The Republic of Uganda
Ministry of Lands, Housing and Urban Development

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) REPORT

FOR

THE PROPOSED UPGRADE OF 11.63 KM ROADS TO TARMAC IN **BULIISA TOWN COUNCIL** AND **BUTIABA TOWN COUNCIL BULIISA DISTRICT** UNDER ARSDP BATCH 2 SUB-PROJECTS

Prepared for:

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Project index

Project Name:	Consultancy services for preparation of Environment and Social Impact Assessment (ESIA) for batch 2 sub-projects (roads and renovation of offices)
Project Ref No:	Contact No: MLHUD/ARSDP/SRVS/2017-2018/00703
Report category:	Environmental and Social Impact Assessment (ESIA) Report
Lot 1	The proposed upgrade of 11.63 km roads to tarmac in Buliisa Town Council and Butiaba Town Council, and renovation of Buliisa Town Council Offices.

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TEAM COMPOSITION

This Environmental and Social Impact Assessment (ESIA) has been complied in accordance with schedule 5 of the National Environment Act, 2019 and Environmental Impact Assessment (EIA) Regulations, 1998, in conformity with the National Environment (Conduct & Certification of Environmental Practitioners) Regulations, 2003, below are names of the Environmental Impact Assessors.

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Contents

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

AIDS	Acquired immunodeficiency syndrome
ARSDP	Albertine Region Sustainable Development Project
ART	Antiretroviral Therapy
AWE	Air Water Earth
BDLG	Buliisa District Local Government
BUPACD	Buliisa Parents Association of Children with Disabilities
CAO	Chief Administrative Officer
CBD	Convention on Biological Diversity
CBOs	Community-Based Organization
CDO	Community Development Officer
C-ESMP	Contractor's Environmental and Social Management Plan
CR	Critical
CSOs	Civil Society Organisations
DEAP	District Environment Action Plan
DD	Data Deficient
DEO	District Environmental Officers
DHO	District Health Officer
DLG	District Local Government
DO	Dissolved Oxygen
DRC	Democratic Republic of Congo
DWRM	Directorate of Water Resources Management
EHS-MP	Environment, Health and Safety Management Plans
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statements
EN	Endangered
ESHS	Environment, Social, Health & Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussions
GBV	Gender Based Violence
GIS	Geographic Information System
GMC	Grievance Management Committee
GoU	Government of Uganda
Govt	Government
GPS	Global Positioning System
GRMs	Grievance Redress Mechanisms
GRS	Grievance Redress Service
HCT	HIV Counselling & Testing
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSDP	Health Sector Development Plan
ICT	Information and communications technology
IDA	International Development Association
IEC	Information, Education and Communication

IFC	International Finance Corporation
IISD	International Institute for Sustainable Development
IUCN	International Union for Conservation of Nature
I&Aps	Interested and Affected Persons
KII	Key Informant Interview
LACWADO	Lake Albert Children and Women Advocacy and Development Organisation
LC	Local Council
LEQ	Equivalent continuous sound level
LHS	Left Hand Side
MGLSD	Ministry of Gender, Labour and Social Development
MLHUD	Ministry of Lands, Housing and Urban Development
MoES	Ministry of Education and Sports
MoH	Ministry of Health
MoU	Memorandum of Understanding
MoWE	Ministry of Water and Environment
MoWT	Ministry of Works, and Transport
NaFIRRI	National Fisheries Resources Research Institute
NCSS	National Cooperative Soil Survey
NDP II	Second National Development Plan
NEA	National Environmental Act
NEMA	National Environment Management Authority
NHP	National Health Policy
NHPC	National Housing and Population Census
NSSF	National Social Security Fund
NT	Near-Threatened
NWSC	National Water and Sewerage Corporation
OSH	Occupational Safety & Health
OVC	Orphans and Vulnerable Children
PAU	Petroleum Authority of Uganda
PCR	Physical Cultural Resources
PDP	Physical Development Plans
PHA	Persons with HIV/AIDS
PM10.	Particulate matter less than 10 microns in size
PM2.5	Particulate matter less than 2.5 microns in size
PNFP	Private Not for Profit
PPEs	Personal Protective Equipment
PPV	Peak Particle Velocity
PWDs	People with Disabilities
RDM	Road Design Manual
RE	Resident Engineer
RHS	Right Hand Side
RoW	Right of Way
SAS	Senior Assistant Secretary
SDG	Sustainable development Goals
SE	Supervising Engineer
SHS	Second Hand Smoke
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections

TC	Town Council
TDS	Total Dissolved Solids
ToR	Terms of reference
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shillings
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate change
UNMA	Uganda National Meteorological Authority
UNRA	Uganda National Roads Authority
URF	Uganda Road Fund
USDC	Uganda Society for Disabled Children
UWA	Uganda Wildlife Authority
VES	Visual Encounter Survey
VU	Vulnerable
WCS	World Conservation Society
WHO	World Health Organisation
WB	World Bank

EXECUTIVE SUMMARY

01 Introduction

The Government of Uganda (GoU) has secured funding from the World Bank to implement the Albertine Region Sustainable Development Project (ARSDP) in the Albertine region. The project aims at improving regional and local access to infrastructure, markets and skills development in the Albertine region with the following components:

- Component 1- Regional Access and Connectivity, implemented by Uganda National Roads Authority (UNRA),
- Component 2- Local Access, Planning and Development implemented by Ministry of Lands, Housing and Urban Development (MLHUD); and
- Component 3- Skills Access and Upgrading implemented by Ministry of Education and Sports (MoES).

Ministry of Lands, Housing and Urban Development is implementing Component 2 of ARSDP through three major sub-components including;

- Physical Planning; finances the preparation of Physical Development Plans (PDPs) for Nine (9) urban centers.
- Local Infrastructure; supports construction of local roads and local economic infrastructure.
- Technical Assistance and Oversight; supports among others consultancy costs for design and supervision of local roads and economic infrastructure, operational costs for the project support team, safeguards monitoring and management and provision of equipment to Local Governments.

Air Water Earth (AWE) Ltd was awarded the contract by MLHUD to conduct an Environment and Social Impact Assessment (ESIA) for part of Batch 2 sub-projects (roads and renovation of offices).

This non-technical executive summary of the proposed project presents a description of the proposed project and its justification, policy and legal framework within which the socio-environmental assessment was conducted, baseline along project road, project alternatives, outline of project impacts and mitigation actions proposed and environmental hazards management.

02 Project Description

a) Location

The proposed roads are located in Buliisa and Butiaba Town Councils, Buliisa District (Table ES1)

Table ES1- Project roads location

ROAD NAME	CODE	LENGTH (KM)	TOWN COUNCIL	PARISH/WARD	VILLAGES /CELLS
Gongo	C1	1.25	Buliisa Town Council	Central	Kizongi Civic
Commercial	C2	0.95		Central	Kizongi Civic
Muhoojo	C3	1.57		Western Central	Kityanga Civic
Speke	C4	0.40		Eastern	Kizikya

ROAD NAME	CODE	LENGTH (KM)	TOWN COUNCIL	PARISH/WARD	VILLAGES /CELLS
White	C5	0.80		Eastern	Nyapea Kizikya
Galende	C6	0.60		Eastern	Nyapea
Mukitale	C8	0.70		Eastern	Nyapea
Kalolo	C9	0.50		Western Central	Kityanga Civic
Kyamurwa	C10	0.45		Eastern Central	Nyapea Civic
Mutiti	C11	0.30		Eastern Western	Nyapea Kityanga
Rift Valley	C12	0.20		Western Eastern	Kitahura Kizikya
Siira	C13	0.50		Western	Kitahura Kityanga
Baker	C14	0.45		Western Eastern	Kitahura Kizikya
Wangalia	C15	0.55		Eastern Central	Nyapea Kizongi
Magali	C16	0.75	Butiaba Town Council	Piida	Kekeya Piida A
Access to the Marine & Butiaba Fish	C17	0.25		Piida	Booma
Part of Sseseko - Kawaibanda	C18	0.8		Piida	Kekeya Kaweibanda
Access to Health Centre	C19	0.2		Piida	

03 Objective, Scope and methodology of the ESIA

This environmental and social impact assessment was aimed at identifying potential environmental and social impacts of the proposed project, having established both Biophysical and Socio-economic baseline of the project area, with a view of eliminating/minimizing the negative impacts prior to, during and after project implementation while enhancing the positive impacts.

The scope of the ESIA was guided by provisions in the first schedule of the Environmental Impact Assessment regulations for Uganda and the approved terms of reference for the study, as well as international guidelines such as the World Bank Safeguard Policies.

05 Policies, Legal and Institutional Framework

The policy, legal and institutional framework relevant to the proposed project and to which it should comply have been cited. National polices and legislative framework, financial institution safeguard policies, as well as international agreements and conventions to which Uganda is a party are also discussed. Relevant permits which ensure compliancy during construction phase and road operations have been cited.

Box 0-1: Applicable Ugandan policies, regulations and international convention

Policy Framweork

- The National Environment Management Policy, 1994

- National Environmental Health Policy, 2005
- Uganda Gender Policy, 2007
- National Water Policy, 1999
- Uganda National Culture Policy, 2006
- Wildlife Policy, 2014
- National Policy on Elimination of Gender Based violence, 2016
- National Policy on Disability, 2006
- National Youth Policy, 2001
- National Child Labour Policy, 2007
- National Equal Opportunities Policy, 2006
- National AIDS Policy (2004) and National Strategic Framework for HIV/AIDS activities in Uganda
- Ministry of works & transport Policies (gender, HIV/Aids, OHS) 2008
- Uganda National Land Policy, 2013
- Uganda National Culture Policy, 2016

Legal Framework

- Constitution of the Republic of Uganda, 1995
- National Environment Act, 2019
- Water Act, Cap 152
- Land Acquisition Act, 1965
- Local Government Act, Cap 243
- Employment Act, 2006
- Occupational Safety and Health Act, 2006
- Workers' Compensation Act, Cap 225
- Physical Planning Act, 2010
- Public Health Act, cap 281
- Road Act, Cap 358
- Traffic and Road Safety Act Cap 361, 1998
- The Children's Act, Cap 59
- Historical Monuments Act, Cap 46
- The Penal Code Act, Cap 120 (as Amended, 2007)
- Uganda National Meteorological Authority (UNMA) Act 2012

Regulatory Framework

- Environmental Impact Assessment Regulations, 1998
- National Environment (Waste Management) Regulations, 1999
- National Environment (Noise Standards and Control) Regulations, 2003
- Draft National Air Quality Standards, 2006
- The EIA Regulations, 1998
- National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999
- National Environment (Wetlands, River Banks & Lakeshores management) Regulations, 2000
- Water Resources Regulations, 1998
- National Environment (Audit) Regulations, 2006
- National Environment (Control of Smoking in Public Places) Regulations, 2004

Institutional Framework

- Ministry of Lands, Housing and Urban Development (MLHUD)
- Ministry of Local Government Local
- Ministry of Water and Environment
- National Environmental Management Authority (NEMA)
- Directorate of Water Resources Management (DWRM)
- Ministry of Gender Labour & Social Development
- Ministry of Tourism, Wildlife and Antiquities
- Ministry of Energy and Mineral Development
- Petroleum Authority of Uganda (PAU)

- Directorate of Geological Survey and Mines

International Conventions and/or Agreements to which Uganda is Party

- The Convention on Biological Diversity (CBD)
- UNESCO World Heritage Convention, 1972:
- The Ramsar Convention on Wetlands, 1971
- The African Convention on the Conservation of Nature and Natural Resources, 1968
- The Convention for the Safeguarding of the Intangible Cultural Heritage, 2003
- The United Nations Framework Convention on Climate change (UNFCCC), 1992
- The Stockholm Convention

