of the project infrastructure;
- Where possible, construction activities will not take place during heavy rains; and
- Disturbed areas will be re-vegetated using suitable indigenous cover grass of nappier and vossia.
- The anticipated impacts after of the implementation of the above mitigation measures will reduce to low.
- Temporary structures shall be designed in a way that allows minimum impediment of water that flows through the river course.
- Temporary structures shall be dislodged immediately after every construction phase to minimize on the flow impact downstream.
- Use of coffer dams shall be limited to periods when the river flow volumes are high.
- During extremely low flows, temporary structures shall not be required.

- **Impacts due to Oils, fuels and lubricants:** There is a high risk for environmental damage from the accidental spillage of petroleum products and chemicals on construction sites. This impact will be significant given that the machinery (excavators) will be at the river bank during site preparation works as they remove stones, rocks, etc. The potential is also likely to emanate from transportation, storage, handling and transfer of these fuels/oils for utilization as well as during maintenance of machinery at the machinery workshop. These have potential to smother aquatic life in waters.

The impact significance before mitigation is low given the magnitude of construction works and machinery to be used on site.

- **Impacts on surface water quality:** Noticeable sources of water contaminants during the construction phase include minor (small scale) spillage of fuels, lubricants and other toxic materials such as sulfuric acid used in equipment and machinery.

- The appointed contractor shall develop plans to deal with such possible emergency spillage situations. Such plans should include guidelines and measures for reporting spills, spill handling and response, training procedures, resource allocation and the supervision of containment and restoration procedures.
- It is important that, spills greater than or equal to 100litres of flammable/combustible liquids or waste oil should be immediately reported to the Project Manager who will then take appropriate action. Emergency preparedness will include critical examination of the construction process to identify potential hazards;
- There should be provisions for recovery of any accidental spillages of the oils and lubricants;
- There is need for an internal alerting system in case of spills. This is because; timely and accurate reporting of accidental spills can help to ensure quick and efficient response. Alerting system/plan should include clear and detailed information regarding sources and location of such risks;
- Separate standard storage rooms for oils, lubricants and related accessories be set and constructed as per specifications for such rooms (lighting, air circulation, etc.).
- The empties i.e. drums, jerry cans shall be under stringent control by a Site Environmental Officer to avoid their use by the locals since most of the materials at the site will be categorized as hazardous material.
- The project should recruit qualified and certified Environmental Officer to oversee all the Environmental, Health and Safety aspects of the plant;

This impact shall be made low with application of the above mitigation measures

- All fuels and oils shall be kept in drums or tight containers and secured in a well-constructed area with impervious surfaces.

Discharge of silt laden runoff and the disposal of waste and wastewater from the worker's camp. In addition, materials such as oil, diesel fuel, concrete additives, and solvents are likely to be stored and used at the construction sites and lay down areas and in construction vehicles and equipment. Storage and handling of these materials could lead to spills on site, along roads and in surrounding areas.

- Contaminated run-off from spill sites could adversely affect soils and vegetation and if it reaches the river, would have an adverse impact on water quality. The extent of this impact will vary depending on the size, frequency and timing of spills, in relation to flow conditions in the receiving waters and the nature of the materials involved, including their toxicity.
- During the construction of the project components, it is likely to result into increased turbidity and change the colour of the River water. In addition, the materials used in the establishment of these structures such as cement may result in increased concentration of ions such as calcium, silicon, aluminum, iron and sulfates to levels above the recommended national limits for (untreated) potable water available for water consumers.
- Inappropriate disposal of waste and wastewater from the camp site also has the potential to have negative effects on water quality. However, the extent of this potential impact will also vary depending on the location of discharge points and the dilution/mixing regime possible in the receiving waters.
- Impacts on the water body downstream will include; reduction in dissolved oxygen levels (BOD), increase the level of organic compounds (COD), nutrient loading causing increased algal growth, and the spread of pathogenic disease vectors. Uncontrolled discharge of waste would have a moderate adverse effect on water quality but this can be mitigated if appropriate measures are put in place.

The overall assessment of this impact before mitigation is high given the amount of waste (earthworks) expected on sites but could be minor depending on the weather conditions and application of mitigation measures.

- As found necessary depending on the quantities stored, the appointed contractor should build a wall bund around the storage area and also an oil/fuel separator to remove oil and grease from drainage water prior to discharge to adjacent water courses;
- Install wastewater treatment facilities (Silt Traps, sediment ponds) to treat wastewater from the project campsite and other construction facilities; a site construction waste and wastewater management plan will be designed and implemented in order to minimise environmental damage from construction activities. This will include regular refresher training sessions for construction workers as pertains to safe and proper storage, handling, use, cleanup, and disposal of oils, fuels and other chemicals and the implementation of a comprehensive spill response plan including equipment and training;
- The construction vehicles and equipment will be regularly maintained from a recognized garage off-site thus minimizing the potential for leakages;
- Secondary containment measures in areas where fuels, oils, lubricants and construction materials such as cement are stored and loaded or unloaded, including fueling points will be installed;
- In case of oil pollution, sedimentation and siltation, the contractor should halt construction activities immediately and recover the pollutant before it reaches the receiving water sources. In addition, the contractor should avoid washing construction equipment near water banks to avert pollution of receiving water sources;
- Provide disposal facilities for wastes at the campsite and properly allocate the dumping site;
- Undertake quarterly water quality monitoring between upstream and downstream of the project area to include; dissolved oxygen, nutrients (N & P), pesticides, oils, exchangeable ions and nuisance plants; and
- All stock piles will be well managed by creating high embankments to limit any chance of movement of stock piled material; they shall also be covered

- **Vegetation Clearance:** It is expected that the project will clear vegetation in the project footprint areas. These shall have minor impacts on especially terrestrial vegetation including; (agricultural land, grass cover and wood lots), though highly reversible, the overall impact shall be medium with high probability to happen.

at all times using tarpaulins to prevent dispersion by erosion agents like wind and water

With implementation of the above mitigation measures, the residual impact severity will reduce to low.

- Re-vegetation of project affected areas with the indigenous species to reinstate the lost vegetation cover. This will not only compensate for vegetation loss but also enhance the functionality of the water catchment for the river. Re vegetation will only be for trees lost during project implementation.
- The cut & spoil shall stockpile in a gazetted area and will be reused as silt banks for restoration purposes.
- Embankment protection of the riverine through construction of gabions, back filling and re vegetation to prevent further damage and flooding to the banks
- The contractor shall engage the tree owner, obtain a formal consent, to support the owner to harvest any mature tree or transplant if applicable. For every tree destroyed, the contractor shall provide at least seven seedlings as replacement.
- Encourage project affected communities to plant more indigenous trees through continuous awareness campaigns on tree planting by the contractor
- Minimize movement within the project foot prints, to avoid unnecessary trampling and destabilization of the ground which may trigger erosion
- Construct erosion control structures like sediment traps around the soil spoil stockpile to avoid or minimize occurrences of water run-offs and siltation that may end up in the low-lying areas.

With implementation of the above mitigation measures, the residual impact severity will reduce to low

- **Impact on aquatic ecology:**
- The construction works will temporarily disturb aquatic habitats through altering the river bed substrate.
- The impacts will be localized only on the river segments between the three selected hotspots for intervention due to water diversion during construction.

The overall impact shall be medium with high probability to happen.

- **Risk on soil erosion and landslide, embankment subsidence during construction of gabions:** The total length of embankment system of River Nyamwamba in selected hotspots is about 5.4km. Some sections of the river which will be improved are serious erosion hotspots and because these sections are mostly built on the Holocene strata where the sediments are soft. These strata have a high content of clay and organic impurities, often in the water saturated state so its load-bearing capacity is poor. Therefore, when flood season comes, a big flood with high tide peak will cause riverside landslide hence affect the construction area. Hence, it is the safest when contractor constructs in dry season because the months in this dry season are characterized with little rainfall.

The overall impact shall be high with high probability to happen

- Installation of temporary diversion structures such as coffer dams (sand bags and boulders) at particular sections during the maintenance works.
- Construction during heavy rainfall should be halted as water logged soils are easily eroded and on every end of working day, all movable equipment should be dislodged and park out the river buffer to avoid being eroded or damaged by flash floods;
- Disposal of cut to spoil should be done outside fragile ecosystems and water sources downstream and it should be done under the direction of the resident engineer who should approve disposal sites;
- Undertake quarterly water quality monitoring on parameters of turbidity and suspended solids 2km downstream to ascertain the right aquatic ecosystem conditions.

With implementation of the above mitigation measures, the residual impact severity will reduce to low

- The contractor should undertake all the construction phases in the dry season i.e the maintenance activity shall be schedule during dry seasonal
- Geo technical investigation shall be undertaken by the contractor before deploying heavy equipment at each work sites.
- The contractor must not leave any machinery with the river course or 50m within the buffer zone during the rainy season
- The contractor must get metrological updates on a daily basis to avoid the impacts of flash on both the machineries and the workforce.

Overall impact significance after mitigation will be medium

Impacts on community health and safety

- **Air pollution:** Air pollution from construction activities/sites has many sources;
 - **Emission generated from transportation (particulate matter):** Dust will obviously be released during construction activities at project structural areas and along the access routes. Dust will also be generated during the transportation of required construction materials from the different source points to the construction sites. Dust impact shall be more pronounced during dry weather however its impact shall be very minimal given the fact that most of the roads leading to the project sites are tarmac (Kasese-Kilembe) though the feeder roads to the project sites are mostly murrum. It shall also increase with increase in number of vehicles using the roads. There are several trading centers, schools, health centers and residential houses along the roads that can be affected by dust from frequent movement of constructional vehicles. Dust can temporarily hinder visibility for workers at sites, cover vegetation surfaces around the sites and in so doing slow down the rate of photosynthesis and affecting the quality of forage for animals; and affect respiratory health of workers and potentially local community members.

The overall impact shall be medium with high probability to happen.

- **Emission generated from machinery:** The concentration of pollutants depends on the type of materials, operating status and longevity of the engine.

- All unpaved haul roads will be continuously watered by watering trucks or constant misting, so that surfaces remain damp at all times when in use during construction. The Contractor will make provisions to have an adequate amount of water and appropriate equipment to disperse water onsite at all times. Prior to construction activities, the contractor shall engage the community leaders through meetings to disclose project activities.
- Gravel cover shall be applied to unpaved surfaces which are regularly used;
- Clearing of land will be carried out systematically - with clearing restricted to only the required areas so as to minimise disturbed and exposed areas;
- Routine maintenance of locomotives used at the sites
- Routine monitoring of air pollution levels especially for particulate matter and carbon dioxide
- Vegetation of decommissioned sites like camp sites and access routes after construction works
- Stockpiles of construction materials will be shielded from wind using bins and monitored daily during the construction phase. In addition, they will be located away from public and residential areas;
- A speed limit of 40km/h for light vehicles and 30km/h for heavy vehicles will be maintained on routes used to access the construction sites and speed control humps should be installed at every 30m interval

With implementation of the above mitigation measures, the residual impact severity will reduce to low

- Community awareness and sensitization about the proposed project will be created prior to construction activities so that community members become more vigilant and are aware of what to expect in terms of potential nuisances; and

The older machines are used, the higher concentration of pollutants is emitted, and therefore, machinery activities will affect physical environments in terms of noise, and air pollution. The project will carry out earthworks of approximately 135,175m³ and these will require high volumes of fuel to use in the machineries. Emission of carbon dioxide and carbon monoxide will be emitted into the atmosphere by these machines increase the levels of greenhouse gases in the atmosphere.

The overall impact shall be medium with high probability to happen.

- **Impact of construction noise and vibration:** The presence of heavy equipment/machinery on site including; land vehicles, dump trucks and lorries, Pump cars, Excavators and Wheel Loaders (for the excavation of the foundation trenches and desilting), rollers and Compactors, Motor Grader, Concrete mixers, Poker vibrators and Compressors among others shall also generate noise levels higher than the normal ambient levels along points of work and transit/haulage routes.
 - Noise and vibrations will generally affect people living along access routes, terrestrial and aquatic fauna and workers on site. Higher noise levels can cause discomfort and if consistently subject to it may impair hearing.
- Noise shall be a short-term impact limited to mainly noise intensive works and shall be medium in nature before mitigation since there are possible receptors.

- A grievance redress mechanism will be put in place to address grievances from local communities.
- Restore areas that are no longer in use by planting trees and grass.
- Personal protective equipment such as dust masks should be availed to workers;

Overall impact significance after mitigation will be low

- The appointed contactor shall prepare the contractor's Health and Safety Plan and the plan should detail the plans for managing noise and vibration to the community and the work force which is to be overseen by the HSE Manager for the project. However, the following should also be undertaken to address this concern.
- Appropriate wear including ear muffs and/or ear plugs shall be provided to the workers involved in high noise working environments.
- An inventory of facilities prior to the commencement of construction works should be done for future monitoring. The contractor should promptly compensate any individuals for any damages arising from construction activities if any especially due to vehicle accidents.
- Restricting major project activities such as major noise intensive works to day time hours to minimize any potential shocks in the nearby communities.
- Regular servicing, maintenance and appropriate repair of haulage vehicles and construction machinery with a potential to generate noise should be done;
- Since the impact of noise increases with increase in exposure time, the work schedules for workers will also be designed to limit the exposure time. No worker will be exposed to noise level greater than 85 dB (A) for a duration exceeding 8 hours per day as stated in the National Environment (Noise Standards and Control) Regulations, 2003.

- **Population influx:** Some increase in population can be observed due to employed workforce for the construction, and job seekers. A considerable influx of people to the area in search of jobs will temporarily put considerable pressure on natural and social services specifically health /sanitation, housing and water supply in the area where the workers' camps will be constructed. It can also increase on cases of socially unacceptable relationships leading to unwanted pregnancies, possible increase of HIV prevalence rates, COVID19 among others. It has already been indicated that the number of workers expected are few compared to the people in the project area and that most non-skilled will come from within the community. However, health and behavioral effects are usually long-term and affect other people indirectly. The magnitude of this impact was anticipated to be medium negative since the population will increase only during the construction phase of the project development.