World Bank safeguard polices

- OP 4.01, Environmental Assessment
- OP 4.04, Natural Habitats
- OP 4.11 Physical Cultural Resources
- OP 4.12 Involuntary Resettlement

06 Baseline conditions of the project area

The proposed roads are located in Buliisa and Butiaba Town Councils in Buliisa district.

a) Geographical Location

Buliisa District is located between coordinates: 2° 11' 0" N and 31° 24' 0" E in mid-western Uganda and was carved out of Masindi District on 1st July, 2006. It is one of the districts in the western Albertine rift valley where a lot of oil and gas deposits have been discovered. Buliisa District is bordered by Nebbi District to the Northwest, Nwoya District to the Northeast, Masindi District to the East, Hoima District to the South and the Democratic Republic of the Congo, across Lake Albert, to the West.

b) Topography

Butiaba and Buliisa Town councils in which the project roads are found lay at low altitudes in the central plateau of Uganda with an altitude of about 680- 1,500m above sea level (a.s.l) (UWA, 2013). The lowest point in Uganda is Butiaba fish landing site on Lake Albert, Buliisa District at 682m.a.s.l. The terrain of the Buliisa town is flat and the area is devoid of steep slopes or hills and thus is prone to water logging.

c) Climate

Buliisa district receives a bimodal rainfall pattern with totals ranging from about 800 mm in the Lake Albert flat rising rapidly further away to the east above the escarpment to between 1250 - 1500 mm per annum before tapering off to 1000 mm in the eastern border areas of the District. The peak periods are between March - May and September to December (Buliisa DEAP, 2017/18-2019/20). Temperatures are moderate averaging between 18°C and 30°C with the hottest spot of Buliisa District lying in the Rift Valley. Monthly minimum temperatures vary between 12°C and 14.6°C and monthly maximum temperatures vary between 30.8°C and 38.5°C. The relative humidity is highest in May and lowest in January, following the temperature pattern.

d) Ambient Air Quality

At most secluded locations where monitoring was conducted, TSP levels conformed to the draft national limit of 0.300 µg/m^3. Gas monitoring equipment did not detect CO, NO, NO_2, Cl_2, ClO_2, H_2S and

combustible gases as well indicating a clean environment with respect to air quality. Gongo Road, (covering points at GPS 0323218, 0234452 and GPS 0323698, 0234526) was found to exhibit the highest dust concentrations during monitoring. This was due to the location's proximity to the CICO company camp. This road and the junction leading to it also experienced major vehicular traffic from the road works trucks moving in and out of the camp. Relatively high levels of dust at Speke road (GPS 0323942, 0232419) were also encountered due to the proximity to the road, capturing dust from moving trucks ferrying material along the main road.

Overall comparison of dust levels in the town council compared to national standards indicates one non-conforming road (Gongo road) at baseline levels. This existing impact is due to on-going works for the completion of Batch 1 roads under the ARSDP project. Areas at risk include the general Civic area and homesteads/ settlements surrounding workers' camp.

e) Ambient Noise

Some of the measured noise levels were above the National regulation threshold for noise in residential and commercial establishments, (i.e. above 55 dB (L_{Aeq}). Findings indicate conforming baseline noise for the roads in Butiaba Town Council. However, there was non-conformity in baseline noise levels at certain road sections in Buliisa Town Council.

Five (5) of the eighteen (18) roads in Buliisa Town Council indicated higher than average noise levels. These include:

- Baker Road (GPS 0323717, 0232366),
- Muhoojo Road Segment 1 (GPS 0323279, 0234064)
- Muhoojo Road Segment 2 (GPS 0323234, 0233574)
- Rift Valley Road (GPS 0323820, 0232146)
- Commercial Road Segment 3 (GPS 0323790, 0234384)

It was observed that higher vehicular-traffic contributed to the increased noise levels along these roads.

f) Findings of Biodiversity survey

The habitats along the roads were of modified agro-ecosystems, mainly fallow/ grazing land, or grasslands and with a few encounters of farmlands, of variable phyto-sociological combinations. Marshes/ wetlands were along the Access road to Butiaba HCIII and towards the Butiaba landing site pier.

There were no sensitive ecological receptors along the proposed road corridors, except the marginal wetland areas at the pier in Butiaba, and some marshes along the access to the Health Centre III, also in Butiaba. These are important hydrological features for regulation of water flow, and filtration. Hence it is critical that their protection is observed during road works.

i. Fauna

<u>Invertebrates</u>

A total of 97 butterfly species were recorded along the road sections. Distribution of species within the ecological habitats were used for classification. Habitat specific butterfly species were present; with two

(02) forest dependants, 08 forests edge/woodland species, 21 migrant species, 27 open habitat species, 37 widespread species and two swamp species (along the marshes and wetland in Butiaba).

Order Sauria was most observed within the landscape, because most lizards have well-developed limbs; the head is normally held high off the ground, and they are agile predators (Cogger, 2000), hence increasing their colonization success unlike the limbless Serpentes (Savage, 1992). While individuals of genus Mabuya, were most dominant because they are generalists with a wide ecological tolerance (Gerlach, 2005). The species records were of Least concern (IUCN, 2020).

Herpetiles

A few species under this taxon were recorded, being that the habitats are under constant disturbances by humans and livestock. The project areas within Buliisa have large numbers of livestock, and human presence both of which influence quality of habitats, and the resultant occurrences of reptiles and amphibians.

Birds

There was a total of 133 bird species, as provided in (Appendix V). None of these were in the threatened categories at national and global level. However, their habitats particularly trees along the project areas are critical for protection, to avoid, or minimize destructive practices to the species. But on the other hand because birds are mobile and swift in detecting any foreign objects or activities within their surroundings, they are able to translocate to safer areas quickly, which minimizes risks of impacting on their lives.

ii. Vegetation and flora

The habitats along the roads were of modified agro-ecosystems, mainly fallow/ grazing land, or grasslands and with a few encounters of farmlands, of variable phyto-sociological combinations. Marshes/ wetlands were along the Access road to Butiaba HCIII and towards the Butiaba landing site pier. Individual descriptions of the species compositions of the respective road site characteristics are provided in Table 4-19. Overall, a total of 110 plant species were encountered along the road corridor.

The classified habitats host various life forms of plants, but none of the plant species recorded were red listed (IUCN, 2020; WCS, 2016). All recorded species are widely distributed and common in other parts of Uganda, yet with no alarming conservation threats. Therefore, no potential impacts are anticipated on vegetation and flora.
However, given the nature of the project, there will be localized and negligible loss of habitats. Therefore, activities that culminate into loss of habitats also have negative impacts on displacement or loss of plants, thereby impacting on the vegetation cover.

g) Socio-economic findings

i. Ethnicity

Bagungu and Alur are the dominant ethnic groups in the study area. Bagungu are the original inhabitant of Buliisa. The Alur come from a larger area extending from north western Uganda (Nebbi, Zombo and Arua districts to north eastern Democratic Republic of the Congo. They are part of the larger Luo group).

Other ethnic groups that can be found in the study area include the Banyakole, Banyoro and Lugbara especially along the lake shores and as cattle keepers where livestock rearing is the major activity.

ii. Livelihood sources

Livelihood strategies in Buliisa and Butiaba Town Councils are based on subsistence level and are influenced by geographic location (e.g. proximity to the lake), ethnic group (predominantly fishing or farming), and seasonal changes. They mainly include fishing, agriculture, livestock rearing and trade activities. Findings of the survey indicated that in Butiaba Town Council, the predominant livelihood source is fishing (47.9%) since the Town Council is located near L. Albert whereas in Buliisa town council, majority of the respondents reported to depend on crop farming (64.6%).

Households in the Town councils do not only depend on one source of income. Much as those close to the lake in Butiaba predominantly carry out fishing on the lake, they also have gardens and practise crop farming and animal husbandry. Likewise, households Buliisa Town council that predominantly practise agriculture also engage in fishing at the lake. This livelihood diversification enables the households to cope with challenges that may affect their livelihoods e.g climate change.

iii. Land tenure

Buliisa district is characterised by three land tenure systems; customary, leasehold and freehold. Customary ownership is the predominant system in both Butiaba and Buliisa Town Councils. Findings of the socioeconomic survey indicated that majority of the respondents (71.3%) held land under the customary tenure whereas 15.6% and 13.1% held land under free hold and Mailo systems respectively.

iv. Sanitation

Findings of the socioeconomic survey conducted revealed that pit latrines are the most common type of excreta disposal in both Town Councils. 4.3% and 2.2% of the respondents in Butiaba and Buliisa respectively reported to practise open defaecation in bush and water.
In the project area, latrines have been built in most villages but overall latrine coverage is low at landing sites in areas close to L. Albert e.g in Butiaba and Biiso thus increasing the risk of water borne diseases such as cholera, typhoid, dysentery, diarrhea etc. whenever it rains or floods.
In a FGD with the informal landing site committees, they revealed that one of the major problems faced at the landing sites is poor sanitation due to the high water table that makes toilet construction difficult. This in turn increases the outbreak and spread of diseases such as diarrhea.

v. Communication

Information in the project area is best received through radios followed by community meetings. The most listened to radio in the project area is Biiso FM located in Biiso town. Other stations listened to include KBS, Kitara fm, Pakwach fm, Kings Fm, Paidha fm and BBS FM among others.

08 Analysis of alternatives

Four possible alternatives were evaluated. They included;

- Option 1: 'No project' scenario
- Option 1: Re-graveling the roads to 1st class gravel
- Option 3: Development of alternative Alignments compared to the existing one
- Option 4: Upgrading the proposed project roads to class II paved

The proposed project is upgrading already existing gravel roads to a bitumen standard. Therefore, alternative route different from the existing one would be economically, socially and environmentally untenable option since it would require new land acquisition; hence a huge social cost of associated resettlement yet no such cost would be necessary along existing road. That option would also have new environmental impacts that are currently not found along the existing road.

Re-graveling the roads to 1st class gravel may seem as a cheaper option than upgrading the roads to bituminous standards. However, this option would be expensive in the long run due to huge recurrent maintenance cost especially during or after rainy seasons. Re-gravelling is sustained by opening up of borrow pits which increase the foot print left by un-restored borrow pits, loss of aesthetic value, landscape degradation, erosion and siltation of water bodies among others.

Option 4 was thus selected as the most tenable option in order to achieve the objective of the project while considering cost and environmental impacts.

09 Potential Impacts and mitigation measures

Table 0-1: Summary of key potential impacts.