Overall impact significance before mitigation will be medium.

- Use modern and new construction machineries and equipment which generate lower noise level.

Overall impact significance after mitigation will be low

- Involve local leadership in recruitment to ascertain identity of those getting employed (while putting into consideration the child labor aspect) and if possible, give them temporary identification if they are non-residents. No children under 18 years of age will be employed at the construction sites.
- Work closely with Local authorities to put in place code of conduct for all project workers. The contractor shall establish a grievance redress mechanism for workers and local communities. In addition, they shall implement referral path ways for GBV and VAC as provided in the project GRM guideline.
- Employ security guards in collaboration with the local security in the area e.g. Local council, police posts, GISO to ensure safety of project materials and to handle any security related cases professionally;
- Carry out sensitization and awareness among workers and communities regarding communicable diseases especially HIV /AIDS and COVID19 and must clearly be stated under the contractors SEP;
- Equal opportunities should be provided to communities so that they don't feel disregarded;
- Give priority job opportunity to able and qualified local staff;
- Plan for additional social services to cater for the workforce for example clinics, water and sanitation facilities at workers' camps;
- Put in place waste bins for solid waste and garbage collection at workers' camp to ensure that any wastes generated at the site are properly disposed off

- **Community health and social behaviour issues:** Community consultations revealed that the main social concern will be regarding sexual misconduct of contractor(s) and workforce and misbehavior of workers at the construction sites. Like any other construction site, cases may involve socially unacceptable behavior of workers as most of the workers on construction sites tend to be abusive, destructive to property and lack respect for the public. Behavior of the workers at the construction site may be provocative to the local community. Also, workers may engage in drug abuse leading to increased crime rates and mental illness prevalence in the community. Furthermore, construction workers may indulge in sexual activities within locals resulting family breakages, fatherless children and at worst increased spread of HIV/AIDS. Therefore, community health and social behaviour of construction workers need to be streamlined to acceptable local community norms. The magnitude of this impact was anticipated to be medium negative since most workers will be recruited from local communities, therefore minor consequences will be realized.

Overall impact significance before mitigation will be medium

Overall impact significance after mitigation will be low

- Sensitize construction workers on proper social behavior conduct and drug abuse and associated diseases. This should also be extended to the community in liaison with sub county CDO.
- Workers will be sensitized against sexual relations with the local;
- The contractor should have a written and implement HIV/AIDS policy on HIV/AIDS and alcohol consumption, and place signage on drug abuse and HIV/AIDS within the construction sites;
- Contractor should encourage the workers to go for HIV Counseling and testing and those found to positive should be provided with first line treatment;
- Any form of misunderstandings between construction workers and the local community should be kindly solved with the help of local leadership; and
- Enforce workers Code of conducts by penalizing non-compliant workers.

Overall impact significance after mitigation will reduced to low

- **Occupational health and safety of workers:** Most occupational health and safety issues during construction of project facilities and other associated structures may include, among others, exposure to water related hazards such as drowning, physical hazards from use of heavy equipment and cranes such as injuries; trip and fall hazards; exposure to dust and noise; falling objects. In general, construction site with all its features presents a hazard to the health and safety of workers, and the public. Nevertheless, most of the potential hazards are avoidable although minor injuries may be reported to be inevitable at most construction sites.

The magnitude of this impact is anticipated to be medium negative before mitigation.

C- During Post-Construction Phase

Damage of the constructed Structures either human or natural causes such as floods, biological/chemical weathering.

The magnitude of this impact is anticipated to in the long term and its probability to happen is medium

- Occupational risks shall be covered within the contractor's OSH plan that shall be prepared prior to commencement of works. Other specific measures include; work risk assessment, daily tool box talks, early flood warning system eg, siren and bells.
- Provide an adequate and appropriate person protective equipment (PPE) such as helmets, gloves, life jackets and other protective devices;
- Implement a fall protection program that includes use of fall protection measures like use of body harness, appropriate ladders or platform when working at height, and ensuring inspection, maintenance, and replacement of fall protection equipment;
- Construction of the gabions/dyke should be undertaken at the time of the lowest flow volume of the river to minimise drowning and other related hazards;
- Install appropriate signage (health and safety policies) at and near the construction sites including cordoning off construction sites
- First aid facilities should be provided on site and accessible to all personnel. It should among others contain rubber gloves, bandages, pain killers and cotton wool to cater for minor accident victim.
- Contractor should establish a worker's clinic and should also have other means of referral in case of major injuries.

Overall impact significance after mitigation will be low

Proposed Mitigation measures

- Ensure quality designs are prepared during the design phase.
- Ensure quality construction of the structures as well supervision during construction
- For sustainability, government should budget and appropriate emergency funds for routine maintenance of the river channel after every flood event

- Sensitization of the communities after construction shall be undertaken and include as requirement under the contractor's ESM//SEP during defect liability period.
- Protection of the restored section using live markers etc.

Overall impact significance after mitigation will be low

Table 7-1: A summary of Impact levels and their nature

No	Project activities	Project phase	Nature of impact		Permanency of impact		Magnitude of the impact*				Duration of impact*			Overall impact
			Direct	Indirect	Reversible	Irreversible	H	M	L	N	L	M	S	
Pre-construction phase														
01	Impact due to acquisition of land for Camp site	Pre-construction issues	Direct		Reversible		L					S		L
02	Increased waste generation	Pre-construction issues	Direct		Reversible		L					S		L
03	Loss of vegetation cover due to ground/site clearance and excavation works	Pre-construction issues	Direct		Reversible		L					S		L
04	Impacts related to Mobilization of Contractor, presence of Construction workers and association with local people	Pre-construction issues	Direct		Reversible		L					S		L
05	Impacts related to Mobilisation of material and equipment	Pre-construction issues	Direct		Reversible		M					S		H
During construction phase														
06	Increase solid waste generation	Construction	Direct		Reversible		M					S		L
07	River water sedimentation	Construction	Direct		Reversible		M					S		L
08	Impacts due to Oils, fuels and lubricants	Construction	Direct		Reversible		M					S		L
09	Impacts on surface water quality	Construction	Direct		Reversible		H					S		L
10	Vegetation Clearance	Construction	Direct		Reversible		M					S		L
11	Impact on aquatic ecology	Construction	Direct		Irreversible		M					S		M
Impacts on community health and safety (Air pollution)														
12	Emission generated from transportation (particulate matter)	Construction	Direct		Reversible		M					S		L
13	Emission generated from machinery	Construction	Direct		Reversible		M					S		L
14	Risk on soil erosion and landslide, embankment subsidence during construction of gabions	Construction	Direct		Irreversible		H					S		M
15	Impact of construction noise and vibration	Construction	Direct		Reversible		M					S		L
16	Population influx	Construction	Direct		Reversible		M					S		L
17	Community health and social behaviour issues	Construction	Indirect		Reversible		M					S		L
18	Occupational health and safety of workers	Construction	Direct		Reversible		M					S		H
Post construction Phase														
19	Damage of the constructed Structures either human or natural causes such as floods, biological/chemical weathering.	Construction	Direct		Reversible		M					L		L

Magnitude of the impact*: H=high; M=medium; L=low; N=negligible

Duration of impact*: L=long term; M=medium term; S=short term

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

8.1. Introduction

The approach to Environmental and Social Management would be to apply the key principles of environmental and social safeguards to all activities of the proposed project right from project planning through to implementation. For the proposed project, these principles would include:

- Prior assessment of environmental and social impacts;
- Minimization of potential impacts through design and other mitigation controls; and
- Monitoring of the effectiveness of suggested controls and their implementation including the grievance redress mechanism and the gender-based violence pathways.

The goal of the Environmental and Social Management and Monitoring Plan is to ensure that environmental and socio-economic issues continue to be fully integrated into the decisions of the developer while promoting resource allocation efficiency throughout the lifetime of implementing the sub-catchment management measures. This section is designed to ensure that the commitments/ mitigation measures in this project brief, and in any subsequent assessment reports, together with any license approval or similar conditions, are implemented.

8.2. Overview and Objectives of the ESMP

The environmental and social management plan (ESMP) is a tool that is crucial to effective environmental management which identifies mitigation and management measures to avoid, reduce, mitigate or compensate for anticipated adverse environmental impacts identified in the previous sections. The core purpose of the ESMP is to provide the Proponent and the Contractors with a practical guide to ensure compliance by all parties with the environmental requirements. This is achieved by the provision of a framework for comprehensive monitoring and control and the issues are addressed accordingly with the sequence of processes, such as pre-construction, construction and operation phases.

This document is a highly flexible management tool and it is proposed that the document is reviewed and updated to ensure that the environmental and social goals and objectives are cognizant of existing conditions and activities and recommend the appropriate risk management measures. The objectives of the ESMP are to:

- Ensure all activities are undertaken in accordance with applicable environmental and social legislation and regulations;
- Integrate environmental and social considerations into all decision-making processes (Inform an environmentally and socially sound and sustainable engineering design process);
- Ensure incorporation of beneficiaries views during project design and implementation.
- Protect biodiversity of terrestrial and aquatic ecosystem;
- Protect natural features and scenic values;
- Ensure through holistic management appropriate development and protection of the environment;
- Manage the impacts of climate change;
- Provide a framework for continually improving environmental performance and strive for best practice; and,
- Ensure environmental due diligence are met.

The ESMP contains a number of components crucial for effective environmental and social risk management with in the project, these include:

- Organizational Responsibilities (for various aspects of the ESMP implementation;
- Consultation and Information disclosure;
- Plan for mitigation of impacts during the different phases of the project or construction; and,
- Monitoring

8.3. The Environmental and Social Management and Monitoring Plan

8.3.1. Environmental and Social Management Plan

This is a summary of the approach in addressing potential environmental impacts, responsible authority for the impacts and the cost involving the impacts for emergency river maintenance sites. The approach to addressing the potential environmental impacts is to mitigate them and/or avoid the impact altogether. The scoping assessments anticipate that the major environmental impact will occur during the constructional phase of the project which includes deterioration to water quality, sedimentation, waste disposal problems and potential oil/fuel spillage.

A monitoring process will need to be established to check/ assess progress in implementation, the effectiveness of the mitigation measures suggested, and the resulting effects of the proposed management measures on the environment and communities. The process will begin during the pre-works assessments stage and continue into the operation phase. It will also include regular reviews of the impacts that cannot be adequately assessed before the beginning of the project, or which arise unexpectedly. In such cases, appropriate new actions to mitigate any adverse effects will be undertaken.

8.3.2. Environmental and Social Monitoring Plan

Monitoring is a vital component of impact assessment to combat uncertainties pertaining to unanticipated impacts, to ensure mitigation measures are working and to reassure public on the progress of the development. Progressive monitoring must accompany various stages of the project this section initially highlights in the table below. Environmental and social monitoring is as well a very important aspect of environmental and social management during the construction and operation stages of the project to safeguard the environment. The environmental and social monitoring plan comprise of surveillance programs to be carried out for the selected emergency river maintenance sites. MWE in collaboration with the NEMA will check whether the contractor complies and meeting the provisions of the ESMP during the construction. The Government is fully responsible to carry on with the environmental and social monitoring during the operational phase of the project.

8.3.3. Roles and Responsibilities

In order to enhance the potential for integrating sustainability concerns in the management measures, it is important to assign clear roles and responsibilities to actors so as to ensure that environmental and social plans are implemented effectively.

8.3.4. The role of NEMA

In consultation with Local government (LG) Authorities, and in collaboration with the other Agencies (especially NFA, Directorate of Environmental affairs, and Directorate of Water Resources Management), NEMA will monitor all environmental phenomena in order to assess possible changes in the environment and their possible impacts. NEMA and the Lead Agencies will also monitor implementation of the management measures with a view to determining the

immediate and long-term effects of the measures on the environment. An environmental inspector appointed by NEMA will closely observe the implementation process.

8.3.5. The role of Kasese District Local Government

The DLGs will supervise the implementation of the interventions according to the specifications, designs and methods prescribed. They will also approve any proposed changes and will continue to monitor the interventions even beyond the project. They will also help in mobilizing the communities and settling any disputes during and after implementation. The focal points for environmental matters in the LG will be office of the district natural resources department and the environment officer, while the District Community development officer will be the focal point for social development related issues.

8.3.6. The Role of Ministry of Gender, Labour and Social Development

Social Development Sector (SDS) that promotes issues of social protection, gender equality, equity, human rights, culture, decent work conditions and empowerment for different groups such as women, children, the unemployed youth, the older persons and persons with disabilities. The sector through The Community Based Services Departments (CBSD) at district level shall ensure that communities are empowered to appreciate access, participate in, and manage community-based initiatives brought about by the project for improved livelihoods and social security for all. The focal point personnel at the ministry shall be the sociologists and the Occupational Health and safety officer and at the district level the community development officer shall be the focal point personnel. The Role of the Ministry of Water and Environment (MWE)

Although the contractor will have the primary role in delivering on the measures set out in the Plan, MWE will have the ultimate responsibility for ensuring that the sub-catchment management measures are delivered. In this respect, MWE will review and approve contractor plans for delivery of the actions contained in the Plan, review contractor performance through monitoring, environmental and social audits, and inspection to ensure that all proposed mitigation measures are implemented. The Project implementation unit is anchored within the Ministry of water and environment structures with competent project staffs including Engineers, Hydrologists, Environment and Social specialists. These shall be responsible for supervising the daily activities of the contractor.

8.3.7. The Role of the Implementing Contractor

During pre-works assessments, and during implementation of the emergency river maintenance works, the contractor will be responsible for ensuring compliance with all relevant legislation as well as adherence to all environmental and socio-economic mitigation measures specified in the Plan. MWE is also responsible for monitoring of compliance for the site-specific contractor's ESMPs.