No.	Impact/Risk	Mitigation / Enhancement measures
Positive Impacts		
1.	Employment	Use locally available labour for the unskilled labour requirements and where the required skills are available locally, give local people priority commensurate to their level of training. Involve local leaders in recruitment process to ensure full and fair participation of local communities and screening out of lawbreakers; Avail Equal employment opportunity for women. Work with District Labour Officer to ensure that Uganda's labour laws (Employment Act) are complied with.
2.	Benefit to local retail businesses	Inform community about the project and available business opportunities. Sign agreements with local suppliers Sensitize workers about public health aspects mainly based on consumption of such food stuffs bought at the construction site from the locals. Ensure adequate, fair, and prompt payments to local suppliers
3.	Income to material / equipment suppliers and contractors	Where available in the required quantities and quality, source construction material from the project affected villages Sign agreements with local suppliers and ensure adherence to the conditions therein. Hire a NEMA registered sub consultant to undertake ESIA for material sources like gravel and quarries and ensure compliance to the conditions of approval of these ESIA certificates. Adequately restore all used up material sources. Ensure fair, adequate and timely payment to the land owners.
4.	Rental income for workers camp and equipment yard site owners	Clean up and restore sites where temporary facilities had been erected, when their use ceases. Agreements signed with land owners should include clauses on restoration

		Hire a NEMA registered sub consultant to undertake ESIA for the identified sites and ensure compliance to the conditions of approval of these ESIA certificates. Obtain workplace registration certificate from department of Occupational Health and Safety, Ministry of Gender, Labour and Social Development. Ensure fair, adequate and timely payment to the land owners. Ensure the site lay out and architectural drawings for the campsite and equipment yards are approved by the respective Town council and Buliisa District. Obtain development permit from the town council and district. Prepare a decommissioning plan for approval by MLHUD, respective town councils and Buliisa district.
5.	Improved access to social Facilities	Provide access to the schools, health centers, worship centers and markets identified along the roads Positioning of the street lights should consider the location of these social facilities
6.	Increased income from agricultural production, fishing and trade	The areas along the proposed roads at the Markets should be designed with bays to accommodate vehicles that will be transporting merchandise to bigger markets Traders, farmers and fishermen should form transport associations
7.	Increased value of land	Regulation of prices by the district land board to ensure that they are not over raised by property owners as this can discourage people from buying such land hence limiting development.
8.	Spur development in the area	The respective Town Councils should institute measures to maintain the aesthetic beauty brought about by these roads for example ensuring waste management through installing waste collection bins along the project roads and sensitizing the community especially roadside businesses about proper waste management to ensure the roads are kept free of litter
9.	Improved security in the area	Continuous community awareness on community policing to safeguard the street lights.
Negative Impacts		
10	Improper management of cut to spoil during construction	Identify sites for temporary stockpile of overburden Prohibit use of cut-to spoil (stripped overburden) to illegally reclaim wetlands. Develop and implement a Stockpile management plan to guide proper handling and management of these temporary stockpile sites.
11	Mismanagement of generated waste	Develop and implement a waste management plan Contracting a waste handling company to undertake collection, transportation and disposal of waste Proper handling of excavated material Waste minimization and segregation at source Integrated solid waste management Use appropriate protective gear during handling of waste
12	Loss of vegetation along project roads and access routes	Contractual obligation to restore areas of temporary land take after construction. Tree planting should be incorporated as a restoration

	to quarry/ borrow sites	Limit clearing to designated areas
13	Impact on Air quality	Dust suppression by sprinkling of water Installation of humps along the project roads as well as haulage routes to reduce the speed of trucks
14	Impact on Ambient Noise	Construction activities will be limited to daytime; Regular care and maintenance of vehicles and equipment will be undertaken to ensure they run smoothly so as to minimize emissions of noise; Project machines will be turned off when not in use;
15	Disrupted traffic and access	Provision of alternative routes with adequate and appropriate signs warning road users about traffic detours Notification of the community of the detours in advance through community meetings, radio and other measures. Employment of flag persons at detours to guide/ control traffic. As a condition of contract, diversions that cease to be of use when the road works are complete will be restored to as near as possible their original state, through landscaping and rehabilitation.
16	Soil Erosion and Drainage Impacts	Avoid unnecessary vegetation clearance For civil works undertaken during rainy periods, silt traps and interceptor drains shall be provided on site; Overburden or other construction materials shall not be stored or dumped near marshes; When construction is undertaken during rainy periods, the free flow of water shall be maintained using sludge pumps or flexible hoses to bypass the construction site without stagnating and contaminating the water; and,
17	Formation of bumps (protuberance on the road level) from construction of culverts	Provide appropriate signage toward the culverts at either side to warn road users of the protuberance on the road level Temporary humps can be installed before these culverts on either side to help reduce speed of motorists as they approach the culverts The contractor's community liaison officer should continuously inform the community on the progress of the construction activities, in this regard for example, emphasising that the roads will be eventually levelled and that the culvert bumps are temporary
18	Damage to material haulage roads	Provision of temporary road signage during construction and ensure drivers observe speed limits of 40km/hr. Contractor should maintain the haulage routes in a motorable state by rehabilitating the existing roads utilized for transportation of material during road construction. Training of Drivers on speed control through conducting tool box talks Contractor should provide speed control devices, for example, humps.
19	Accidents to school children and disruption of the learning process	Screening of the schools close to the roads (4 in number) Engage school administrators to sensitize pupils/students about the risks associated with the road construction and necessary precautions they need to undertake. Traffic guides e.g flag persons will be employed at construction sites close to schools in busy areas to control traffic

		Continuous sensitization of truck drivers and equipment operators to take caution when working in areas close to schools especially regarding speed control Humps will be erected across sections near schools to help in speed reduction
20	Infringement on the rights of women and girls in the work place	Develop and implement a sexual harassment policy containing reporting procedures in case of any incident and penalties to the culprits. Display of IEC material prohibiting violence and sexual harassment Induction and continuous sensitization of all workers and supervisors about sexual harassment Sensitization of workers on their gender rights and responsibilities. The project will install gender sensitivity facilities (toilets and bath shelters). Develop and implement a Code of Conduct Recruitment of Social Development Officer/ Sociologist to ensure compliance with Gender and equity requirements under the contract
21	Increase risk of HIV/AIDS and other STDs to workers and community	Continuous sensitization of workers and community should be conducted to raise awareness of HIV/AIDS As much as possible, construction workers should be accommodated at the camp to reduce interaction with the community that would increase the risk of HIV/AIDS spread Facilitate medical centers along project roads e.g Butiaba Health centre II and Buliisa health center IV with medical supplies like testing kits to deliver services to the community Provide free male and female condoms at the workers' camp preferably in the toilets and sensitize workers on their correct usage
22	Increase in Gender Issues including Gender Based Violence	Contractor with his/her subcontractors should be obliged to have Codes of Conduct for employees and anti-retaliation policies. Distribution of IEC materials to workers and communities within the project area Sensitization to both contactors and communities on gender related issues Empower community leadership to be able to protect the rights of children, woman and family norms. The contractors should have regular community engagement meetings. The contractors should have grievance redress mechanisms (GRMs).
23	Child Sexual Abuse and Exploitation	Develop a child protection plan which will be implemented in collaboration with community leaders, schools and districts. The contractor will be required to collaborate with communities to provide information where child abuse cases. Integrate HIV and AIDS awareness to children The community should be sensitized on the risks of child abuse Contractors should consult and engage the School administration before works commencement near the schools Minimize the interaction of children with the workers, and closely monitor and report worker's behaviour/conduct. Involving school management committees in ensuring accidents prevention and management

24	Insecurity	Involve LC1s in recruitment of workers who should all present national IDs for easy identification; Hire security guards from a registered company that have records of each guard, to protect both the contractor and the project site; Ensure adequate lighting at the site at night; Collaborate with Buliisa and Butiaba police stations. "No Trespassing" signs will be prominently displayed on fencing or the perimeter of the job site. Such signs will discourage unauthorized intrusion onto the job site and if correctly worded aids in the prosecution of apprehended trespassers.

10 Conclusion

This ESIA has developed an Environmental and Social Management Plan (ESMP) to guide construction works during the upgrading of the proposed roads. The ESMP was based upon environmental and social baseline and identification and assessment of potential environmental and social impacts of the proposed project with a view of minimizing negative impacts prior to, during and project implementation. With implementation of mitigation actions herein proposed, potential adverse impacts of project activities will be mitigated and positive ones enhanced

1. INTRODUCTION

1.1 Background

The Government of Uganda (GoU) has secured funding from the World Bank to implement the Albertine Region Sustainable Development Project (ARSDP) in the Albertine region. The project aims at improving regional and local access to infrastructure, markets and skills development in the Albertine region with the following components;

a) **Component 1: Regional access and connectivity;** aimed at improving overall accessibility to the Albertine region, reduce travel times and improve access to markets and services. Implemented by Uganda National Roads Authority (UNRA) - Kyenjojo-Kabwoya-Hoima-Kigumba Road upgrade to Class II (bitumen) standard.
b) **Component 2: Local access, planning and development**; aimed at increasing rural accessibility to markets and services, prepare selected key urban centres for growth and provide economic infrastructure targeting key sectors in the region. This is implemented by Ministry of Lands, Housing and Urban Development (MLHUD) in collaboration with Buliisa and Hoima Districts.
c) **Component 3: Skills access and upgrading**; aimed at increasing the access and upgrade of skills through upgrade of Business Technical Vocational Education and Training (BTVET) in oil and gas, orient it to the private sector demands and provide access to BTVET to the people living in Albertine region. This is implemented by the Ministry of Education and Sports (MoES)

MLHUD is implementing Component 2 of ARSDP through three major sub-components including:

a) **Physical planning**: financed the preparation of Physical Development Plans (PDPs) for Nine (9) urban centers; Wanseko and Biiso in Buliisa District, Kigorobya & Butema in Hoima District, as well as Kiziranfumbi, Kyangwali, Kabwoya, Kyarushesha and Buhuka in Kikuube District. In addition, support to capacity building of the respective councils to implement PDPs was done.
b) **Local infrastructure:** supports construction of local roads and local economic infrastructure. Under roads, the focus shall be on improvements and/or repair of District/Town Council roads to make them motorable all year around. This will involve removal of bottlenecks to access that may include repair/ provision of bridges, culverts, raising of critical road sections especially in swampy areas and any other spot improvements. In addition, 19 roads segments (12 Km) mainly Buliisa Town Council and Butiaba Port shall be upgraded to bituminous standard. The local economic infrastructure targeted include 13 markets, 02 fishing landing sites, 25 fish cages and 01 animal slaughter house.
c) **Technical assistance and oversight:** support among others consultancy costs for design and supervision of local roads and economic infrastructure, operational costs for the project support team, safeguards monitoring and management and provision of equipment to Local Governments.

1.2 Purpose of the Environmental and Social Impact Assessment (ESIA)

The roads proposed to be upgraded to bituminous standards are located in an urban area (Buliisa Town Council) whereas those in Butiaba Town Council are located in heavily built up areas and ecosystems at the landing site that can be affected by project implementation. The purpose of the ESIA study was to ensure that the project is implemented in such a way that there is little or no adverse impact on the bio-physical, socio-economic and cultural attributes of the environment of the proposed project area.

The National Environmental Act No. 5 of 2019 contains provisions for environmental management and protection including the need to carry out ESIA for projects listed in Schedule 5 of the Act. The proposed road project is listed under Section (1); Transport, transportation equipment and related infrastructure, Sub section (a) Construction of public roads not being community access roads, including— (i) Enlargement or upgrade of existing public roads, for which environmental and social impact assessments are mandatory. This ESIA was thus conducted in fulfilment of this legal requirement.

1.3 Objectives of the ESIA

1.3.1 General Objective

This environmental and social impact assessment was aimed at identifying potential environmental and social impacts of the proposed project, having established both Biophysical and Socio-economic baseline of the project area, with a view of eliminating/minimizing the negative impacts prior to, during and after project implementation while enhancing the positive impacts.

The specific objectives are intended to ensure that development and implementation of the proposed project bears socio-environmental accountability against national regulations and environmental requirements.

1.3.2 Specific Objectives

The specific objectives of the study are as stated below;

i. Identify any legislation/ safeguard policies that are triggered as a result of the proposed project activities and assess their relevance/implication to the proposed project activities.
ii. Consult with relevant stakeholders to obtain their views and suggestions regarding the environmental and social impacts of the proposed development.
iii. Establish the baseline socio-economic, physical and natural environment within the project area.
iv. Describe the identified significant potential negative and positive environmental and social impacts that may occur during the construction, operational and decommissioning phases of the project;
v. Analysing the significance of the adverse environmental and social impacts;
vi. Identify mitigation measures and cost estimates for the negative environmental and social impacts of the proposed development;
vii. Compile an Environmental Impact Statement incorporating an Environmental and Social Management Plan (ESMP) that will assist in the decision-making process and serve as a basis for future environmental monitoring of the project and decommissioning stage.

1.4 ESIA process

The ESIA followed the EIA process as presented in the Guidelines for Environmental Impact Assessment in Uganda (Figure **1-1**).

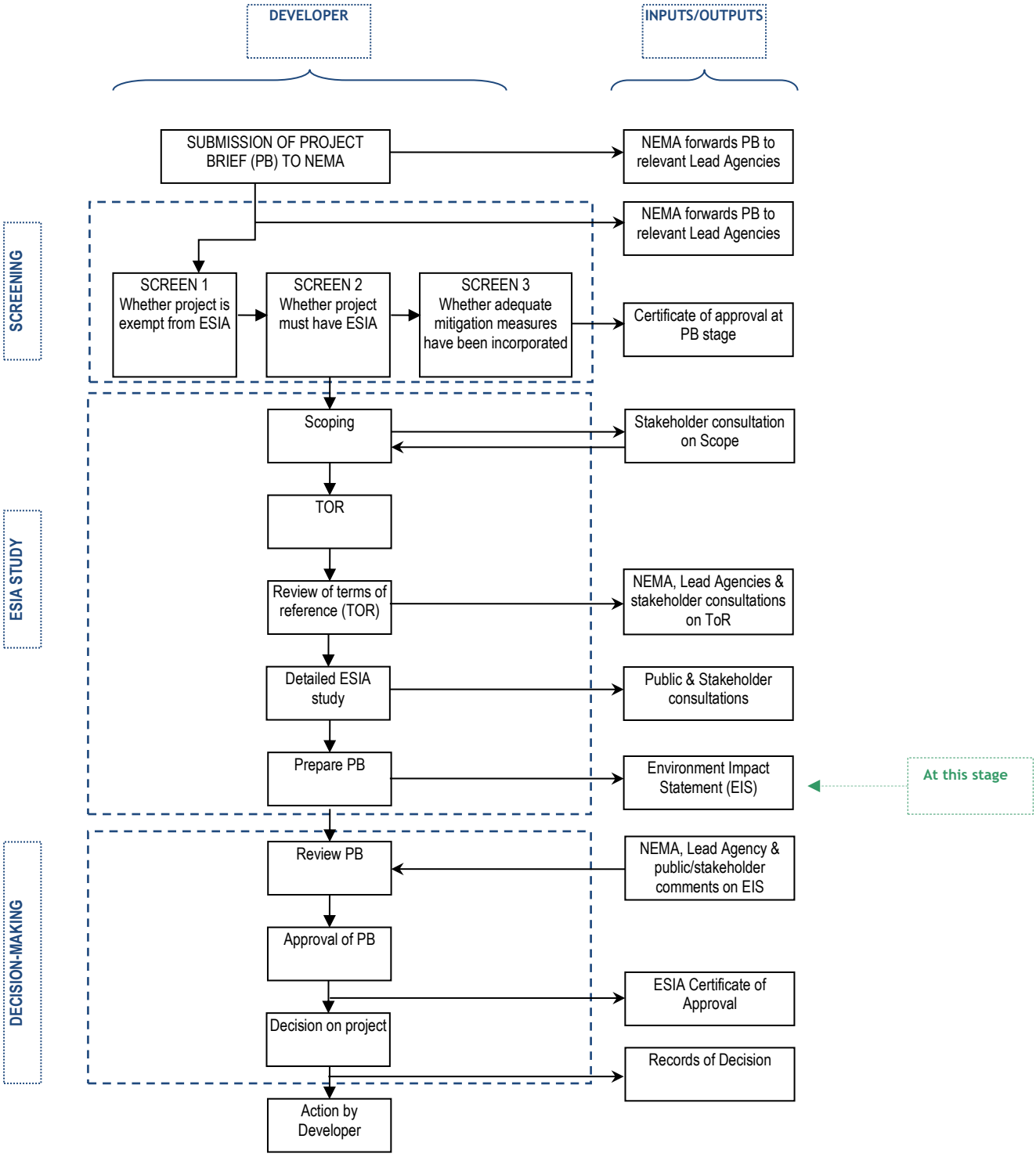


Figure 1-1: EIA process in Uganda (Guidelines for Environmental Impact Assessment in Uganda, 1998)

1.5 Outcome of the scoping exercise and ToRs

The ESIA study commenced with a scoping exercise which was conducted between 6th and 24th January 2020 with the aim of obtaining an understanding of existing conditions and components of the roads to be upgraded, and develop terms of reference to guide the detailed socio-environmental assessment.

Specific objectives of the scoping exercise were to:

i) Identify key stakeholders and engage them for information that would inform ESIA terms of reference;
ii) Disclose project information to key stakeholders and interested parties.
iii) Determine an appropriate spatial and temporal scope for impact assessment;
iv) Identify suitable survey methodologies;
v) Identify key environmental and social issues;
vi) Undertake preliminary identification of likely impacts.

Key stakeholders were engaged during the scoping phase in order to capture specific issues in the project area that informed the development of Terms of References for this ESIA study.

These included;

- The client (MLHUD) – 6th January 2020
- Buliisa District Local Government - 8th January 2020
- Buliisa Town Council - 8th January 2020
- Design Consultant - 24th January 2020

The scoping exercise resulted into the development of Terms of References which were submitted to NEMA for review and were subsequently approved by the same authority. (Appendix I). **Table 1-1** outlines the conditions of approval of the Terms of Reference and their consideration in the ESIA report.

Table 1-1: Compliance of the ESIA to the ToR Approval conditions by NEMA

No.	ToR Approval Condition	ESIA Consultant's Compliance
1.	Ensure that adequate consultation is conducted with Ministries, Departments, & Agencies, District & Sub-County Local Governments; and Communities	Adequate consultations were conducted; details in Chapter 7; emerging issues pointed out in Section 7.6 and other details included in Appendix II
2.	Provide detailed description of project design and all technical aspects, and indicate whether the proposed project will be implemented in phases or not	The consultant has provided a description of the project including designs aspects and proposed project activities under Chapter 3.
3.	Ensure that a comprehensive information related to the project area is provided	A presentation of baseline physical, biological and socioeconomic environment of the project area has been provided under Chapter 4.
4.	Carry out modelling of noise, vibrations and particulate dispersion in order to establish the extent of influence of the dust, noise and particulate emissions from the project operations on the environment. Also append the water, air quality and noise levels analyses result from project activities and water, relating to the project affected areas onto the ESIA report	Measurement of particulate dispersion, vibration and noise levels were taken and findings have been included in the report under 4.1 and Appendix VI.
5.	Conduct a biodiversity assessment on fragile ecosystems adjacent including Lake Albert and/or to be traversed by the project and ensure that evidence of the study is appended to the ESIA report	Biodiversity assessments were conduct and findings have been presented under 4.2 and Appendices III, IV and V.

6.	Provide and append a list of all project affected persons identified within the confines of the area that will be affected by project activities	This has been handled in Section 4.4.1 of the report
7.	Provide a full geographical description of the area (boundaries including the area to be affected by the project) to be affected by the proposed action and asset of GPS coordinates. This should also include well labelled maps and illustrations covering the whole area to be affected to enable this Authority make an informed decision about the proposed project (preferably on A3 paper size).	These have been provided under Section 4.3.1; all areas traversed by the planned roads have been captured in Table 4.24.
8.	Provide details of the various project components and activities covering both construction and operational phases of the project, including information on the phases, types of construction material and locations of sites the construction material will be extracted from; as well as location of the temporary worker's camp and storage/parking yard.	Details of project components, construction material and their sources have been presented under Chapter 3.
9.	The ESIA study should incorporate the materials to be used for construction and their effect on the water quality of the water sources to be traverse by the road and measures that will be put in place to avoid oil spillage during construction; hence an outline of oil spillage contingency or management plan should be provided in the ESIA report. The study should also state the management and disposal of the cut to spoil arising from road construction	Materials to be used during construction have been presented under 3.4. A spill response plan has been include under 9.4.14 and impacts related to management of cut to spoil material have been analysed and management strategies proposed under 8.2.1.
10.	Ensure that comprehensive/detailed evaluation of the environmental and social impact associated with the project components and activities is provided as well as comprehensive mitigation and environment management and monitoring plans (preferably in table and matrices from) to cater for the identified significant environmental impacts and risks, respectively.	A detailed analysis of the impacts associated with the proposed road construction has been conducted and mitigation measures proposed under Chapter 8. Chapter 9 presents an ESMP to guide and monitor implementation of the proposed measures.
11.	Indicate the actual project (investment) cost including cost of works, machinery/equipment and land where applicable.	The project investment cost has been included under 3.5.4.

2. ESIA METHODOLOGY

2.1 Literature review

Existing literature related to the proposed project was reviewed, including available documentation on the proposed project from the design engineers (ARSDP Project Operation Manual, Feasibility Study and Preliminary Design Report for Tarmac Roads and Detailed Engineering Design for Tarmac roads). Existing literature on the project area (District Development Plans, District State of Environment Reports and District Environmental Action Plans). The Guidelines for Environment Impact Assessment in Uganda as well as other existing national and international (World Bank) policies, guidelines, standards, and legislation were also referred to. A full list of all literature referred to is given under the reference chapter of the report. For all taxonomic groups to be surveyed literature review was conducted to compile all available secondary data. Land cover maps showing the proposed site were as well produced to guide the planning of field surveys.

2.2 Stakeholder Consultations

Stakeholder consultations were carried out at the scoping stage and continued throughout the whole ESIA process. Consultations ensure that all stakeholder concerns are incorporated into project planning and implementation. This in line with the statutory consultation requirements under World Bank environmental and social safeguards policies, as well as the first schedule of the EIA Regulations for Uganda. Consultations were done at National, District and Local levels.

The team carried key informant consultations with various stakeholders with objective of;

- Capturing their specific issues of interest / concern related to the project;
- Obtain preliminary baseline data (local knowledge);
- Gauge attitudes towards the project;
- Gather recommendations and suggestions as per project impacts
- Engage the stakeholders on the progress of the intended ESIA project works

The Table below shows the different stakeholders and the method of data collection.

Table 2-1: Stakeholders and method of data collection

Stakeholder category	Method of data collection	Number of participants	
		Male	Females
National	Key Informant interviews	4	1
District Local Government	Key Informant interviews	7	3
Town Council	Key Informant interviews	15	6
Vulnerable Groups	Focus Group Discussions	16	9
Civil Society	Key Informant interviews	2	1
Household heads	Questionnaires	373	177

2.3 Field Baseline surveys

2.3.1 Biodiversity Survey

Flora

Sampling locations followed pre-determined geo-referenced road alignments that were varying in length. Each geo-referenced road was considered as an independent transect along which the surveys were conducted to record observed plant species. The sampling conformed to the general base line (gradsect) (Wessels et al. 1998) that enabled the traversing of existing vegetation types.

Surveys and records of floristic features along the transect were within 20 meters from the center-line on either sides, to ensure any sensitive features were captured as the road works were envisaged to have direct impacts on vegetation either through clearances or damage through dumping of cut and spoils along the roadsides, and subsequent erections of temporary facilities.

Site specific vegetation descriptions to determine habitat types were based on species dominance and floral features such as herbs, shrubs and trees along the transects.

Upon a comprehensive identification of the flora records and habitat type determination, analysis of likely impacts to the vegetation and flora was also assessed vis-a-vis the anticipated project activities. Also, of interest was the occurrence of invasive species in or near the project area, and the proximity of the study area to other ecologically sensitive features.

Fauna

i. Butterflies

Insects dominate the terrestrial and aquatic ecosystems in terms of species richness, individual abundances and biomass (Gaston, 1991), and are highly susceptible to the adverse effects of disturbances.