8.3.8. The Monitoring Team

A monitoring team will be formed at district level. It will be composed of officials from the departments of Natural Resources, Works, Health, Physical Planning and Community-Based Services Department (CBSD). The team will be headed by the Chief Administrative Officer. In addition, the political leadership including the district executive and council shall continue to play their political oversight and mobilization to ensure successful implementation of the project.

8.4. Environmental Monitoring

The aim of monitoring is to detect whether a negative environmental or social impact has occurred and to estimate its magnitude. Monitoring may also work as an early-warning system to reveal critical indicators, unanticipated impacts and sudden changes in impact trends. Monitoring is also useful to determine the effectiveness and enforcement of different mitigation measures including compliance with World Bank safeguard policies and the country's environmental and social laws and regulations, and provide guidance for adjustments. Some of the parameters to be monitored are given below;

8.4.1. Physical and Chemical Environments

Water quality: It will be important to monitor the water quality before commencement of construction works so that there is a comparable analysis done during construction and after construction. The sample points should be the same at all phases of monitoring. A water quality monitoring programme should be implemented to document any water quality changes during the construction phase, and whether these can be related to the Project. Water quality data should include at least the following:

- Dissolved oxygen content
- Air and water temperature
- pH
- Turbidity
- Conductivity
- Total dissolved solutes
- Total dissolved phosphorous (P)
- Total dissolved nitrogen (N)

8.4.2. Socio-economic Environment and Health Issues

Monitoring the human environment will focus mainly on socio economic and health issues. The most outstanding issues are how the project affected peoples (PAPs) will cope with the influx of workers and outsiders who will reside in their midst for 8 months, and the possible health consequences of such an event.

The impact of a large influx of a more educated and better trained group on a resident population can be overwhelming. These could include: marginalization due to the fact that new arrivals have more resources and skills than the resident population; increased morbidity and mortality because of health and psychological problems; food insecurity; loss of common property such as common grazing areas and access to water; and finally, disruption in the social fabric of a community, the break down in social co-operation, kinship ties and normal reciprocity.

- Introducing measures that are preventive is essential, and this is the underlying goal of the mitigation measures suggested in the preceding chapter. However, without proper and effective monitoring, many of the mitigation and enhancements will not be realized including but not limited to carrying out sensitization and awareness among workers and communities regarding communicable diseases especially HIV /AIDS and COVID19; equal opportunities provided to communities so that they don't feel disregarded among others.

A number of health issues are vital to the safety of the population during the construction and operational phases of the Project. It will be important that the proponent puts in place a clinic to manage the day to day health aspects of the project. The following are some of the health risks that may be encountered during the implementation of the project; Malaria, HIV/AIDS, COVID 19, cholera, dysentery and minor work injuries among others. Monitoring them

will involve the visits of a medical doctor/officer on the Project site. It is recommended that monitoring be ongoing and more thorough checks be made at 2-month intervals starting at the beginning of the construction phase. Some of the issues to be monitored should include:

- Distribution and use of mosquito nets for the workforce
- Distribution of condoms for the workforce
- Rapid test on COVID 19 for the workforce
- Sanitation conditions in the camps, work area and nearby Trading Centers, including number and condition of latrines, rubbish disposal, etc.
- Adequacy of safe drinking water supplies for the work force
- Conditions of local clinics
- Availability of first aid kit
- Waste Management & Debris Removal
- Site Restoration
- Compensatory afforestation & plant survival rate

8.5. Social monitoring parameters

- Introducing work safety programmes and facilities for workers during the construction phase
- Compensation for Acquisition for camp sites including any social conflicts related to land acquisition
- Safety at Work
- Gender participation in works
- Awareness program on HIV/AIDS and COVID 19
- Noise levels around sensitive locations
- labor influx
- child and forced labor
- security of communities during project implementation
- status of all grievances and their resolutions including SH/SEA/GBV

8.6. The Environment and Social Management and Monitoring Plan

A monitoring and feedback mechanism would be required to effectively implement and monitor the environmental and social management plan. This would ensure proper implementation of proposed mitigation measures and also to effect mid-course corrections. Monitoring would be carried out on a regular basis using standard methods of various environmental attributes by suitably qualified personnel.

A monitoring plan has been prepared taking into account project activities (as shown in Chapter 5). The recommendations in this report would provide a basis for tracking progress of the proposed project activities with regard to sound environmental and social practice and mitigation measures.

The purpose of the plan is to detect violations, ensure compliance with the set laws, and check whether the necessary permits are in place as required. MWE and its constituent departments will oversee the implementation of the management measures, and will ensure regular monitoring of the implementation of the Plan. In addition, the LGs particularly the departments of Natural Resources, and Community-Based Services, will ensure all measures and interventions on the ground are environmentally sound and socially acceptable. NEMA and MoGLSD will advise them accordingly.

Table 8-1: Environmental Management and Monitoring Plan for the Potential Impacts of the Proposed Project

Impact Mitigation			Impact Monitoring			
Potential Environmental Impact	Mitigation Measures	Mitigation Responsibility	Parameter to be Monitored	Frequency and Means of Verification	Monitoring Responsibility	
Pre-construction Phase						
Impact due to acquisition of land for Camp sites including worker's camp, construction camp, temporary offices, access routes, vehicle equipment storage and parking yard	<ul style="list-style-type: none"> → Temporary loss of asset (land) by the land owner → Generation of wastes including camp construction wastes, waste water, human waste, domestic wastes among others 	Consultation with owner and compensation	Contractor, MWE	Compensation for Acquisition for camp sites including any social conflicts related to land acquisition	Continuous through Grievance log sheets and written minutes and agreements	Contractor, MWE
Increased waste generation	<ul style="list-style-type: none"> → Wastes generation including soil spoils from camp site clearance, household waste from camp sites, and waste water from camp site and construction waste 	<ul style="list-style-type: none"> → Specific construction sites will have waste bins (plastic waste bins) to collect limited waste from the construction work and food waste and other consumables. → Waste bins properly labelled as per waste types will be strategically positioned in all places around the site including camp site to ensure that every waste generated is dumped into the nearest waste bin. → Hazardous waste including waste infested with oils and fuels shall be containerised and temporarily stored at the campsite. → Notices prohibiting littering all around the site will be conspicuously erected to prevent careless littering of rubbish; provision of toilets/pit latrines, waste skips 	Contractor, MWE	<ul style="list-style-type: none"> → No. of waste skips put in place → Functional waste management plan, approved dumpsite locations → Quantity of waste generated → Proper use of waste disposal facilities → Total dissolved phosphorous (P) → Total dissolved nitrogen (N) 	Continuous over implementation of the Project through inspections and reports	Contractor, MWE

<p>Loss of vegetation cover due to ground/site clearance and excavation works</p>	<ul style="list-style-type: none"> → Loss of vegetation → Loss of terrestrial habitat → Increased erosion suspension of sediments/silt materials in the water thus impacting on the water quality → Increased turbidity of water bodies due to gravel extraction and excavation 	<ul style="list-style-type: none"> → Replacement planting of trees and revegetation at designated sites. → Properly disposal of the cleared debris ie trunks of trees deposited in the river course, broken bridge structures, housing debris, metals among others deposited along the river course during flash floods to designated dump sites as guided by the district environment officer → Silt traps to be installed around stockpile to prevent erosion and subsequent silting of the adjacent river ecosystem → Limit the excavation works to only areas to desilted 	<p>Contractor</p>	<ul style="list-style-type: none"> → No. of trees replaced/replanted → Meters of silt traps installed → Areas of works → Disposal of debris and vegetation spoils → Site Restoration → Compensatory afforestation & plant survival rate 	<p>Continuous over implementation of the Project through inspections</p>	<p>Contractor, MWE and LG</p>
<p>Mobilization of Contractor, presence of Construction workers and association with local people</p>	<ul style="list-style-type: none"> → Social disruptions 	<ul style="list-style-type: none"> → Site office or contractor’s camp established in consultation with authorities, local community in the vicinity and rightful land owners → Village protocols discussed and initial awareness to workers as part of mobilization → Contractor(s) is to issue work contracts ensure workers actions in and outside the work/camp area are controlled and village rules including code of conduct observed → Ensure proper signage and security at camp, i.e. prohibition of unauthorized persons (especially children) from entering the camp, site office, or work area 	<p>Contractor, MWE-Project implementation Unit (PIU) & Village Elders or Local Council Representatives and the grievance redress committees</p>	<ul style="list-style-type: none"> → Complaints of incidents between workers and villagers reported verbally or formally and recorded in the Grievance/ Complaints Register → No of children entering the camp → Number and effectiveness of signages → labor influx → child and forced labor → security of communities during project implementation → status of all grievances and their resolutions including SH/SEA/GBV 	<p>Continuous during activities – checking records for complaints, consultations with workers about protocols, issues raised</p>	<p>MWE</p>

	<ul style="list-style-type: none"> → Spread of STIs, HIV/AIDS and COVID19 	<ul style="list-style-type: none"> → Implementation of awareness and prevention program – Contractor and his / her workers → Implementation of awareness and prevention program – Community or villages with in the selected localities 	Contractor, MWE-PIU, Ministry of Health, NGOs, District Health Services	<ul style="list-style-type: none"> → No. of reported infections → Increased adherence to relevant SOPs → Posters or Materials based on COVID19, STIs or HIV/AIDS installed at work sites including in and around the camp or site office → Information campaign under the Sep and CESMP 	Continuous over implementation of the Project through checking contractor's records, consultation with employees and NGO or Service provider	MWE
Mobilisation of material and equipment	<ul style="list-style-type: none"> → Oil and fuels spillages → Increased emissions or exhaust from vehicles and machinery → Increased dust from generated by heavy vehicles transporting materials to and from work sites; and, uncovered loads on trucks and Dust from exposed stockpiles 	<ul style="list-style-type: none"> → Ensuring proper storage of materials → Maintain construction equipment → Prohibit the use of machinery or equipment that produces excessive pollutions (e.g. generates dark fumes) → Ensure that vehicles transporting dust producing materials are covered → Regular dust suppression 	Contractor, DLG	<ul style="list-style-type: none"> → Air quality, emissions, dust and particulate matter → Use of tarpaulins → Loading of vehicles → Stockpile areas 	Monthly or immediately after complaint – periodic visual inspections; any particulate matter and smoke managed as per ESMP	Contractor, MWE
→ Construction Phase						
Impacts due to Oils, fuels and lubricants	<ul style="list-style-type: none"> → Oil and fuels spillages → Increased emissions or exhaust from vehicles and machinery 	<ul style="list-style-type: none"> → Ensuring proper storage of materials → Maintain construction equipment including use of cleaner equipment. → Prohibit the use of machinery or equipment that produces excessive pollutions (e.g. generates dark fumes) 	Contractor, DLG	<ul style="list-style-type: none"> → Air quality, emissions, oil spillage, soil and water quality 	Monthly or immediately after complaint – periodic visual inspections for and emissions spillage as per ESMP.	Contractor, MWE

<p>Increase solid waste generation</p>	<ul style="list-style-type: none"> ↪ Wastes generation including soil spoils from construction site, household waste from camp sites, and waste water from camp site and construction waste 	<ul style="list-style-type: none"> ↪ Specific construction sites will have waste bins (plastic waste bins) to collect limited waste from the construction work and food waste and other consumables. ↪ Waste bins properly labelled as per waste types will be strategically positioned in all places around the site including camp site to ensure that every waste generated is dumped into the nearest waste bin. ↪ Hazardous waste including waste infested with oils and fuels shall be containerised and temporally stored at the campsite. ↪ Notices prohibiting littering all around the site will be conspicuously erected to prevent careless littering of rubbish; provision of toilets/pit latrines, waste skips ↪ Contractor is to prepare a Waste Management Plan (WMP) as part of its ESMP 	<p>Contractor, DLG</p>	<ul style="list-style-type: none"> ↪ No. of waste skips put in place ↪ Functional waste management plan, approved dumpsite locations ↪ Quantity of waste generated ↪ Proper use of waste disposal facilities 	<p>Continuous over implementation of the Project through inspections and reports</p>	<p>Contractor, MWE and LG</p>
<p>Risk on soil erosion and landslide, embankment subsidence during construction of gabions</p>	<ul style="list-style-type: none"> ↪ Impacts on water quality due siltation ↪ Loss of terrestrial land ↪ Damage of equipment 	<ul style="list-style-type: none"> ↪ The contractor should undertake all the construction phases in the dry season ↪ The contractor must not leave any machinery with the river course or 50m within the buffer zone during the rainy season ↪ The contractor must get metrological updates on a daily basis to avoid the impacts of flash on both the machineries and the workforce. 	<p>Contractor</p>	<ul style="list-style-type: none"> ↪ Water quality 	<p>Quarterly over implementation of the Project through water quality monitoring</p>	<p>MWE. LG</p>