However, among all insects, butterflies are widely used as bio-indicators. They are known sensitive indicators of environmental change associated with natural and human-induced disturbances. Their populations are influenced by changes in local climatic conditions and the availability of host plants for larval and adult stages (Ehrlich et al., 1972). Frequently disturbed environments are considered unstable and unpredictable and as a result have low species diversity, whereas less disturbed, more stable environments are expected to promote high species diversity (Odum, 1985).

Therefore, species of the adult butterflies in the target areas were sampled systematically using **sweep net method**. The sampling conformed to similar transects and distance as described for the vegetation (20 meters from the center-line on either sides) being that such coverage was perceived as the direct impact zones for the invertebrates. Opportunistic observations outside the transects were also included to help build the species list, being that this fauna taxon is mobile. Records of all the butterfly species observed based on their wings were made in the field. Individuals that were difficult to identify on wings were collected and preserved for further identification at Makerere university herbarium.
In the classification, each of the butterfly species was assigned to one of the ecological categories as described by Davenport et. al.; 1996. The major categories considered included forest dependent species (F), forest edge/woodland species (f), open habitat species (O), widespread species (W), migratory species (M), and wetland species (S).

ii. Herpetiles

Visual Encounter Survey (VES) method

Herpetiles (Reptiles and amphibians) were surveyed using Visual Encounter Survey (VES) method. Random search during VES increases chances of finding animals in addition to covering a wider survey area. The sampling conformed to similar transects as described for the vegetation (20 meters from the center-line on either sides), given the extent of clearance and indirect damage expected, but with an underlying assumption that such areas could have had micro-habitats for herpetiles. But opportunistic observations outside the transects were also included to help build the species list, being that this fauna taxon is mobile. This method involved a search on the ground, in the leaf litter, and cassava dominated gardens and encountered species were noted.

Interview with Local People

Reptile surveys for this assignment were also conducted through interviews with local people, asking them about physical signs (skin shades and color, prints, bones, fecal samples etc.) of reptile presence within the area.

Amphibians and reptiles were identified using standard reference books available namely; Schiotz et. al.; 1972; and Drewes et al. (2006). The IUCN red list was used in the species categorization of the amphibians and reptiles.

iii. Mammals

Terrestrial mammals vary widely in ease of observation and different survey methods may be applied for different species. Conspicuous and large mammals may simply be counted by direct observation. The species that may be of particularly high interest for conservation tend to be the more secretive and nocturnal. A variety of other techniques such as searching for traits, trapping, sonic detectors or mist netting (both for bats) can be employed where necessary for surveying mammals which are difficult to observe directly. Combinations of these methods were used.

Direct methods
This involved direct sighting and species counts of encountered mammals.

Indirect methods
Indirect methods were identification of mammalian dung, calls, bones, tracks, foot prints and asking local informants on the presence of mammals. Data from each of these methods was noted as encountered at survey locations as well as along transects while moving between points.

Conservation status
The conservation status for each mammal recorded was obtained from the published and most recent IUCN red list (IUCN 2017) and the Red List of Uganda's Nationally Threatened Species (WCS, 2016). In these references, species are assessed as to whether they are **CR** – *Critical,* **EN** – *Endangered,* **VU** – *Vulnerable,* **NT** - *Near-Threatened,* **LC** - *Least concern or* **DD** - *Data deficient.*

iv. Avifauna

The sampling conformed to similar transects as described for the vegetation. But opportunistic observations outside the transects were also included to help build the species list, being that this fauna taxon is mobile. Birds were surveyed within different habitat types. A line transect count was used at 50 metre interval, and the distances were varied based on respective road length. A line transect count is preferred in terrestrial systems, and it is universally applied to species from different ecological categories (Gibbons and Gregory 2005). Bird identification was based on Stevenson and Fanshawe (2002). Species were assessed against the IUCN Redlist (IUCN, 2020) in order to understand their conservation status.

Habitat Classification

Birds recorded were classified into categories, where possible, basing on the standard habitat classification by Bennun and Njoroge (1996) and Carswell *et al*. (2005). This classification is widely used in evaluation of avifauna in Uganda (Table 2-2).

Table 2-2: Classification of birds according to their habitat requirements

Category	Description	Abbreviation
Forest birds	Forest specialists, cannot survive outside the primary forest	FF
	Forest generalists or forest edge species. They can live in the forest and at the forest edge or a degraded forest	F
	Do not live in the forest, they come to the forest as 'visitors'	f
Water birds	Species restricted to wetlands/open waters. They cannot survive outside an aquatic environment	W
	Water bird non-specialist-often found near water. They can as well survive where there is no water.	w
Grassland birds	Live in grassland habitats and sometimes in cultivations	G
Wide spread	These are generally found in all habitats but tend to avoid forests	Ws
Agricultural farmland	These are species that can be found in cultivated areas like gardens and settlements.	NF

A species can fit into two ecological categories; for instance, it can be both a water non specialist at the same time forest visitor. In this categorization, it is important to note that species of the open areas are not categorized to finer details of vegetation descriptions and are based on generalizations of natural habitat types. Bush land and human modified habitats such as gardens and settlements are not directly included. Because they are not tied to any restrictions, species in the non-specialist categories i.e. G, f, F and W can inhabit a wide range of open habitats in the landscape including bush land, woodland, and cultivated areas. The 'FF', 'F' and 'f' species also comprise of the tree species and stress the importance of trees in areas where they are recorded.

Conservation Status

Birds were further classified according to their conservation status i.e. whether they are species of conservation concern (C) as from Bennun and Njoroge (1996), Carswell *et al*. (2005) and the IUCN Red List of Threatened Species described as species of global (G) or Regional (R) importance in the categories of; CR - Critically Endangered, EN – Endangered, VU – Vulnerable, NT - Near-Threatened, LC – Least Concern. Bennun and Njoroge (1996) also recognize a category RR - Regional Responsibility, for species that may not be globally threatened but are at regional level and this has been included here.

2.3.2 Socio-Economic Baseline

Social baseline conditions are important in understanding potential socio- economic impacts of the project components such as its effect on existing social services, availability of local labour and induced changes in population dynamics (in-migration, effects on domestic violence, family breakups, child labour, school drops, early marriages and HIV/AIDS among others). Factors such as literacy levels in the local community influence how objectively a project is perceived and appreciated. Community expectations for the project benefits to improve their conditions of living and local infrastructure are more common in poor communities than wealthier ones. In addition, project sustenance in an impoverished and low-literacy community is harder since people are more likely to vandalize equipment or pilfer materials they perceive

to be very valuable, yet are of no resale value to them. The road construction project has been proposed in an area where there is significant human settlement and this was surveyed for socio-economic baseline conditions.

Objective of socioeconomic baseline study

Objectives of this specific study were:

i. To assess the existing situation of the proposed project area.
ii. To analyze the socioeconomic impact of the proposed project on the local community.
iii. To collect the community's expectations and fears about proposed project.
iv. To build a prior trust between stakeholders of project and local community.

Sampling procedure for Quantitative data collection

The study population was randomly selected from households along the road and those within the direct zone of impact. Household heads were selected as the major respondents in this survey since they have sufficient and required information. A total of 492 respondents were administered with a structured questionnaire in the villages traversed by the roads to be upgraded. 227 of these were from villages traversed by proposed roads in Buliisa Town Council (Nyapea, Kitahura, Kizongi, Kityanga, Kigoya, Civic and Kizikya villages) whereas 261 were from villages traversed by roads in Butiaba Town Council (Kekeya, Piida A, Booma, Kawaibanda villages). The number of questionnaires for each road link was mainly determined based on the settlements along the road and availability and willingness of respondents to respond to the questions. A sample size of 30% of the total number of households in the village/cell was selected. Interviewer administered questionnaires (Appendix VII) were used for the socioeconomic household survey.

Methods of data collection

i. *Key Informant Interviews*

Key informant interviews were conducted to gather information from leaders at National, District, Sub-county levels and community. The sample at the district level included. Chief Administrative Officer, LCV Chairperson, District Natural Resources Officers, District Environment Officers, District Community Development Officers, District Land Officers, District Engineers, District Physical Planners and District Water Officers, District Education officers, District gender and probation officers; details of these engagements are in Appendix II.

ii. Focus Group Discussion

This technique involves a small group of respondents (usually 6-10 respondents) who are interviewed together in a common location. The interviewer leads the discussion and ensures that every person has an opportunity to respond. Focus groups allow deeper examination of complex issues than other forms of survey methods. Two focus group discussions were held with the two Town Council leaders each involving an average of 6 people. The Town Council sample included: Town Clerks, Mayors, Community Development Officers, Town Engineers, Town physical planners and area council representatives.

iii. Structured interviews

Primary data was collected by interviewing sampled members of the study population. The structured interview method was used to collect household data with the aid of a structured questionnaire.

The table below summarises the data collection methods, study participants and sampling method used.

Table 2-3: summary of study participants and sampling method used

Data Collection method	Participant category	No of Participants		Sampling method
		Male	Female	
Structured Questionnaire	Local Residents	373	177	Probability sampling (random)
Key Informant Interviews	Officials from Ministries, Departments & Agencies, DLG, TC, CSOs etc	34	10	Purposive
Focus Group Discussion	PHA groups, LC Officials,	17	5	Purposive

Data analysis

i. Quantitative data

Data was regularly cleaned before entry. Quantitative data from the questionnaires was entered and analyzed using the Statistical Package for Social Scientists (SPSS). Frequency and percentage tables as well as bar charts were generated and used to present the quantitative results.

ii. Qualitative data

Qualitative data was transcribed and arranged according to existing and emerging themes through content analysis methods. The qualitative analysis largely followed the questions and themes of the study within the interviews and FGD guide.

iii. Ethical considerations

Consent to conduct the study was sought from the district, sub counties, Town councils and community leaders. All respondents in the study were informed that participation in the study was voluntary and all information collected would be used to strictly inform the planning process of the proposed project.

2.3.3 Physical environmental survey

A. Baseline Air quality

A series of measurements, using passive samplers (an electronic light-scattering device (CEL-712 Microdust Pro) and portable electronic monitors were undertaken at selected areas identified as having relevant sensitive receptor exposure (homesteads, health facility, school) and others areas of commune like places of worship.

B. Ambient Noise

Noise measurements were taken using a Casella CEL-62X - Digital integrated sound pressure meter. Measurements of background noise levels were performed at locations across the Town Council with possible receptor exposure. All the measurements were slow and Impulse time weighted. Percentile

parameters L_{AF90} (the noise level exceeded for 90% of the measurement period, A-weighted), L_{AF50}, L_{AF10} and L_{Aeq} (A-weighted, equivalent sound level - with the same Energy content as the varying acoustic signal measured) were recorded. All measurements were taken during daytime the results are presented in Section 4.1.8.

C. Ground Vibrations

Vibrations produced by the proposed road development activities in Buliisa Town Council have the potential to cause annoyance to human receptors, to disturb wildlife receptors, and to cause damage to building structures. Construction sources on the other hand include pile driving, dynamic compaction, blasting, and operation of heavy construction equipment. These vibrations may harmfully affect surrounding buildings, and their effect ranges from disturbance of residents to visible structural damage.

For the project roads, measurement of baseline ground vibrations was done using a factory calibrated *Nomis SuperMini* graph digital seismograph. Measurement criteria was to capture existing vibration frequencies before the anticipated road upgrades. The parameters measured were velocity and frequency in the vertical, longitudinal and lateral axes ('R', 'T', and 'V') axes as well as sound pressure levels; the results are presented in Section 4.1.9.