<p>River water sedimentation/ impacts on water aquatic ecology</p>	<ul style="list-style-type: none"> → Loss of some aquatic habitat → Increased suspension of sediments/silt materials in the water thus impacting on the water quality → Increased turbidity of water bodies due to gravel extraction and excavation → Construction materials are washed out into rivers/ streams, and adjacent areas → Reduced water availability to users in the controlled sections 	<ul style="list-style-type: none"> → Revegetate the buffer zones of the riverbanks. → Limit the project footprint to designated areas. → Undertake construction works during low rainy seasons → Works in river areas or flood plains must be undertaken with extreme care and precautionary measures → Temporary structures are to be removed immediately after works and river bed be restored → No dumping of spoil in rivers or streams → Spoils or stockpiles will not be located near or on slopes within 15m of rivers/ streams → Placement of diversion ditches around stockpiles → Debris, spent fuel or oil and waste material is not to be dumped in or near rivers/ streams → All waste materials generated during works and chemicals used will be stored in secured containers away from surface waters or rivers → No wastes are to be dumped in or stored close to stream → Contractor ensures wastes are not discharged into the surrounding water bodies or rivers and that all wastes are disposed of in approved appropriated sites 	<p>Contractor/MWE/DLG</p>	<ul style="list-style-type: none"> → Areas restored → Sediment level and water quality monitoring → Temporary structures removed → River training /Scour protection → No Stockpiling in or near rivers or streams, flood plains 	<ul style="list-style-type: none"> → Monthly or immediately after complaint – through reports and testing → Monthly or as required → After event check designs → Visual observations of selected project sites or work areas (river and streams) 	<p>Contractor, MWE and LG</p>
<p>Vegetation Clearance</p>	<ul style="list-style-type: none"> → Loss of vegetation cover → Impact on micro climate → Generation of vegetation wastes → Loss of terrestrial habitat 	<ul style="list-style-type: none"> → Limit vegetation to specific project footprints → Dispose-off all vegetation wastes in designated dump sites → Restore/ re-vegetate the sites after demobilization 	<p>Contractor</p>	<ul style="list-style-type: none"> → Acre of vegetation cover restored → No. of trees replanted 	<ul style="list-style-type: none"> → After demobilization 	<p>Contractor, MWE and LG</p>

→ Impacts on community health and safety

<p>Operations of construction plant and equipment generating noise and vibrations</p>	<ul style="list-style-type: none"> → Increased dust from generated by heavy vehicles transporting materials to and from work sites; and, uncovered loads on trucks and Dust from exposed stockpiles → Human accidents and injuries → Noise to the surrounding villages and communities → Noise and vibrations impact on the construction workers 	<ul style="list-style-type: none"> → construction equipment and vehicles maintained and checked to minimize noise → Contractor will develop a schedule of operations with village chiefs and MWE to identify days of work and no work and hours for certain activities → Limit noisy construction activities to day time hours, i.e., noisy construction activities prohibited between 8am and 6pm while for work sites adjacent to schools between after classes and 6pm depending on the noise produced or time as agreed to by the School Authority → Agree works schedule with village leaders → Provide workers with noise abatement equipment's (ear muffs etc.) → Complaints regarding noise will be addressed by the Contractor → Locating related machines away from sensitive receptors → Ensure that vehicles transporting dust producing materials are covered → Regular dust suppression → Ensuring that vehicles and machinery are being driven by qualified drivers including their sensitisation. → Ensuring proper signages, speed limits/humps and sensitisation. → Flag-person-ship → PPEs 	<p>Contractor, DLG</p>	<ul style="list-style-type: none"> → Adherence to agreed schedule of works and time of works → Complaints (No. of logged noise complaints and resolutions) → Worker's safety equipment → particulate matter → Use of tarpaulins → Loading of vehicles → Stockpile areas → PPEs and reported accidents 	<p>Monthly or immediately after complaint – review Schedule of Construction (ensure the Schedule is being adhered to)</p>	<p>Contractor, MWE</p>
<p>Population influx</p>	<ul style="list-style-type: none"> → Social disruptions → Spread of STIs, HIV/AIDS and COVID19 	<ul style="list-style-type: none"> → Implementation of awareness and prevention program – Contractor and his / her workers → Implementation of awareness and prevention program – Community or villages with in the selected localities 	<p>Contractor, MWE, Ministry of Health, NGOs, District Health Services</p>	<ul style="list-style-type: none"> → No. of reported infections → Increased adherence to relevant SOPs → Posters or Materials based on COVID19, STIs or HIV/AIDS installed at work sites including in and around the camp or site office 	<p>→ Continuous over implementation of the Project through checking contractor's records, consultation with employees and NGO or Service provider</p>	<p>MWE</p>

Community health and social behaviour issues	<ul style="list-style-type: none"> – Sexual misconduct leading to family breakages, fatherless children – Abusiveness – Destructive behavior towards community property – Lack respect for the public – Increased crime rates and mental illness prevalence in the community 	<ul style="list-style-type: none"> – Continuous sensitization of the workforce – Settling work principals and guidance to followed by the workforce – Imposing disciplinary action against workers to violate working guidance – Set up a grievance and redress team to handle community- workforce related issues 	Contractor, LG	<ul style="list-style-type: none"> – No. grievance recorded and handled – No. of workers disciplined, suspended or expelled from work – No. sensitization sessions conducted 	– Continuous throughout the project life	Contractor, LG
Occupational health and safety of workers	<ul style="list-style-type: none"> – exposure to water related hazards such as drowning – physical hazards from use of heavy equipment and cranes such as injuries; trip and fall hazards; exposure to dust and noise; falling objects 	<ul style="list-style-type: none"> – Provision of PPEs – Installation occupational safety policies – Sensitization and awareness of the workforce and community – Cordoning off using warning tapes or temporary barrier – Installation of warning signages on site – Limit entry into the construction site 	Contractor	<ul style="list-style-type: none"> – No. PPEs provided – No. signages and policies installed – No. sensitization sessions conducted 	– Continuous throughout the project life	Contractor
Right of way	– Encroachment on the buffer zones of the river banks	<ul style="list-style-type: none"> – Stakeholder sensitizations – Relocation of encroachers – Restoration activities e.g., revegetation 	MWE/NEMA/DLG	<ul style="list-style-type: none"> – No of sensitizations – Number of encroachers relocated – Area revegetated. 	– Throughout the project implementation	MWE
Post-construction Phase						
	Damage of the constructed Structures either human or natural causes such as floods, biological/chemical weathering	<ul style="list-style-type: none"> – Ensure quality designs are prepared during the design phase. – Ensure quality construction of the structures as well supervision during construction – Routine maintenance of the river channel – Sensitisation of the communities – Protection of the restored section using live markers etc. 	Contractor, DLG, MWE	Reported failures of the structures	Quarterly through inspections and reports.	Contractor, MWE, Kasese District Local Government

8.7. Grievance Redress Mechanism

Effective grievance redress mechanism gives an opportunity to the organization to implement a set of specific measures to ensure good governance accountability and transparency in managing and mitigation of environmental and social issue of a particular project. The community grievance redress shall consist of grievance committees and shall be formed at the community level, construction site, Sub County, District and MWE. A separate GRM for workers shall also be formed at the Construction site. For details and operation of GRM, refer to Annex 4.

9. CONCLUSIONS

It is concluded that the potential environmental impacts that would arise during the phases (pre – construction, construction and post construction) of the emergency river maintenance works project will be relatively minor and localized and acceptable provided that the mitigation measures set out in the ESMP are incorporated into the design and implemented properly. The project seeks to reduce on the impacts of flooding to sub catchment communities.

9.1. Key Findings

Key findings are summarized below:

- The selected project sites for emergency river maintenance works are not situated in any protected areas or areas of conservation value, including primary forests, terrestrial reserves or community managed protected areas. The Project will not create any impacts on cultural sites and does not pass through densely populated areas. The national park downstream approximately 9km from the project footprints therefore it is anticipated that the project activities will have minimal impacts.
- The impacts on flora are minor as most of the areas were cleared under past construction activities for river maintenance works as well continuous flood events and are already disturbed;
- The potential impacts on terrestrial wild life including rare and endangered species is considered to be insignificant and the project does not encroach upon any national or locally recognized areas;
- Possible impacts on the social environment are likely to be low provided MWE and the Contractor adhere to standard health and safety practices and coordinate closely with the nearby communities who themselves had offered their support towards the project;

9.2. Conclusions

- There are no protected areas, archeological or cultural sites, rare or endangered flora and fauna to be affected by the river maintenance works. The rapid environment assessment found no endangered terrestrial species likely to be affected.
- Mitigation measures were developed to avoid and minimize potential environment and social impacts of the project. These measures are incorporated in the design process of proposed river maintenance works. Based on the screening exercise, the Project does not traverse any protected area, cultural site, endangered or rare species in the selected project locations.
- The impacts during the preconstruction, construction and operation phase of the project are minor and moderate. All impacts incurred during these phases will be mitigated to avoid or minimize the potential impacts. To ensure these mitigation approaches are implemented, the approaches will be included in the contract documents as part of contractor's ESMP.
- Following the requirements of the ESMP, the contractor will be required to provide a detailed CESMP based on the model set out in this report. Monitoring contractor's compliance with the ESMP will be undertaken by MWE, NEMA and Kasese District Local Government. Monitoring reports will be submitted to MWE and Kasese District Local Government.

- From the screening exercise and community consultation, it is concluded that the level of assessment required meets the requirements. Therefore, no further assessment is required and that the Project complies with the environmental Categorization of Category B.

10. REFERENCES

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11. ANNEXES

Annex 1: Design Drawings (attached in a separate file)

Annex 2: Stakeholders consulted during pre-feasibility study for the construction of river emergency maintenance works

Name	F/M	Title	Organization	Contact
1. Mwesigwa Bosco	M	Power Plant Assistant	Seams Hydro -Nyamwamba II Hydropower Scheme	0781 756886
2. Hassan Otim	M	Health and Safety Officer	Seams Hydro -Nyamwamba II Hydropower Scheme	0782 234179
3. Moreen Kagende	F	Health and Social Officer	Seams Hydro -Nyamwamba II Hydropower Scheme	0777 537331
4. Winfred Nakalema	F	Health and Safety Officer	Seams Hydro -Nyamwamba II Hydropower Scheme	0704 172 448
5. Mukiiza Derrick Kwikiriza	M	Client Site Manager	Seams Hydro -Nyamwamba II Hydropower Scheme	0703 690 466
6. Joshua Miramagho	M	Principal Assistant Secretary	Kasese District Local Government	0772 680343
7. Augustine Kooli	M	Senior Environment Officer	Kasese District Local Government	0782 544 911
8. Robert Musabe	M	Power Plant Assistant	Seams Hydro -Nyamwamba II Hydropower Scheme	0775 555891

General Summary of key issues of concerns during stakeholder consultations

- Most of the communities affected by the flood did not receive assistance.
- The river channels are silted with a lot of debris and boulders
- Some communities recorded death in the flooding events while others recorded deaths and casualties in previous floods.
- Villages had been flooded with some properties, possessions and houses destroyed during flood.
- Infrastructures damaged during the flash floods had been repaired and restored back and services along the roads had improved several months after the flood.
- Access to schools, health centers, banks, shops and markets is most of the time hindered during heavy rains and floods.
- A degraded and collapsed river banks exposing it to more erosions

Stakeholders Issues and Concerns

Through narrative qualitative analysis, key issues were raised and responses provided by the MWE technical team from the various stakeholder consultations made during the pre-feasibility analysis of the project.

Table a): Summary of key issues from the consultation meetings

Stakeholder	Name	Title	Key issues	Responses
District Leadership	Joshua Miramagho Augustine Kooli	Principal Assistant Secretary Senior Environment Officer	<p>A number of institutions that have stake on river Nyawamba. These have differing impacts on the river. There is need to engage all institutions intensively on implementation of the emergency river maintenance works.</p> <p>Sand miners divert the river extensively. Something must be integrated in the report on how these people are to be managed.</p> <p>Population increase in the along the river led encroachment on fragile ecosystem which is causing mudslides and landslides hence leading into silting of the rover course.</p> <p>The district leaders should be involved in the planning and implementation of emergency river maintenance works as they are in better positions to sensitize but also mobilize the masses.</p>	<p>All stakeholder hall be engaged during the implementation of the emergency works</p> <p>For the sand miners, MWE will mobilize them to undertake trainings and identify alternative livelihoods such as stone crushing</p> <p>MWE has developed catchment management plan to address some of these issues</p> <p>MWE will work closely with the district team during the planning and implementation of the works</p>
Seams Hydro - Nyamwamba II Hydropower Scheme	Mwesigwa Bosco Hassan Otim Moreen Kagende Winfred Nakalema Mukiiza Derrick Kwikiriza	Power Plant Assistant Health and Safety Officer Health and Social Officer Health and Safety Officer Client site manager	<p>Water diversion is being done on the river by farmers and sand miners, especially during dry seasons with low flows. This puts the water off its course increasing the effect of flooding on the people and their property whenever the rains intensify in the wet seasons.</p> <p>Encroachment on the river banks especially for settlement and farming has left it "naked" thus increasing the impacts of the floods, change in water quality, in addition to habitat loss for both aquatic and terrestrial</p>	<p>WME emergency works will involve stabilization of the critical hotspots of Masule, Kyanjuki camp and Kyanjuki village</p> <p>The LG should engage the local community and sensitize them on riverbank management</p>

Stakeholder	Name	Title	Key issues	Responses
			The Subcounty is threatened by landslides during the heavy rains especially in May and October, resulting from soil erosion, tree cutting and poor farming practices on the steep slopes.	The LG should engage the local community and sensitize them on mountainous areas
			Other activities in the area that can be boosted include stone crushing, bee keeping, tourism and poultry farming among others.	This will be integrated within the catchment management measures
Karusandara Subcounty	Focused group discussion with sub county leadership Gender composition ; Male 7 Female 3	This involved the; Sub county chief, parish chiefs, area councilors, local areas councils I,II and III, sub county CDO and VHTs	Karusandara is the area most affected by floods from the river and hills especially during rainy season. Being a flat land, water gathers and spreads within the area hence the name of the Subcounty was derived from the Lutooro word 'Kusandara' which means spreading or scattering of water.	MWE intervention is aimed at addressing floods and associated impacts
			Being a flat area, a lot of silt from the mountains settles in Karusandara thus filling up waterways and irrigation canals.	MWE intervention is aimed at addressing floods and associated impacts
			Service delivery in the Sub County is greatly affected during heavy rains and floods as funds meant for other activities or services are diverted to opening up blocked roads for access.	MWE intervention is aimed at addressing floods and associated impacts
Rukoki Subcounty			Whenever R. Nyamwamba floods, Rukoki Subcounty is greatly affected and has registered the highest loss of lives during this eventuality in the district. This is in addition to blockage of access to markets, schools and other social amenities.	MWE intervention is aimed at addressing floods and associated impacts
	Focused group discussion with sub county leadership Gender composition;	This involved the; Sub county chief, parish chiefs, area councilors, local areas councils I,II	A number of bridges in the area have collapsed due to the flooding of River Nyamwamba and these include; Kapoko – Nyakazinga, Misika – Kapoko, Base camp – Misika, and Rukoki – Munga. These have not been rehabilitated and this is hindering inter village connections	MWE intervention is aimed at addressing floods and associated impacts

Stakeholder	Name	Title	Key issues	Responses
	Male 6 Female 2	and III, sub county CDO and VHTs	and access to economic and social services	
			Due to the hilly nature of the Subcounty, there is shortage of arable land; this therefore forces people to move and cultivate down the valley at the river banks	The LG should continue sensitizing the local community on environmental protection
			The level of land fragmentation is high in this area. On average, each household owns approximately 1 acre of land.	
Nyamwamba Subcounty	Focused group discussion with sub county leadership Gender composition; Male 9 Female 2	This involved the; Sub county chief, parish chiefs, area councilors, local areas councils I,II and III, sub county CDO and VHTs	The floods of 2020 and 2021 destroyed many roads and bridges, many of which have not been rehabilitated up to now. This makes inter-village connections and access to social services hard. Many people have reportedly died while trying to cross the rivers. There is therefore urgent need to work on bridges in the area.	MWE intervention is aimed at addressing floods and associated impacts
			Farmers in the area divert water off the river into their farms. This exacerbates the impacts of floods whenever they happen. There is need to sensitize farmers on proper irrigation techniques.	MWE intervention is aimed at addressing floods and associated impacts
			Sensitization is much needed in environmental conservation, modern farming techniques and co- existence with the National Park.	The LG should continue sensitizing the local community on environmental protection
Central division	Focused group discussion with division leadership Gender composition; Male 5 Female 2	This involved the; Sub county chief, parish chiefs, area councilors, local areas councils I,II and III, sub county CDO and VHTs	Since Base camp community is so close to the river, floods greatly affect the people causing death among some, destroying crops and houses and increasing the spread of diseases like malaria, Typhoid, and Onchocerciasis.	MWE intervention is aimed at addressing floods and associated impacts
			There is great fear of sub merging of the town by water if interventions are not put into place to control water resources in the area.	MWE intervention is aimed at addressing floods and associated impacts

Stakeholder	Name	Title	Key issues	Responses
Kyarumba Subcounty	Focused group discussion with sub county leadership Gender composition; Male 6 Female 3	This involved the; Sub county chief, parish chiefs, area councilors, local areas councils I,II and III, sub county CDO and VHTs	Floods, which usually occur in the months of May and October, sweep away houses displacing people and destroy bridges. This has caused fear that Kyarumba town can easily be swept away by a more powerful flood.	MWE intervention is aimed at addressing floods and associated impacts
			Deforestation and over cultivation on the hill tops have left the land bare and soils lose, making the area prone to landslides. In preparation of the catchment management plan, tree planting should be included especially on the steep slopes and along the river banks. Where possible, trees especially bamboo should be supplied to each Subcounty at no cost.	The LG should continue sensitizing the local community on environmental protection
			The emergency works should integrate periodic de-silting of the river to control flooding	MWE intervention is aimed at addressing floods and associated impacts
			With the opportunity of electricity in the area, government should help the community to set up coolers for milk preservation in addition to a separator for making ghee and other milk products	
			The plan should consider awareness and sensitization of the cattle keepers on modern livestock breeding and grazing methods in addition to provision of better breeds	

Annex 3: Chance Find Procedures

A Chance Finds Procedure to guide management of any accidental discoveries of histo-cultural resources in the process of implementing the RRF. The procedure will be as follows:

- a) Stop the construction activities in the area of the chance find;
- b) Delineate the discovered site or area;
- c) 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 take-over;
- d) Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Directorate of Museums and Monuments under the Ministry of Tourism, Wildlife and Antiquities (within 24-48 hrs or less);
- e) The Directorate of Museums and Monuments would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists 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;
- f) Decisions on how to handle the finding shall be taken by the Directorate of Museums and Monuments. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- g) Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Directorate of Museums and Monuments;
- h) Construction work could resume only after permission is given from the responsible local authorities and the Directorate of Museums and Monuments concerning safeguard of the heritage;
- i) These procedures must be referred to as standard provisions in construction contracts, when applicable. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered are observed;
- j) Construction work will resume only after authorization is given by the responsible local authorities and the National Museum concerning the safeguard of the heritage; and
- k) Relevant findings will be recorded in World Bank Implementation Supervision Reports (ISRs), and Implementation Completion Reports (ICRs) will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate.

Table b): Budget for Environmental and Social Monitoring

SN	Parameters	No. of locations	Frequency	Rate per location/ sample	Amount
A. Pre-construction (baseline)					
1.	Surface water quality	10	Quarterly (Except rainy season)	1,000,000	10,000,000
2.	Noise levels	10	Quarterly (Except rainy season)	500,000	5,000,000
3.	Air quality	5	Quarterly (Except rainy season)	1,000,000	10,000,000
4.	Ground water quality	5	Quarterly (Except rainy season)	1,000,000	10,000,000
5.	Preparation and implementation of ESMP	1	Once	25,000,000	25,000,000

E S M P

Emergency Maintenance of River Nyamwamba for Flood Mitigation Against Damage
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6.	Preparation and implementation of SEP	1	once	15,000,000	15,000,000
7.					
B. Construction phase					
1.	Surface water quality	10	Quarterly (Except rainy season)	1,000,000	10,000,000
2.	Noise levels	10	Quarterly (Except rainy season)	500,000	5,000,000
3.	Air quality	5	Quarterly (Except rainy season)	1,000,000	10,000,000
4.	Ground water quality	5	Quarterly (Except rainy season)	1,000,000	10,000,000
5.	Grievance redress mechanism	3	Quarterly	5,000,000	15,000,000
6.	Stakeholder engagement meetings	28	Weekly	200,000	5,600,000
7.	Distribution of mosquito nets	3	One off	lump sum	10,000,000
8.	Distribution of condoms	3	Quarterly	lump sum	5,000,000
9.	Hiring of mobile sanitation facilities	5	One off	lump sum	5,000,000
10.	First aid kit	3		lump sum	1,000,000
11.	Waste disposal skips	10		lump sum	5,000,000
C. Other Performance Indicators					
1.	Survival rate of plants				5,000,000
2.	Debris clearance				100,000,000
3.	Safety arrangement for workers				5,000,000
4.	Community awareness and sensitization				10,000,000
5.	Solid waste management				10,000,000
6.	Fecal waste management				8,000,000
E. Post construction phase					
1.	Surface water quality	10	Quarterly (Except rainy season)	1,000,000	10,000,000
2.	Noise levels	10	Quarterly (Except rainy season)	500,000	5,000,000
3.	Air quality	5	Quarterly (Except rainy season)	1,000,000	10,000,000
4.	Ground water quality	5	Quarterly (Except rainy season)	1,000,000	10,000,000
Grand total					2,896,000,000

Annex 4: Grievance Management Guidelines for Communities and Project Workers



MINISTRY OF WATER AND ENVIRONMENT

**INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT
(IWMDP)**

GRIEVANCE MANAGEMENT GUIDELINES

MAY 2022

SECTION ONE: OVERVIEW OF THE GUIDELINES

1. Introduction

The Government of Uganda with support of the World Bank (IDA) is implementing the Integrated Water Management and Development Project (IWMDP). The project is focusing on (i) improving access to water supply and sanitation services in urban, small town and rural areas, including refugee hosting communities in the country; (ii) improving water resources management; and (iii) institutional strengthening to ensure improved service delivery and sustainable water resources management in Uganda.

From the experience under the Water Management and Development Project (WMDP) and as envisaged by the Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF) and Site specific Environmental and Social Impact Assessments (ESIA), a number of complaints and grievances could emerge during construction and post construction phases of the sub-projects. To ensure timely resolution and management of these grievances, a robust and systematic mechanism of handling and addressing these complaints is required for all the sub-projects.

It should be noted that these guidelines do not replace the existing legal grievance system. Rather, they are developed to provide a proactive mechanism to manage project related complaints and grievances in a less adversarial, less costly, quicker and participatory way. At any stage, an aggrieved party may be free to use alternative redress including existing legal processes in Uganda. The proposed grievance system will last for the project construction period.

1.1. Justification for Grievance Management Guidelines

The project Environment and Social Management Framework (ESMF) and the Resettlement Policy Framework (RPF) require that a clear grievance management system is established and the stakeholders sensitized on such mechanisms. Subsequently, the Project Appraisal Document (PAD) and the Project Implementation Manual (PIM) provide for well guided grievance redress mechanism for the project. Therefore, these guidelines have been formulated to operationalize the ESMF, RPF, PAD and PIM.

The ESIA reports revealed potential sources of grievances to include land acquisition, loss of livelihoods, Violence Against Children, Gender Based Violence, health issues, HIV and AIDS, accidents, sexual harassment, conflicts, displacement, theft, cultural shocks, and environmental issues among others which require a robust system to identify, respond and manage these issues.

1.2. Purpose of the Grievance Management Guidelines (GMG)

The purpose of the grievance management guidelines is to ensure consistent, formal and effective institutionalized framework for easy submission of grievances as well as speedy and equitable resolution of grievances during project implementation.

1.3. Objectives of Grievance Management Guidelines

To enable a systematic receipt of grievances from affected communities and allow for pre-emptive engagements at an earliest opportunity.

Provide impartial, equitable, appropriate, transparent, and consistent responses to complainants.

Ensure fair, timely and equitable responses to complaints regarding compensation for loss of properties of local residents and other affected parties.

To promote easy access to grievance redress by vulnerable groups including women, children, people with disabilities among others

1.4. Users of these guidelines

These guidelines have been formulated, to provide guidance to the implementing agencies, benefiting local governments, consultants, contractors, communities and other stakeholders on the procedures to be followed in handling complaints and grievances related to the project. The MWE shall ensure that different stakeholders receive effective sensitizations and trainings on complaints and grievances redress mechanism for the project.

1.5. Guiding Principles

This grievance management guidelines are founded on critical pillars of good governance and among the core guiding principles include;

- i. Equity and fairness in project implementation.
- ii. Access and effective participation of stakeholders in grievance management
- iii. Transparency and accountability in implementing the sub-project at all times and levels
- iv. Independence from all interested parties, and bound by a clear set of rules and standards.
- v. Predictability in terms of clearly defined procedures/ process for addressing complaints with clear timelines on solving complaints.

1.6. Overview of Content

The guidelines are divided into three sections.

Section one provides for the introduction of the guidelines, the justification, purpose, objectives, users and an overview of the content of the Grievance Management Guidelines

Section two contains a detailed description of community related grievances redress mechanism from the village level to the MWE level.

Section three provides for a detailed description of the Workers related grievance redress mechanism.

SECTION TWO: COMMUNITY GRIEVANCE REDERESS MECHANISM

2.1. Common Community Grievances in Construction Projects

Considering the nature and extent of works, the following grievances may arise during the construction phase of the project:

- i. Grievances related to Land acquisition
- ii. Restrictions on land due to civil works, workers camps, material storage areas, material sources, etc.
- iii. Clearance of right of way which may affect crops and trees
- iv. Temporary displacement of road side activities in urban centers, including vendors
- v. Complaints related to noise, dust, and traffic incidents
- vi. Complaints on workers behavior or conduct specially towards women, girl and boy children
- vii. Illicit behaviors like alcoholism, smoking, drug abuse etc. of the contractor's workers
- viii. Disruption of social set up and security
- ix. Disputes on compensation values
- x. Increased pressure on social services and infrastructure, including water supply
- xi. Contractor failure to pay workers and suppliers
- xii. Accidents arising out of contractor's negligence to provide necessary information, protective gears and supervision

2.2. Grievance Management Structure

The key components of the grievance management structure include the following;

- i. Grievances Management Committees
- ii. Complaints and Grievances Desk
- iii. Appeals Procedure.
- iv. Communication protocols and Feedback
- v. The Grievance Management Committees

Dedicated Grievance Management Committees (GMCs) will be established to manage grievances during project implementation. The committees will utilize existing administrative structures with the support of technical teams to ensure easy access and inclusion of stakeholders and to facilitate the appeal process.

When required, the GMCs shall be formed at village/ parish levels, Sub County, Town Council, Municipal Council, District levels and MWE level. This guideline does not propose a one size fits all to the structure, composition and level of GMCs for all projects. The principle of proportionality should guide the degree of effort

2.2.1. Roles and Responsibilities of Community GMC

- a) Providing project information and attending to complaints that may be resolved by providing information
- b) Registering all grievances from the community or as referred at different levels
- c) Addressing those grievances that are manageable by the committee

- d) Referring any grievances to higher levels for action and further follow up.
- e) Escalating any unresolved grievances to appropriate levels as stated in these guidelines
- f) Liaising with local leaders to ensure health, safety and security of the communities, workers and construction materials during the project implementation

2.2.2. Membership and Composition of Grievance Management Committees

- a) GMCs at Village or Parish Levels
- b) Village and Parish GRM committees will be established as voluntary committees for each infrastructure to be constructed at village or parish levels depending on the community dynamics, area covered and nature of works. Community GRM Committees will have 10 members including
- c) Chairperson,
- d) Vice Chairperson,
- e) Secretary,
- f) Other Members (7) including a youth, Elderly Person, PWD and at least 3 members should be female. Quorum sitting shall be of at least five (5 members).

The LC I Chairpersons and Vice Chairpersons will be ex-officials to these committees.

NB: The committee shall be formed either at village or parish level given that linear projects traverse several communities. It is important that committees are accessible to communities at village or parish level.