The transducer on the seismic channel of the seismograph was inserted on its spikes firmly into the ground, the microphone on its sound pressure channel also positioned atop its stake and pointed towards the suspected ground vibrations source and readings monitored for 20 minutes. Maximum readings recorded were then saved.

D. Water Quality Survey

A total of two water samples were collected. The samples were collected from points on Lake Albert adjacent to the project roads. The choice of the sampling points was based on proximity to a potable water source. All the sampling locations were geo-referenced.

Two sets of samples were taken from each sampling location, one for physio-chemical analysis and the other as a back-up sample. All samples were transported in a cool box (kept at 40C) to the laboratory on the same day of sampling before analysis on the following day.
During sample collection, in-situ water quality measurements were carried out, including pH, temperature, dissolved oxygen (DO) (mg/L), DO Saturation (%), conductivity (mS/cm or microS/cm), total dissolved solids (TDS) (mg/L), oxidative reduction potential (ORP) (mV), resistivity (ohm.com or Mohm.cm or Kohm.com), salinity (PSU) and atmospheric pressure (mmHg). In-situ measurements were taken using HANNA HI 9828 multi-parameter water quality meter. For each sample location, GPS coordinates were recorded and presented in a tabular format.

E. Soil Sampling and Analysis

Baseline study of the soils and geology in the project area was done to characterize the soils in relation to their physical, biological and chemical properties so that these attributes are known and documented prior to the construction phase of the project roads. This baseline data or information is meant to guide the monitoring teams during project execution. The specific objectives of the survey included: Description of the soil properties and Soil sampling to determine erosivity.

Soil sampling points were informed by the Food and Agriculture Organisation (FAO) soil types shapefiles together with the project roads shapefiles. From the soils and geology map of Buliisa District, it can be observed that the project roads traverse through two soil types out of the four in the District. The two soil

types that the project roads traverse include; Calcisols and Lixic Ferralsols. The sampling points (2 No.) were chosen from areas with both soil types in the project area so as to have an understanding of the physical properties of the two soil types. With guidance of a handheld GPS unit, two samples were picked from the chosen locations.
Soil samples were taken using a soil auger at a depth of 0-20cm and 20-30 cm from both sampling locations. The sampling points were georeferenced and samples kept in a water tight bag. A routine analysis was conducted for pH, Textural percentages (Sand, Clay, and Silt), Saturation, Saturated Hydraulic conductivity (Ksat), Organic matter, Bulk Density and Organic Carbon.

2.3.4 Physical Cultural Resources Survey

Archaeological surveys were done to examine the earth's surface for sites and archaeological record such as artifacts, eco-facts and features for example stone and bone tools, metallurgical implements, potsherds and others, bones, skeletons and storage pits, fire places (hearths), house foundations or even rock paintings and engravings on cave walls or boulders (Humphreys, 1986).

For Ethnographic surveys, consultations with communities and other stakeholders were done to gain an understanding of interpretations on some sites since these are regarded to be custodians of our recent past histories. Among those consulted were Bunyoro – Kitara Kingdom cultural leaders, Bugungu Heritage information center and religious leaders.

Community oral interviews were also conducted to identify sites of cultural heritage importance and their significance. Stakeholders guided the survey team to some of the heritage sites and gave recommendations on what should be done in case the heritage was to be affected by the proposed road project.

2.4 Impact Significance Assessment

2.4.1 Impact Description

Describing a potential impact involves an appraisal of the proposed road upgrade components together with the attributes of the receiving environment. Relevant impact characteristics may include whether the impact is:

- Adverse or beneficial;
- Direct or indirect;
- Short, medium, or long-term in duration; and permanent or temporary;
- Affecting a local, regional or global scale; including trans-boundary; and
- Cumulative

Each of these characteristics was addressed for each impact. Consideration of the above gave a sense of the relative **intensity** of the impact. The **sensitivity** of the receiving environment was determined by specialists based on the baseline data collected and literature data during the study.

2.4.2 Impact Evaluation

Each impact was evaluated based on impact intensity and receptor sensitivity. Impact significance was evaluated and presented pre and post mitigation**.** The scale of intensity was defined from impact characterization on the basis of ecological-toxicological, physical-chemical and social studies and expert judgment (Table 2-4).

Table 2-4: Criterion of intensity scale gradation for anticipated project environmental impacts

Scale of Impact Intensity	Criterion	Score
Very low	Environmental changes are within the existing limits of natural variations	1
Low	Environmental changes exceed the existing limits of natural variations. Natural environment is completely self-recoverable.	2
Medium	Environmental changes exceed the existing limits of natural variations and results in damage to the separate environmental components. Natural environment remains self-recoverable.	3
High	Environmental changes result in significant disturbance to particular environmental components and ecosystems. Certain environmental components lose self-recovering ability.	4

Intensity was more particularly defined in terms of extent and duration (Table 2-5).

Table 2-5 Classification of impact evaluation

Impact Intensity Characteristic	Description
Extent	Evaluation of the area of occurrence/influence by the impact on the subject environment; whether the impact will occur on site, in a limited area (within 2 km radius of the site); locally (within 5 km radius of the site); regionally (district wide, nationally or internationally).
Persistence/Duration	Evaluation of the duration of impact on the subject environment, whether the impact is temporary (<1 year); short term (1 – 5 years); medium term (5 – 10 years); long term (>10); or permanent.

2.4.3 Impact Significance

Determination of the potential impact severity was premised on the product of the intensity of the impact and the sensitivity of the receiving environment. Matrix of impact severity involved assigning numerical or relative descriptors to the impact intensity and receptor sensitivity for each potential impact. As such, each was assigned a numerical descriptor of 1, 2, 3, or 4, determined as being equivalent to very low, low, medium or high respectively. The severity of impact was then established by the product of the two numerical descriptors, with severity described as negligible, minor, moderate or major (Table 2-6).

i) Moderate: Impacts in this region are considered tolerable but efforts must be made to reduce the impact to levels that are as low as reasonably practical. Shaded orange.
ii) Minor: Impacts in this region are considered acceptable. Shaded blue.
iii) Negligible: Impacts in this region are almost not felt. Shaded green.

Table 2-6: Determination of impact significance

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

			Minor	Moderate	Major	Major

The textural description of the descriptors ranging from "Very low" to "High" is presented in **Table 2-7**

Table 2-7: Criteria for rating impact intensity and likelihood

Criteria	Rating scales
Intensity (the expected magnitude or size of the impact)	**Very Low**- where the impact affects the environment in such a way that natural, and /or cultural and social functions and processes are negligibly affected and valued, important, sensitive or vulnerable systems or communities are negligibly affected.
	Low- where the impact affects the environment in such a way that natural, and/or cultural and social functions and processes are minimally affected and valued, important, sensitive or vulnerable systems or communities are minimally affected. No obvious changes prevail on the natural, and / or cultural/ social functions/ process as a result of project implementation.
	Medium - where the affected environment is altered but natural, and/or cultural and social functions and processes continue albeit in a modified way, and valued, important, sensitive or vulnerable systems or communities are moderately affected.
	High - where natural and/or cultural or social functions and processes are altered to the extent that they will temporarily or permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected. The changes to the natural and/or cultural / social- economic processes and functions are drastic and commonly irreversible.
Probability (The likelihood of the impact occurring)	**None** – where the impact will not materialize
	Low – where the possibility of the Impact materializing is very low (<20%)
	Medium – where there is a good possibility (30%-60% chance) that the impact will occur.
	High– where it is most likely (60% -100% chance) that the impact will occur.

2.4.4 Cumulative Impacts

Cumulative effects manifest when socio-environmental conditions are already or will be affected by past or reasonably probable future development or activities. The ESIA has identified current, past and probable future similar activities that may compound socio-environmental conditions in the project area.

2.5 Environmental and Social Management and Monitoring Plan

An Environmental and Social Management Plan (ESMP) was developed to guide implementation of the proposed mitigation measures in an effective manner to ensure sustainability of the project development throughout its life.

3. PROJECT DESCRIPTION

3.1 Project developer

Project developer	Ministry of Lands, Housing and Urban Development (MLHUD) Parliamentary Avenue, Kampala- Uganda.
Contact person	Permanent Secretary-MLHUD
Project Funder	World Bank IDA

3.2 Location and Nature of the project

The road sections to be tarmacked are located in Buliisa Town Council and Butiaba Town Council, traversing several cells / villages (Table 3-1 and Table 3-2).

Table 3-1: Project roads location

ROAD NAME	CODE	LENGTH (KM)	GPS COORDINATES (UTM 36N)		REFERENCE FIGURE	SUB COUNTY	VILLAGES /CELLS
			START	END			
Roads in Buliisa Town Council							
Gongo	C1	1.29	E 323689 N 234519	E 324152 N 234271	Figure 3-3	Buliisa Town Council	Nyapea Kitahura Kizongi Kityanga Civic Kizikya
Commercial	C2	0.88	Segment 1 E 323181 N 234431 Segment 2 E 323312 N 234477 Segment 3 E 323599 N 234262	E 323704 N 234381 E 323821 N 234377 E 323828 N 234268	Figure 3-4		
Muhoojo	C3	1.68	E 323399 N 234152	E 323481 N 233268	Figure 3-5		
Speke	C4	0.43	E 323926 N 232415	E 324336 N 232500	Figure 3-6		

ROAD NAME	CODE	LENGTH (KM)	GPS COORDINATES (UTM 36N)		REFERENCE FIGURE	SUB COUNTY	VILLAGES /CELLS
			START	END			
Roads in Buliisa Town Council							
White	C5	0.82	E 324234 N 233290	E 324336 N 232500	Figure 3-7		
Galende	C6	0.63	E 323818 N 233251	E 324431 N 233320	Figure 3-8		
Mukitale	C8	0.74	E 324629 N 233997	E 324431 N 233320	Figure 3-9		
Kalolo	C9	0.50	E 323273 N 234185	E 322846 N 234357	Figure 3-10		
Kyamurwa	C10	0.47	E 323577 N 233946	E 323882 N 234038	Figure 3-11		
Mutiti	C11	0.32	E 323799 N 233219	E 323481 N 233268	Figure 3-12		
Rift Valley	C12	0.23	E 323951 N 232171	E 323748 N 232132	Figure 3-13		
Siira	C13	0.54	E 323777 N 232373	E 323693 N 232898	Figure 3-14		
Baker	C14	0.50	E 323910 N 232388	E 323748 N 232132	Figure 3-15		
Wangalia	C15	0.60	E 323861 N 234236	E 323933 N 233701	Figure 3-16		
Roads in Butiaba Town Council							
Magali	C16	0.75	E 313885 N 201090	E 313186 N 200984		Butiaba Town Council	Kekeya Piida A
Access to the Marine & Butiaba Fish	C17	0.22	E 316283 N 200577	E 316322 N 200730	Figure 3-17		Booma
Part of Sseseko - Kawaibanda	C18	0.8	E 315008 N 200690	E 314530 N 200185	Figure 3-18		Kekeya
Access to Health Centre	C19	0.23	E 314573 N 200233	E 314687 N 200045	Figure 3-19		Kekeya Kaweibanda

BULIISA TOWN COUNCIL ROADS		
Road Name	Label	Length (m)
Baker Rd	14	437
Commercial Road Seg1	2	119
Commercial Road Seg4	2	146
Commercial Road Seg2	2	665
Galende Rd	6	626
Gongo Rd.	1	1258
Kyamurwa Rd.	10	506
Muhoojo Rd Seg2	3	1042
Muhoojo Rd Seg1	3	516
Rift Valley Rd	12	227
Siira rd	13	538
Speke Rd	4	420
Wangaliya Rd	15	545
Mukitale Rd	8	715
White Rd	5	801
Commercial Road Seg3	2	110
Mutiti Rd	11	280
Kalolo Road	9	512