2.3. GMCs at Construction Sites

Each construction site shall have a Site GMC responsible for handling all community grievances related to construction including those grievances referred by the village/ Parish GMC. The Site GMC shall comprise of the following;

- a) The Resident Engineer/ Supervising Consultant (Chairperson)
- b) The Contractor's Contract Manager
- c) Sociologist for the Consultant
- d) Sociologist for Contractor (Secretary)
- e) Environmentalist for the Consultant
- f) Environmentalist for the Contractor
- g) Health and Safety Officer for the Contractor
- h) 2 Community Representatives (1 Female and 1 Male)

This committee shall consolidate and address all grievances from the community at the site and escalate any matters appropriately to the respective Local Government and MWE.

2.3.1. GMC at Sub County Level

The committee will be formed at the sub-county level and its membership shall consist of;

- a) Local Council III (chairperson);
- b) The Sub County Chief,
- c) Community Development Officer (Secretary)
- d) Environment focal person
- e) Representatives of PAPs

- f) Parish Chief of the respective area where the complaint originated from.

2.3.2. GMC at Town Council/ Municipal Level

Given its extended nature of staffing and complexity, the town council grievance management committee shall include the following members;

- a) LC III Chairperson/ Mayor (Chairperson)
- b) Town Clerk
- c) Council Community Development Officer (Secretary)
- d) Environment Officer
- e) Physical Planner
- f) Representative of the PAPs

2.3.3. GMC at District Level

At the District Level, the Grievances Management Committee shall consist of;

- a) LC V Chairperson (Chairman)
- b) Chief Administrative Officer or a his/ her Representative
- c) District Community Development Officer (Secretary)
- d) Head of Natural Resources
- e) District Water Officer
- f) Representative from the PAPs
- g) District Lands officer

Note: Due to complex nature of grievances, the committees can be extended to include any other relevant officers suitable for addressing the prevailing grievances.

2.3.4. GMC at Ministry Level

At the Ministry of Water and Environment, a National Grievance Management Committee (GRM) shall consist of a MOWE Chair, the IWMDP Project Coordinator, the Coordinator for Social Safeguards (Secretary), Coordinator for Environmental safeguards, Social Safeguards Specialist, Environmental Specialist, the chair of the community mediation board, and a member of a recognized non-government organization.

2.3.5. Roles of GMC Committee Members

The committee members at all different levels shall have a number of roles including the following;

Responsibilities of the Chairperson

- a) Calling meetings of the committee
- b) Preparing the agenda of committee meetings
- c) Guiding and settling disputes among committee members on their roles and responsibilities
- d) Chairing all committee meetings
- e) Sharing responsibilities to the committee members

- f) Ensuring that committee resolutions are implemented in consultation with the different offices/ departments
- g) Ensuring that GMC reports and other information are submitted in time

Responsibilities of the Vice Chairperson

- a) Deputizes the role of the Chairperson above if the chairperson is absent or if s/he has been delegated by the Chairperson
- b) Advises the Chairperson on matters concerning the running of the committee from time to time
- c) Responsibilities of the Secretary/ Grievance Officer
- d) Registering all grievances and keeping the grievance register safely
- e) Writing committee minutes
- f) Writing invitation letters
- g) Writing grievance progress and close out reports for the committee
- h) Keeping all records
- i) Any other duty that the committee can decide/ or agree to.

Responsibilities of the Committee Members

- a) Carrying out any duty as assigned by the chairperson or committee
- b) Attending all meetings
- c) Guiding appropriately the chairperson and committee on matters to be implemented by the committee

2.4. Project Affected Persons Representation during Grievance Handling

The affected people or people within the Project Area within a Sub County/ Town/ Municipality shall be mobilized and sensitized on grievance redress mechanisms. They will then select a representative to the committee at Sub County/Town Council/ Municipality/ District level.

2.5. Appointment/ Formation of the Grievances Management Committees

MWE team shall work with the Local Governments and facilitate the selection of the Grievance Management Committees at the Ministry, District, Sub County/ Town Councils/ Municipal and village levels.

2.6. Facilitation of the Grievance Management Committees

All grievance redress committees shall be nominated by the community and will work on voluntary basis and therefore no pay is expected for their service. However, during meetings organized by the project, members will be facilitated with travel refunds and refreshments. In addition, the committee members will be provided with trainings as part of empowerment to enable members able to serve their communities in different capacities. However, MWE shall endeavor to support the committees with basic stationery and appropriate personal protective equipment. The nominated members will also be sensitized and enabled to sign consent forms (appendix iii) accepting this voluntary work on behalf of the community. MWE will operationalize and popularize the GRM and develop IEC materials, grievance registers and provide continuous training to members.

2.7. Complaints and Grievances Desk

The complaints and Grievance Desk will be the secretariat for grievances management. This desk is 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

No.	Grievance Committee Level	Responsibility/ Host office
1	Village/Parish level	Committee Secretary
2	Construction Site	Sociologist - Contractor
3	Sub- County/ Town Council/ Municipal	CDO- Council
4	District	CDO- District level
5	MWE	Principal Sociologist/ WELSD

2.8. Communication Protocols and Feedback.

The GO/ Secretary shall constitute the secretariat of the Grievance Resolution Mechanism. All decisions reached at the different resolution levels shall be communicated to the complainant and other stakeholders by the Chairperson of the respective Grievance Management Committee. 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.

2.9. Receipt of Grievance, Hearing Process and Appeals

The following sub-section provides the procedure for receiving and hearing of complaints as well as appealing against any decision from the grievance management committees at village, construction site, sub county/ Town Council/ Municipal Council, District, MWE and other mandated agencies.

2.10. Receiving and Registering Complaints at Village/ Parish Level

The following procedure will be followed in registering a complaint at all community GMCs

A verbal or written complaint is logged in to any member of the GMC by a complainant

The secretary seeks clarification of specified details of the complaint

Complaint is registered into the complaints register provided by MWE

If complaint is not clearly understood, requires urgent attention, grave, fatal and/or bears serious implications, the GMC will visit site for on spot assessment and consultations

The Community GMC will sit and decide if the issue can be addressed at their level or requires referral. If the concern can be addressed, the committee will sit with the complainant and decide on the course of action. The secretary will document the minutes and attendance list and if concluded, the complainant will sign off in the grievance register acknowledging resolution of his/her grievance. If the matter cannot be resolved by the village GMC then the GMC will forward it to the construction site for immediate redress.

NB: It is recommended that the Contractor shall transfer all grievances in the village GMC and consolidate them in the construction site grievance register on a weekly basis and follow up to ensure that all grievances were well handled. This is because, all grievances that are project related have been triggered by construction activities. The construction team should therefore be the pivot of grievance documentation, redress and follow up.

2.11. Screening, Assessing and handling of Community Grievance at Construction Site

All complaints from the village/ parish GMCs shall be collected and consolidated into the main complaints register at the construction site. The Grievances Officer/ Contractor's Sociologist at the Construction site, will screen all complaints received to determine whether action can be taken at the level of his/her office in consultation with other responsible officials, project contractor and the complainant. The site team should ensure that resolutions are made and compliant resolved within 5 days.

2.12. Referral/ Appeals to Sub County/ Town Council and Municipal Council Grievance Management Committees

The Contract Manager for the Contractor will refer unresolved grievances to the Sub County or Town Council or Municipal Grievance grievances management committee for consideration. The Sub County GMC/ Town Council/ Municipal Council GMC will ensure that the grievance is addressed within 7 days.

Where the grievance hearing session is required, the complainant will be invited to the grievance hearing and redress meeting. Depending on the matter being addressed, it will be important that the area LC I Chairperson of the village where the complaint was lodged be invited to attend the meeting along with the complainant. This is intended to ensure fairness and the LC I will be observing and making inquiries to ensure that both parties understand each other point of view. This will instill confidence to the complainant as well. Upon successful resolution, the Chairperson of the Committee shall formally write to the complainant specifying details of actions, timeframes and any other details pertinent to the resolution. On agreeing to the resolution, the complainant will sign a consent form binding him/her to the negotiated resolutions.

2.13. Referral/ Appeals to District Grievance Management Committees (DGMC)

If the Sub County/ Town Council/ Municipal Grievance Management committee fails to resolve the matter or if the complainant is not satisfied, the Chairperson on behalf of the GMC shall refer the matter to the District GMC. The DCDO will register the referred/ appealed case in the District Complaints Register that will be provided by MWE.

The DCDO who will also act as the Secretary to the DGMC will screen the matter referred and bring to the attention of the LC V chairperson who will write invite the complainant together with the respective LC I Chairperson to the DGMC within Seven (7) days. A fair hearing process will then commence at the DGMC and upon satisfaction of the resolutions/ agreement, the complainant shall sign the consent form and the grievance chairperson will officially write to the complainant with a copy to the LC III, Sub County Chief/ Town/ Municipal Clerk and the contractor/ Consultant.

If the matter cannot be resolved by the DGMC, then it will be referred to the Ministry of Water and Environment. The CAO on behalf of the District will officially refer the case to the Permanent Secretary MWE with a copy to the Project Coordinator IWMDP for action within 14 days. The Complainant can also lodge an appeal to the PS MWE if s/he was not satisfied with the outcomes of the DGMC.

2.14. Referrals/ Appeals to MWE

Any unresolved grievances will be referred to MWE for appropriate action. The Grievance Desk (Principal Sociologist) shall work with PST to establish all necessary facts within 14 days upon receipt of the complaint. A report with the recommended course of action shall be forwarded to the Project Coordinator for implementation and follow up.

As much as possible, the Ministry team will engage the complainant at the district, Sub County or village levels to arrive at amicable solutions. Upon arriving at an agreed understanding, the complainant shall sign a consent form witnessed by the LC I Chairperson to close the grievance. If no agreement is reached at this level, the complainant shall be advised or shall decide on his/ her own to use any other lawful arrangements as may be applicable.

2.15. Implementation and Verification of Negotiated Corrective Actions

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.

2.16. Flow Chart of the Grievance Management Process

The grievance management process has several interdependent steps that will be followed as summarized below;

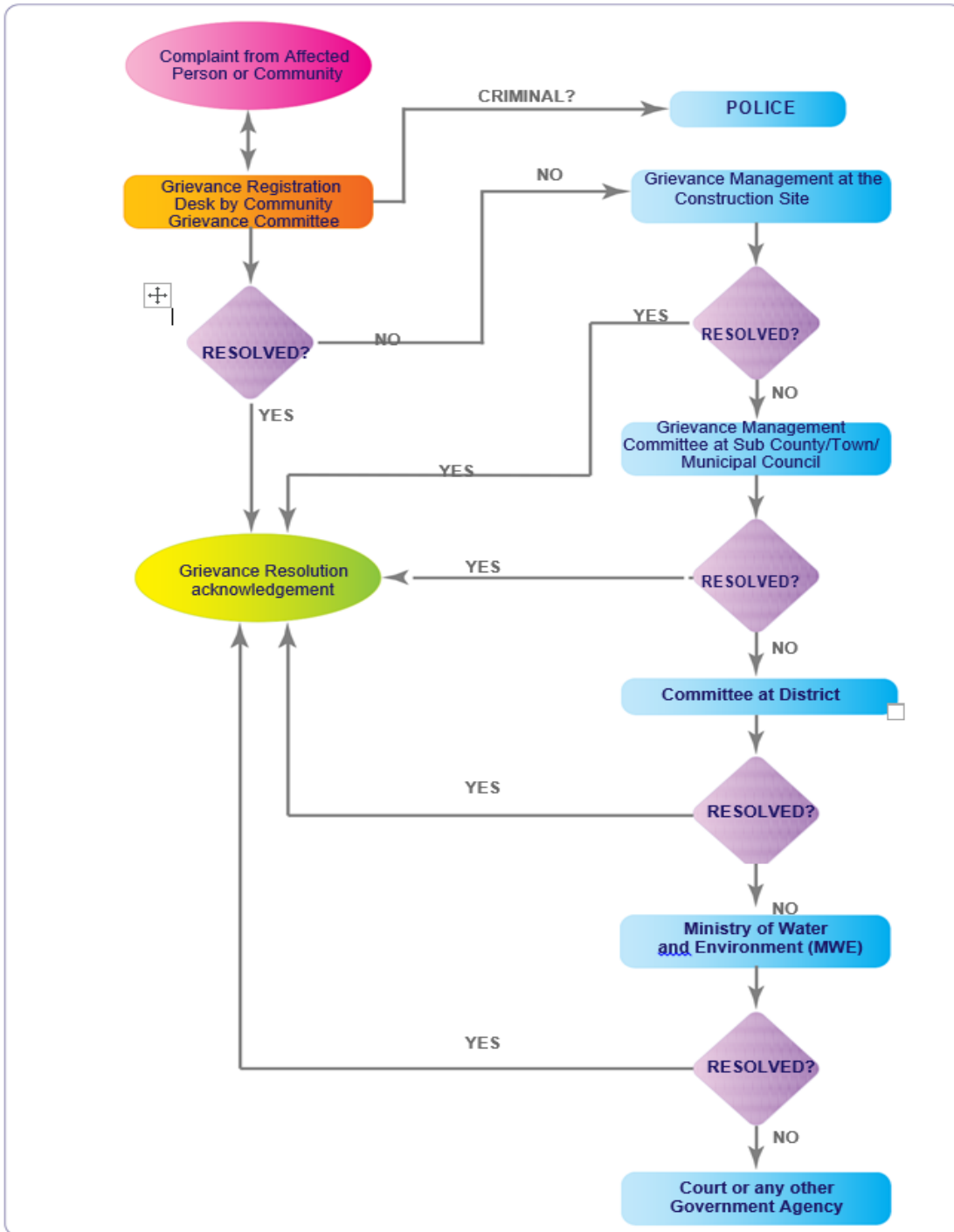


Fig 1: The Grievance Handling Flow for Community

Flow of Appeals or Referral of Grievances and Timelines

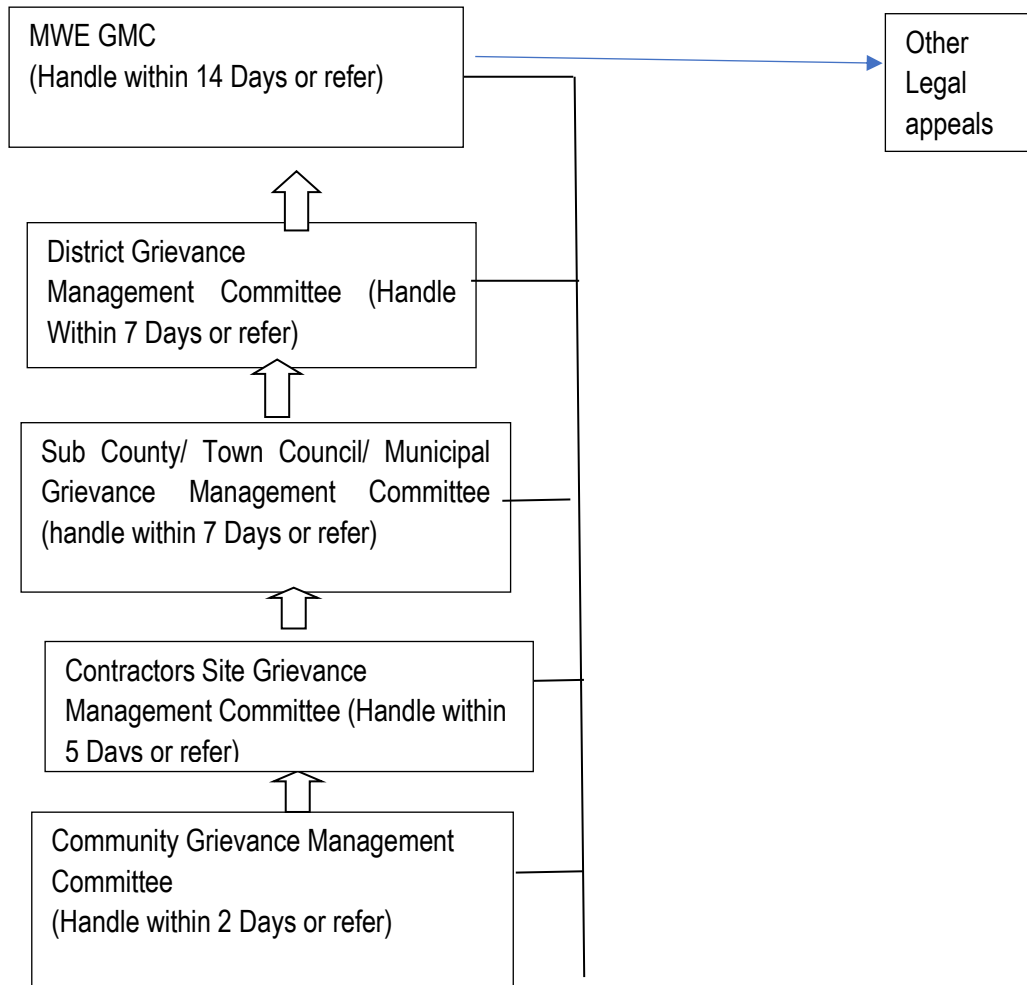


Fig 2: Flow of Appeals or Referral of Grievances

2.17. The Office of the Grievance Officer (GO)

At the community level, the Secretary of the village GMC and Consultants Sociologist will be the Grievance Officers at village and construction sites respectively. Cognizant of the resource requirements, the existing GoU staffing shall be used and at Sub County/ Town / Municipal Council, the CDO shall be the GO at lower local governments, while DCDO shall be the GO at district level. The Social Safeguards Coordinator under MWE shall be the GO at the Ministry level. The office of the Grievance Officer will be the de-facto secretariat of the Grievance Mechanism.

Principal responsibilities of the GO will include:

- a) Receiving and screen grievances from affected people and organizations.
- b) Catalogue and develop a database of complaints received. This could be a manual log or an electronic data base. The created data base will be a 'living' document updated by the GO on a weekly basis. Confidentiality of information received from complainants will be maintained.
- c) Undertaking preliminary investigations to validate and authenticate the nature of complaints lodged.
- d) Initiate contact and arrange meetings with complainants

- e) Work with complainants, contractor and local authorities to resolve first level simple misunderstandings
- f) Schedule meetings of the Grievance Management Committee
- g) Serve as secretary to the Grievance Management Committee responsible for communicating all decisions of the committee to complainants, MWE and all concerned stakeholder.
- h) Report to the aggrieved parties about developments regarding their grievances and decisions taken.
- i) Submit monthly returns to MWE on the status of Grievances handled. This will be a comprehensive report categorizing and detailing complaints received, those resolved at the different levels, pending resolution and appeals.
- j) Lead sensitizations of PAPs and other stakeholders on the grievance's procedures
- k) Providing inputs into the Monitoring and Evaluation of grievance handling system.
- l) Ensure safe custody of all records relating to management of grievances include registers, consent forms, minutes, among others.

2.17.1. Competencies and Capacity building of the GO

Where there are capacity issues, the priority will be given in building the GO in the following areas;

- a) Ability to communicate with PAPs in a language they understand
- b) Conflict management skills
- c) Basic computing skills
- d) Basic knowledge on archiving
- e) Community mobilization experiences
- f) Managerial competencies

2.18. Other Team Members of GMC

The tasks and roles of other members on the committee will be derived from their professional and institutional mandates. For effective implementation of grievances redress, the committees shall work with different offices/ officials they deem fit to providing input in resolving the grievances.

2.19. Involvement of Third Parties in Grievance Management

For grievances that require third party agencies like National Environment Management Authority (NEMA), Ministry of Lands, Housing and Urban Development (MLHUD), Ministry of Gender, Labour and Social Development (MGLSD) among others, it will be the responsibility of MWE project team to guide such engagements with the respective third parties. However, within the Local Governments, certain matters which require existing agencies involvement like security agencies, traditional institutions, etc. can be engaged by the respective LG under the guidance of the CAO.

2.20. Grievances that are Criminal in Nature

When any criminal case has been detected, it should be registered and immediately referred to the relevant office like Uganda Police for investigation and other actions as provided by the criminal procedures in the Laws of Uganda. The Contractor, Consultant, and all the grievance committees shall have a duty to follow up such cases and report accordingly. The referral pathways and reporting forms are provided under appendix vi and vi.

2.21. Capacity Building Arrangements

It will be the responsibility of the MWE to coordinate and arrange for capacity building of the grievance committees. Local government administration shall have the responsibility of sensitizing and popularizing grievance redress arrangements to the local people and stakeholders. The PST shall lead the rollout the capacity building framework and trainings to ensure the committees perform to the expectations of the stakeholders.

2.22. Monitoring and Evaluation of the Grievance Handling System

Complaints and grievances redress mechanism will be an integral part of the M&E framework of all the sub-project activities including site visits, field visits and missions. Review of minutes of the committees, communications on file, updated complaints and grievances registers at the Community, Construction Site, Sub County, Town Council, Municipal, District and Ministry levels shall be among the verification modalities for the different stakeholders.

Beneficiary satisfaction surveys which will be conducted by independent consultants that will be procured by MWE will also encompass the complaints and grievance mechanisms to assess the performance of the grievance redress mechanisms for each sub-project.

Monitoring and Evaluation Indicators shall among others include the following;

- a) No of GM Committees formed
- b) No of GM Committees trained
- c) No of grievance related community sensitizations conducted
- d) No of committees facilitated with basic stationery, standard grievance registers, & PPEs
- e) No of people (M, F) sensitized
- f) No of grievances registered
- g) Proportion of complaints resolved
- h) % of cases referred to higher committees
- i) % of cases appealed to other agencies of Government
- j) % of resources spent of C&G

SECTION THREE: WORKERS' RELATED GRIEVANCE REDERESS MECHANISM

3.1. Introduction

The construction sites shall employ substantial numbers of workers. For better organization and management of workers' grievances, there shall be Workers' grievance management system. With management support from the Contractor's Management, Supervising Consultant and MWE, this system shall play a significant role in proactive management of employer –employee relations, workers' welfare and grievances within the workplace. This system shall not interfere with either management's authority or its obligation to manage their contracts but rather provides a formally recognized opportunity and avenue for their grievances to be managed and their rights to be heard and respected.

3.2. Common Workers' grievances at construction sites

Employee Grievances may include;

- a) Unsafe physical working conditions
- b) Failure to issue formal contracts to workers
- c) Illegal termination of contracts
- d) Changes without prior notice.
- e) Poor employee relations.
- f) Poor/ failure/ delayed remuneration.
- g) Dissatisfactory office policies in case of: Promotion, Demotion, Leaves, Overtime
- h) Violation of workers' rights.
- i) Inadequate safety, health, and welfare amenities.
- j) Labor-management hostility.
- k) Incidences of workplace favoritism and nepotism, among others.

3.3. Role of the Workers' Grievance Management System

The roles of the Workers' Grievance Management System include:

- a) Providing a forum for consultation, frank exchange of information, discussion and joint problem solving between management and employee representatives on issues pertaining to staff welfare, rights, discipline; any proposed changes dealing with policies, procedures and working conditions.
- b) Receiving and reporting workers complaints/grievances to management and negotiate for timely redress, / participate in arbitration of cases between workers and management through disciplinary hearings and / or between fellow workers through conflict resolution meetings
- c) Representing the interests of workers pertaining to their terms and conditions of employment, staff welfare, staff development and other matters of concern to the workers, and to negotiate with the contractor's management on their behalf accordingly.
- d) Educating Workers on their rights, discipline, code of conduct, spirit of staff unity across the project as well as on respect for cultural diversity pertaining to workers of different races, tribes, religion and other cultural differences
- e) Regularly soliciting for employees' suggestions/opinions to management through appropriate and organized channels such as their representatives, suggestion box, or joint meetings from time to time

- f) Act as a point of contact between the employees and employer's management; establish and maintain good relations, foster effective two-way communication and mutual understanding between workers on one hand, and with management on another.
- g) Identifying and representing concerns of special interest groups on the project such as women, expectant and lactating mothers, workers with disability etc.
- h) Organizing and conducting monthly Workers' meetings to review and discuss staff welfare, discipline and related matters; compile and share in timely manner meeting minutes with the contractor, supervising consultant and MWE pointing to key action areas requiring attention.
- i) Reporting any incident(s) of violation of workers' rights, staff indiscipline and related issues to management for redress
- j) Keeping adequate log and other documentation of all matters that come before the Workers' committees for better reference and effective management

3.4. Workers Grievance Committees

The grievance redress system for workers shall have three major committees set up and supported. These include the Workers' Council, Site Disciplinary Committee and overall Grievance Committee.

3.4.1. Workers' Council

The workers' council shall be constituted on the basis of directly elected representatives on the basis of different work sections. It will have representative workers including operators, drivers, mechanics, office/administration, technicians/lab, masons, flag ladies, foremen, clinic, casual laborers, surveyors etc. The different workers' categories shall mobilize and elect a representative to form a council of 5 members.

The 5 members shall select a Chairperson, Vice Chairperson, Secretary and members.

The council shall sit on a regular basis or monthly to discuss all complaints, welfare, working conditions among others. The Supervising Consultant's Sociologist shall be the patron of the Worker's Council and shall ensure that the members are provided with the support and protection to freely discuss and voice workers' issues.

Any issue that has not been addressed by the Workers' Council shall be escalated or referred to either disciplinary or Site Grievance Committee. The issues that disciplinary in nature shall be referred to the Disciplinary Committee while other issues that are not disciplinary shall be referred to the Grievance Committee.

3.4.2. Site Disciplinary Committee

During the construction phase, a number of disciplinary related cases might emerge. Hence, each Site shall have to set up site disciplinary committee to ensure self- enforcement mechanism of discipline among workers.

The committee shall comprise of;

- a) Consultant's Sociologist (Chairperson)
- b) Contractor's Human Resource Officer (Secretary)
- c) Workers' representatives (a Female and a Male).

The site disciplinary committee shall receive all disciplinary related complaints referred from the Workers' Council or from the Contractor's Management.

3.4.3. Overall Site Grievance Management Committee (GMC)

Each construction site shall have a Site Grievance Management Committee comprising of the following;

- a) The Resident Engineer/ Supervising Consultant (Chairperson)
- b) The Contractor's Contract Manager
- c) Sociologist for the Consultant
- d) Sociologist for Contractor (Secretary)
- e) Environmentalist for the Consultant
- f) Environmentalist for the Contractor
- g) Health and Safety Officer for the Contractor

3.5. Reporting Requirements

All grievances and any cases detected on site and in the community that are project related are recorded in the grievance register at all levels. Cases which are criminal in nature for example sexual harassment, gender-based violence shall be reported to Uganda Police and the Ministry notified within 12 hours. Any other life-threatening grievances and incidents like accidents, homicides, etc. shall be reported to the Ministry immediately. The Ministry shall then give initial notifications to the World Bank within 24 hours, and a detailed incident report submitted to the World Bank within 48 hours. All other mandate agencies like Uganda Police, Community Development Officers shall be involved to have well documented cases and investigations. The contractor shall provide in her monthly report the progress of implementing grievance redress mechanism for the community and workers. The MWE shall also update the World Bank on progress of grievance handling during monthly and quarterly reporting. During monitoring field visits by the MWE teams, there shall be meetings with GMC committees and reviewing their registers to ensure that all grievances are well documented and closed.