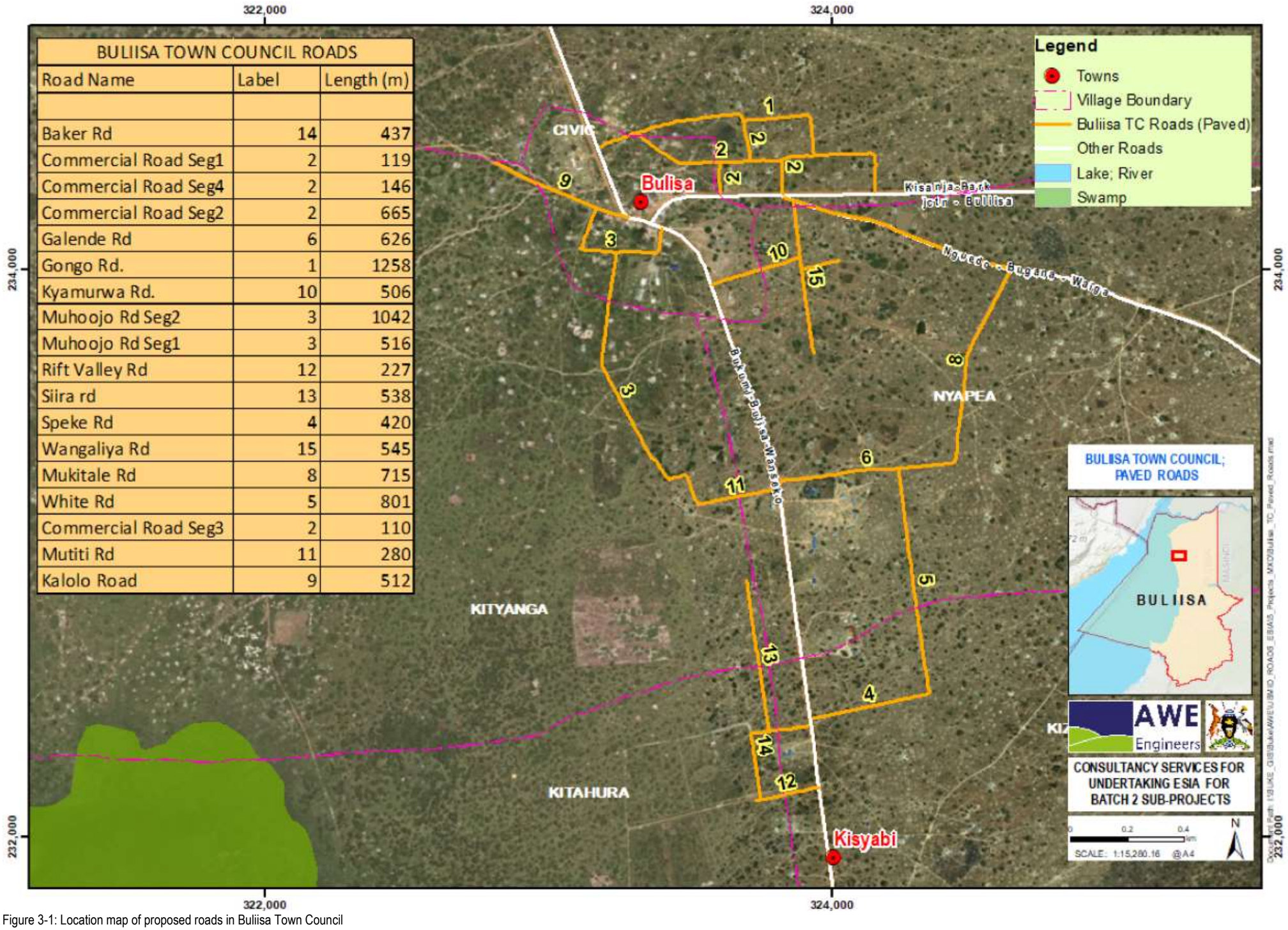
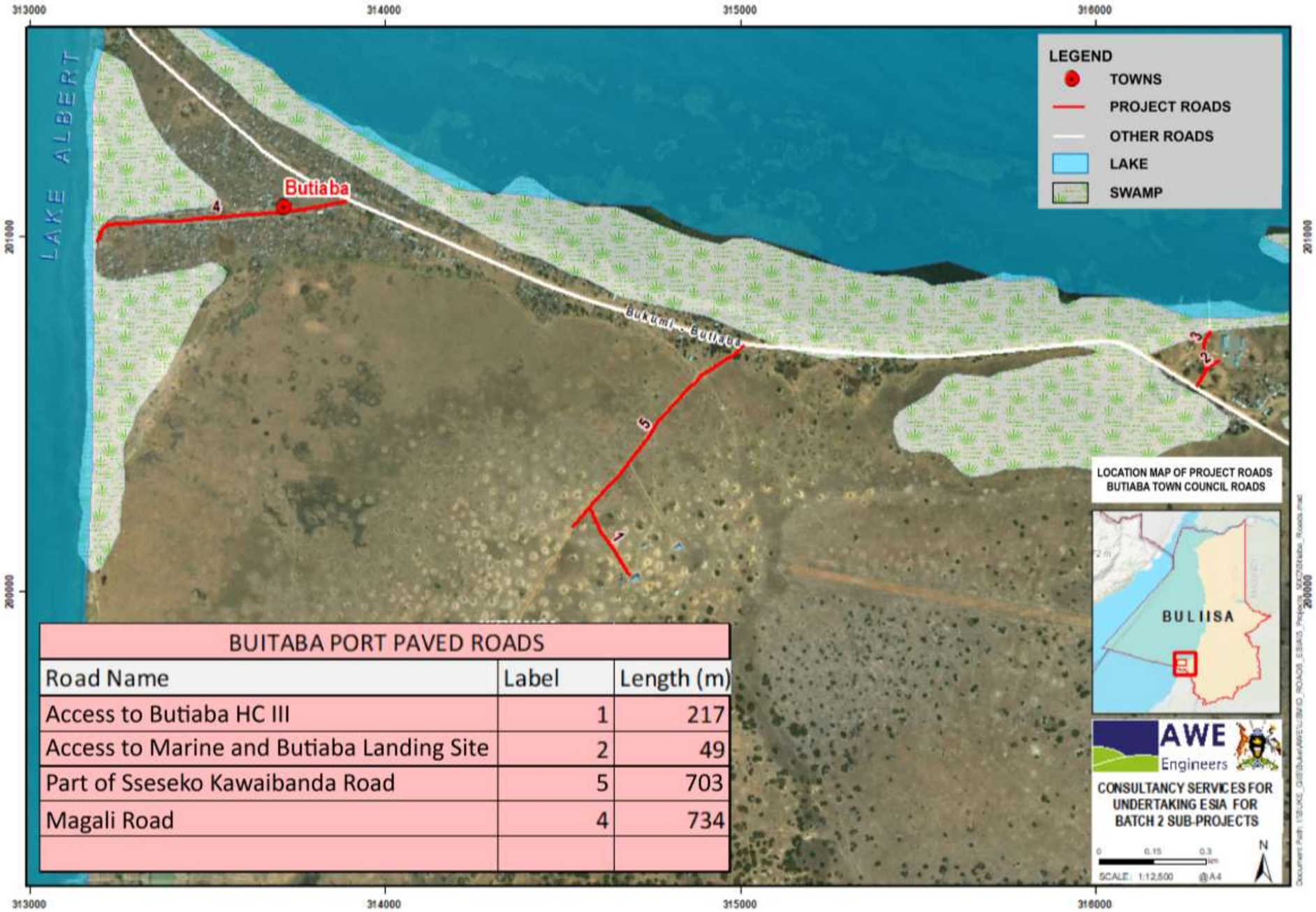


Figure 3-1: Location map of proposed roads in Buliisa Town Council



BUITABA PORT PAVED ROADS		
Road Name	Label	Length (m)
Access to Butiaba HC III	1	217
Access to Marine and Butiaba Landing Site	2	49
Part of Sseseko Kawaibanda Road	5	703
Magali Road	4	734

Figure 3-2: Location map of proposed roads in Butiaba Town Council

Table 3-2: Photographs of key features along the project roads

Figure 3-3: Gongo (C1)			
	Current carriageway	CICO Campsite	Milling machine
Figure 3-4: Commercial (C2)			
	Current carriageway	Central market	
Figure 3-5: Muhoojo (C3)			
	Current carriageway	Night clubs	Water reservoir tank

Figure 3-6: Speke (C4)			
	Current carriageway	Grazing area	
Figure 3-7: White (C5)			
	Current carriageway	Seasonal water pond	Surrounding landcover
Figure 3-8: Galende (C6)			
	Current carriageway	Buliisa town catholic church	Section of the road

Figure 3-9: Mukitale (C8)			
	Current carriageway	Grazing area	
Figure 3-10: Kalolo (C9)			
	Current carriageway	Buliisa town mosque	Commercial structures along the road
Figure 3-11: Kyamurwa (C10)			
	Current carriageway		

Figure 3-12: Mutiti (C11)			
	Current carriageway	Itambiro church	Buliisa police station
Figure 3-13: Rift Valley (C12)			
	Current carriageway	Buliisa police station accommodation units	Section of the road
Figure 3-14: Siira (C13)			
	Current carriageway	House within the RoW	Commercial structures along the road

Figure 3-15: Baker (C14)			
	Current carriageway	Grazing area	
Figure 3-16: Wangalia (C15)			
	Current carriageway	Grazing area	
Figure 3-17: Access to Marine & Butiaba fish landing site (C17)			
	Marine offices		

Figure 3-18: Part of Sseseko – Kawaibanda (C18)			
	Kawaibanda landing site	Community water point	Access to Butiaba town council offices
Figure 3-19: Access to Health centre (C19)			
	Current carriageway	Surrounding vegetation	

3.3 Road Geometric parameters

3.3.1 Road classification

As specified in the Uganda Road Design Manual of January 2010 (RDM 2010) and the Technical manuals for District Road Works (MoWT DRW Vol 4, Manual A, 2004) the National Road Network of Uganda is divided into seven classes – four classes for paved roads shown in **Table 3-3**. The Town Council roads have been classified as Design Class II Paved.

Table 3-3: Functional Road Classification System for Paved Road Network

Design Class	Capacity AADT x1000	Roadway width (m)	Carriageway Width (m)	Shoulder Width (m)	Design Speed (km/h)			
					Flat	Rolling	Mount	Urban/ Peri-Urban
Ia Paved	12 - 20	20.80-24.60	14.6	2.5	120	100	80	50
Ib Paved	6 - 10	11.0	7.0	2	110	100	80	50
II Paved	4 - 8	10.0	6.0	2	90	70	60	50
III Paved	2 – 6	8.6	5.6	1.5	80	70	50	50

3.3.2 Geometric and functional description for project roads

Table 3-4 provides the geometric and functional characteristics arising out of road classification chosen and the existing right of way.