3.6. Popularizing the Grievance Redress Mechanisms

MWE shall ensure that stakeholder engagement plans include sensitization of stakeholders on the available grievance redress system for the project. The sanitizations shall be done through various channels including but not limited to meetings, IEC materials, radio talk shows and announcements among others. It will be the responsibility of MWE to provide adequate resources including funds, personnel and equipment to operationalize grievance redress mechanisms on the project. On IWMDP, MWE has provided dedicated stakeholder engagement, environment and social risk management consultant for every sub-project with adequate budget to implement grievance redress mechanism for each sub-project. During stakeholders engagements, resulting feedback shall be utilized to continuously improve the GRM of the project.

3.7. Complaints Handling Flow Chart for Workers

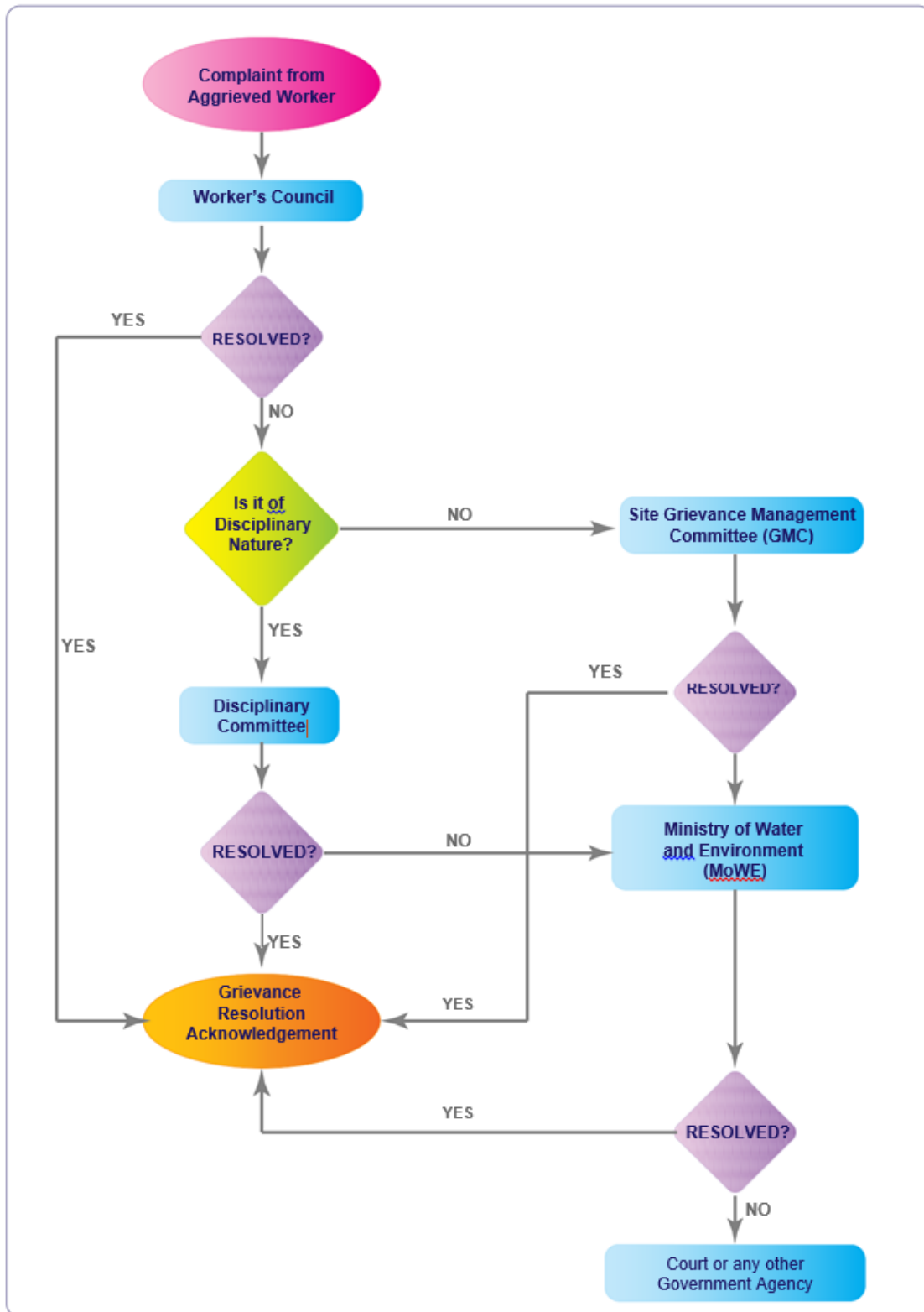


Figure 3: The Complaints Handling Flow for Workers

Appendix i: Grievances Register

(A2 Book Hardcover Bound 20 pages water proof) Per Community GRC, Construction Site, Sub County, Town Council, Municipal, District, & MWE)

MINISTRY OF WATER AND ENVIRONMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT (IWDMP)

Complaints and Grievances Register

Sub County/ Town council/ Municipality.....District.....

S/N	Date received	Name of complainant	Zone	Parish	Contacts	Complaint Description	Compliant Category ⁷	Solution Sought by Complainant	Complaint Registered By	Action Taken	Closure Date	Referral Date	Comments on status of the complaint	Sign of Complainant (after closure of complaint)

⁷ L= Land, H= Health and Safety, E= Employment, C= Cultural, LL= Loss of Livelihood, EV= Environment, GBV=Gender Based Violence, VAC= Violence Against Children, SH= Sexual Harassment/ Defilement, T= Theft

Appendix ii: Grievances Referral Form

(A4 perforated/carbonated papers in triplicate Book of 50 pages) One book per committee at Community, Construction Site, Sub County, Town Council, Municipal, District, and MWE)

MINISTRY OF WATER AND ENVIRONMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT (IWMDP)

Grievances Referral Form

Sub County/ Town council/ Municipality.....District..... Serial No: ..

Name of Complainant:	Gender:	Age:
Village/Zone of Residence:	Parish/ Ward:	Telephone Contact:
Date Registered:	Registration Number:	Date Referred
Description of the Grievance:		
Summary of the Committee Decision (quote the minute reference):		
Reasons for Referral:		
Prepared by Secretary:	Approved by Chairperson	
Name:	Name:	
Signature:	Signature:	
Date:	Date:	
	<i>Official Stamp</i>	

Appendix iii: Consent Form for Grievance Management Committee Members

MINISTRY OF WATER AND ENVIRONMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT (IWMDP)

CONSENT FORM FOR GRIEVANCE COMMITTEE MEMBERS

I..... a resident of (Village) of
.....(Parish) do accept to voluntarily offer myself as a
.....(Position) of the Grievance Management Committee for
..... (Name of the project) and commit to execute this
responsibility on this committee for the benefit of my community.

Signed by

Name:

Telephone:

Village:

Signature:

Approved by

Name:

Title:

Signature:

Official Stamp:

Date:

Appendix iv: Grievances Register for Workers*(A2 Book Hardcover Bound 20 pages water proof) for the Workers' Council*

MINISTRY OF WATER AND ENVIRONMENT

INTEGRATED WATER MANAGEMENT AND DEVELOPMENT PROJECT (IWDMP)

Complaints and Grievances Register for Workers

Name of Contractor..... Name of

Site.....District.....

S/N	Date received	Category of Worker	Complaint Description	Solution Sought by Complainant	Complaint Registered By	Action Taken	Closure Date	Referral Date	Comments on status of the complaint	Confirmation of Closure by the Supervising Consultant

Appendix v: Reporting and Referral of VAC, GBV and other Sexual Related Cases on the Project.

Stakeholder	Action and support is to be provided	Where the case should be Referred?
VAC /GBV Victim	<p>Reports to immediate persons like relatives, friends, peers, and other resourceful persons such as teacher, religious leaders, CSOs, LC, Police</p> <p>Makes a statement providing details on what happened, form of violence, perpetrator, any witnesses.</p>	Immediately refer the case to LC and Police for recording and further investigation.
Community Persons including LCs, parents, guardians, Roads Committees, Project Management Committees, contractors' management teams, Grievance committees, Contractor's worker, Faith based member like church members, CSOs	<p>Reports the case and perpetrator immediately to nearby Local Council, Contractor's supervisor, Probation Officer/ CDOs and Police for further action.</p> <p>Liaises with other actors and ensures that the survivor gets support services such as medical care and check-up, counselling and other basic needs such as food.</p> <p>Follow-up the case with LCs, Police, health services and courts of law.</p>	Refers the case to Police for further investigation.
Police	<ul style="list-style-type: none"> • Investigates the case, • Signs the PF3 forms and other sources of evidence to support court proceedings, • Supports the child survivor to access required support services and evidence such as a medical report. 	Refers the case to State Attorney for committing the perpetrator to courts of Law for hearing and sentencing
Designated Medical Centre	<ul style="list-style-type: none"> • Medical Examination for bodily harm or other injuries caused, • Produces medical report for police investigations and other evidence for the courts of law, • Provides medical care for the victim survivor to ensure recovery. 	Reports to the Police and to the Courts of Law as evidence against the perpetrator.

Stakeholder	Action and support is to be provided	Where the case should be Referred?
Probation and Social Welfare Officer/ CDO	<ul style="list-style-type: none"> • Assess the needs of the survivor/victim and refers the victim to services providers for appropriate support services, • Collects data and information on the victim for processing and management 	Reports to Police
Courts of law	<ul style="list-style-type: none"> • Hears the case, decides on support services to the child survivor or the parents of the child victim, • Sentences the perpetrator according to the existing laws regarding the case. 	Commits the person found guilty to serve his/her sentence and orders for any care and support to be provided to the victims
Prison	<ul style="list-style-type: none"> • Ensures that the person found guilty serves his/her sentence, • Person is rehabilitated. 	Freed at the end of serving the sentence.
Contractors	<p>Ensure workers are well screened for VAC&GBV before employment with involvement of LC and Police</p> <p>Ensure workers files and background information is on file for future references</p> <p>Ensure workers are trained in company policies specifically on VAC & GBV</p> <p>VAC & GBV Tool box meetings organized</p> <p>Ensure that there is a site clinic and medical service provider for workers and other victims on referral by the site clinic</p> <p>Have MoU with Police to expedite any investigations and trainings</p> <p>Create awareness to the communities on VAC & GBV risks and referral pathways</p>	Refer all allegations of VAC & GBV to the Supervising Consultant, VAC&GBV Consultant for independent investigations and reporting to Uganda Police

Stakeholder	Action and support is to be provided	Where the case should be Referred?
	<p>Cooperate with law enforcement agencies and officials in detecting, investigations and managing VAC & GBV cases</p> <p>Provide any other relevant support to victims</p>	
Local Government (CDOs and other relevant Officials)	<p>Monitors cases of any GBV/VAC allegations on the project</p> <p>Participate in GBV&VAC sensitizations to project workers and communities</p> <p>Provides technical guidance to contractors and communities on any referral pathway for a specific incident</p> <p>Maintains a directory of services providers (Government and Civil Society Organizations) for survivors and victims</p> <p>Links victim and survivors for more support to existing service providers</p> <p>Follows up on the progress of judicial processes for the suspects</p>	Refers to Uganda Police and existing service providers to victims and survivors of VAC & GBV
MWE	<p>Ensure that the Civil works contracts have strong penalties for contractors and workers involvement in VAC & GBV</p> <p>Provides effective orientation of contractors and their staff on safeguards management on the project</p> <p>Deploys dedicated service provider for VAC& GBV on the project sites</p> <p>Monitors VAC & GBV cases in the community and assesses any cases involving the contractors and their workers</p> <p>Provides reports to World Bank on any incidents related to VAC & GBV within 48 hours; provides</p>	Ensures zero occurrence of VAC cases in relation to the Project.

Stakeholder	Action and support is to be provided	Where the case should be Referred?
	<p>root cause analysis (RCA) and safeguards correction action plans (SCAP)</p> <p>Make follow up to ensure that all cases are judiciously managed</p> <p>Liaise with other MDAs to ensure appropriate actions to the VAC & GBV victims and offenders</p>	

Appendix VI: Reporting form for VAC and GBV incidents on the project.**Part I: Details of the Reporter**

Name of the Person reporting the case	Address: Location:	Date of reporting the case:
Designation and relationship with the child victim and survivor	Contact details; Tel. No (Landline): Tel. No (Mobile): Email:	Time of Reporting:

Part II: Details of Victim/ Survivor

S/N	Indicators	Details captured
	Name of the victim	
	Sex	
	Date of birth and Age	
	Residence	
	Contacts- telephone	
	Reference number	
	Nature/type of the alleged act of violence:	
	Location: where the incident took place	
	Number of times the victim has encountered such a form of violence	
	Other associated forms of violence the victim has encountered by the alleged perpetrator	

Relationship of the victim with the alleged perpetrator	
Impact of the act of violence on the victim i.e. physical, mental, health etc	
Date or time frame of the act of violence	
Witnesses (if any) and their observations and their willingness to appear in case of further investigations and their telephone contacts	
Status of reporting (if there are previous efforts of reporting the case and the person/officer reported to	
Measures or actions taken	
Outcomes of the measures if any	
Recommended actions and support services for the survivor/victim	
Witnesses Name: Address: Contact number:	Describe the event as witnessed:
Any other information found necessary to support the case- photographic or recorded evidence	
Form compiled by: Name: ----- Signature: -----	Position----- Date-----

Part III: Details of the alleged perpetrator

Notes		Attach all the necessary supporting information or documents and remember to retain a copy for follow-up
S/N	Indicators	Details captured
1	Name of the alleged perpetrator (attach a photo) if available	
2	Sex	
3	Age (if known)	
4	Residence	
5	Marital status	
6	Contacts- telephone	
11	Consent or non-consent of the perpetrator on committing the act	
12	Previous incidents of violence committed by the alleged perpetrator	
13	Measures taken by the duty bearers and other stakeholders against the perpetrator	
14	Outcomes of the measures if any	
15	Recommended actions against the perpetrator	
16	Any other information found necessary	
17	Form compiled by: Name: ----- Signature: ----- Position:----- Date:-----	Contact details: Tel:-----Email:----- --