Table 3-4: Geometric and functional description of project roads

SN	Road Name	Length (km)	Existing Carriage way	Required ROW (I)	Road Class	Standard width of Carriageway to be constructed / Class (II)	Min. width available for shoulder, walkway and side drain on either side of CL [(I)-(II)]/2
Buliisa TC			m	m		m	m
(1)	Gongo	1.29	7.0	16	II	6	5
(2)	Commercial	0.88	8.0	16	II	6	5
(3)	Muhoojo	1.68	3.0	16	II	6	5
(4)	Speke	0.4	5.1	16	II	6	5
(5)	White	0.8	5.4	16	II	6	5
(6)	Galende	0.6	6.6	16	II	6	5
(7)	Mukitale	0.7	4.7	16	II	6	5
(8)	Kalolo	0.5	4.5	16	II	6	5
(9)	Kyamurwa	0.45	3.4	16	II	6	5
(10)	Mutiti	0.32	3.5	16	II	6	5
(11)	Rift Valley	0.2	5.0	16	II	6	5
(12)	Siira	0.5	1.0	16	II	6	5
(13)	Baker	0.45	4.0	16	II	6	5
(14)	Wangalia	0.55	8.5	16	II	6	5
Butiaba Port							
(15)	Magali	0.75	10	16	II	6	2.5-4.5
(16)	Access to Butiaba Fish Landing Site	0.22	8	16	II	6	3
(17)	Part of Sseseko – Kawaibanda	0.79	3.54	16	II	6	3
(18)	Access to Health Centre	0.24	2.5	16	II	6	3

3.3.3 Design Vehicle

Design vehicles are the selected motor vehicles with the weight, dimensions, and operating characteristics used to establish highway design controls for accommodating vehicles of the designated classes. Vehicle characteristics and dimension affecting design includes power to weight ratio, minimum turning radius and travel path during a turn, and vehicle height and width. For the Town Roads, the selected design vehicle is DV4 (Semi-trailer combination large) with physical characteristics shown in the Table 3-5 below.

Table 3-5: Dimensions of design vehicle

Design Vehicle	Dimensions (m)			Overhang (m)		Wheel base (m)	Min. design turning radius (m)	Min. inside Radius(m)
	Height	Width	Length	Front	Rear			
Semitrailer combination large (DV4)	4.1	2.6	16.7	0.9	0.6	6.1 & 9.1	13.7	5.8

3.3.4 Horizontal Alignment

The project roads are mostly straight sections with occasional wide radius curves. Sharp 90 degrees bends are also common on roads such as Baker, Gongo, Muhoojo and Commercial roads. However, these bends have been designed as T-junction to avoid additional land take by forcing sub-standard circular curves. Table 3-6 shows the minimum curve radii achieved on the roads in Buliisa TC and Butiaba as compared to the recommended 100m radius for 50km/h in urban setting. Apart from Commercial, Muhoojo and Magali, all roads met the minimum radius requirements because the roads are mostly straight. However, the bends in these roads have been designed as T-junction to avoid additional land take. Considerations have been made to provide for curve widening at the sub-standard curves to alleviate the deficiency.

Table 3-6: Minimum curve radius achieved on Buliisa and Butiaba roads

Road Name	Minimum Curve radius (m)	Location	Remarks
Baker Road 1	None		Straight alignment
Baker Road 2	None		Straight alignment
Bugana Road	277	0+860	
Commercial Road 1	None		Straight alignment
Commercial Road 2	50	0+080, 0+120	
Commercial Road 3	None		Straight alignment
Commercial road 4	193	0+020	
Galende Road	1041	0+245 – 0+362	
Gongo Road 1	560		
Gongo Road 2	None		Straight alignment
Kalolo Road	183	1+400	
Kyamurwa Road 1	None		Straight alignment
Kyamurwa Road 2	None		Straight alignment
Muhoojo Road 1-3	50	0+150	
Muhoojo Road 4	66	0+400	
Mukitale Road	1088	0+260	
Mutiti Road	None		Straight alignment

3.3.5 Vertical Alignment

Buliisa and Butiaba roads lie in very flat terrain which presents a challenge in achieving minimum gradients to enable flow in longitudinal drains. These drains are normally designed to have invert slopes parallel to the slope of the road.

The design of vertical alignment considered;

i. Raising all roads on average 0.5m above existing ground level to minimize possibility of flooding
ii. providing enough cover to drainage structures such as culverts crossing the road
iii. Providing suitable access to roadside property in a way that does not inconvenience users accessing shops and other properties, e.g. having roads that are too high or low compared to veranda level of shops or buildings.
iv. Provide the minimum slope of 0.5% or absolute 0.3% to enable flow in longitudinal drainage channels such as side drains and gutters

3.3.6 Overall Cut and Fill Interventions on all Project Roads

Along the road alignments there will be areas that will require cut/fill. The overall quantities for each road were computed during design calculations and included in the Bill of quantities. Table 3-7 provides a summary of cut while
Table **3-8** gives a summary for fill volume. Since Buliisa soils are mainly sandy and the terrain is mostly flat, most of the project roads have been designed to be in fill and any cut encountered is likely to be unusable as fill. For this reason, cutting has been designed to a bare minimum.

Table 3-7: Total volume of cut material for Tarmac Roads

Road name	**Estimated Cut (m^3)**
Magali Road	4,982
Access to the Marine & Butiaba Fish Landing Site	1,307
Part of Sseseko – Kawaibanda	1,293
Access to Health Centre	273
Total for Butiaba Tarmac Roads	7855
Gongo	384
Commercial	151
Muhoojo	217
Speke	136
White	-
Galende	569
Mukitale	187
Kalolo	40
Kyamurwa	516
Mutiti	105
Rift Valley	18
Siira	829
Baker	100
Wangalia	1,082
Total for Buliisa Tarmac Roads	**4,623.00**

Table 3-8: Fill required on Batch 2 roads in Buliisa TC and Butiaba Port

Road name	Estimated Fill (m^3)
Magali Road	336
Access to the Marine & Butiaba Fish Landing Site	23
Sseseko – Kawaibanda & Access to Health Centre	3365
Total for Butiaba Tarmac Roads	3,724
Gongo	8,791
Commercial	12,765
Muhoojo	21,223
Speke	4,354
White	11,595
Galende	2,317
Mukitale	5998
Kalolo	5,719
Kyamurwa	2,136
Mutiti	1,818
Rift Valley	1,771
Siira	1,635
Baker	4,041
Wangalia	3755
Total for Buliisa Tarmac Roads	**87,918.00**

Culvert designs

Hydrological analysis was carried out by the design team for each of the stream/runoff crossings and using design discharges culvert design was carried out.

The major criteria in sizing of the culverts were as follows

i. The culvert slope was set to the drainage channel slope to minimise flow disruption. However, the minimum culvert slope was set to 0.5% to ensure self-cleaning capacity. The maximum slope was set to 10% to avoid need for anchoring.
ii. To ensure smooth flow through the culverts, the maximum ratio of headwater depth to culvert diameter was set to 1.5. However, care was made to ensure that the maximum upstream water levels are always below the road sub-grade level.
iii. The minimum cover over the culvert was set to 500 mm to ensure that the whole culvert is below the road layers. However, a recommendation for encasing the culvert was made for all culverts with a cover less than 750 mm.
iv. Culvert entrances and exits were provided with vertical headwalls and wing walls. For pipe culverts, the wing wall flare angle is 30° while for box culverts, the angle is 45°. In areas with cuts upstream of the culvert inlets, drop inlet structures were proposed and the wing walls shall not be included.
v. Downstream channels were proposed for cases where culvert outlet invert is less than the ground level.

Results of culvert sizes drainage catchments resulting in pick discharges presented in **Figure 3-20**.

Road Name	Chainage (m)	Serial No	Inlet Location	Area drained (km2)	Design flow (m3/s)	Culvert shape	Diameter	No. of barrels	Culvert design capacity (m3/s)	Culvert Maximum flow (m3/s)
1. Gongo Road Seg 1	0+060	GGO1_1	Left	0.08	0.2	Pipe culvert(s)	600	1	0.65	0.92
	0+185	GGO1_2	Left	0.52	1.1	Pipe culvert(s)	900	1	1.50	2.00
2. Commecial Rd Seg 1	0+050	COM1-01	Right	0.28	0.7	Pipe culvert(s)	900	1	1.50	2.00
3. Commecial Rd Seg 2	0+250	COM2-01	Left	0.41	0.9	Pipe culvert(s)	900	1	1.50	2.00
4. Gongo Rd Seg 3	0+920	GGO3-01	Left	0.02	0.1	Pipe culvert(s)	600	1	0.65	0.92
5. Gongo Rg Seg 3	1+120	GGO3-02	Left	0.24	0.6	Pipe culvert(s)	600	1	0.65	0.92
6. Muhoojo Rd Segs 1-3	0+140	MUH13-01	Left	0.06	0.2	Pipe culvert(s)	600	1	0.65	0.92
7. Muhoojo Rd Seg 4	0+380	MUH4-01	Right	0.22	0.6	Pipe culvert(s)	600	1	0.65	0.92
	0+710	MUH4-02	Right	0.21	0.6	Pipe culvert(s)	600	1	0.65	0.92
8. Mutiti	0+120	MUT-01	Right	0.04	0.1	Pipe culvert(s)	600	1	0.65	0.92
	0+400	MUT-02	Left	0.34	0.8	Pipe culvert(s)	900	1	1.50	2.00
9. Wangalia Road	0+370	WAN-01	Left	0.06	0.2	Pipe culvert(s)	600	1	0.65	0.92
	0+530	WAN-02	Left	0.06	0.2	Pipe culvert(s)	600	1	0.65	0.92
10. Mukitale	0+120	MUK-01	Right	0.07	0.2	Pipe culvert(s)	600	1	0.65	0.92
	0+370	MUK-02	Right	0.05	0.2	Pipe culvert(s)	600	1	0.65	0.92
11. Galende	0+420	GLD-01	Right	0.04	0.1	Pipe culvert(s)	600	1	0.65	0.92
	0+115	GLD-02	Right	0.37	0.9	Pipe culvert(s)	900	1	1.50	2.00
12. White Road	0+460	WHT-01	Right	4.10	4.8	Pipe culvert(s)	1200	2	6.40	8.00
	0+770	WHT-02	Right	0.03	0.1	Pipe culvert(s)	600	1	0.65	0.92
13. Baker 2	0+130	BKR2-01	Right	0.55	1.2	Pipe culvert(s)	900	1	1.50	2.00
14. Speke	0+160	SPK-01	Right	4.80	5.3	Pipe culvert(s)	1200	2	6.40	8.00
15. Baker 1	0+140	BKR1-01	Right	0.58	1.2	Pipe culvert(s)	900	1	1.50	2.00
16. Rift Valley road	0+025	RVR-01	Right	4.87	5.4	Pipe culvert(s)	1200	2	6.40	8.00
17. Marine Access	0+012	BUT-01	Right	0.05	0.2	Pipe culvert(s)	600	1	0.65	0.92
18. Sseseko	0+220	BUT-02	Left	29.56	14.2	Pipe culvert(s)	1200	5	16.00	20.00
	0+820	BUT-03	Left	0.30	0.7	Pipe culvert(s)	600	2	1.30	1.84
19. Magali_Rd	0+080	BUT-04	Left	0.03	0.1	Pipe culvert(s)	600	1	0.65	0.92
	0+325	BUT-05	Left	0.07	0.2	Pipe culvert(s)	600	1	0.65	0.92
	0+500	BUT-06	Left	0.03	0.1	Pipe culvert(s)	600	1	0.65	0.92

Figure 3-20: Design flows and check floods for Buliisa and Butiaba Town Road crossings

3.3.7 Design of Ancillary Features

i. Road sign and marking

Traffic signs and road marking will be provided in accordance with the MoWT Traffic Sign Manual, Volume 1 and volume 2. Also, considerations such as filling the steel pole with concrete to discourage vandalism will be explored.

ii. Road Lighting

Street lighting has been proposed for all project roads to improve security at night as well as increase the working hours of the business community. The street lighting proposed comprises LED lanterns with integral Solar PV panel and Lithium Ion Battery all included in one package. The design has selected LED because of its high efficiency in terms of light output (lumens) per watt of input energy and a high life in excess of 30,000 hours.

3.3.8 Humps and Rumple strips

Traffic calming measures in the form of humps and rubble strips will be provided to control speeds at critical locations along the roads. These will be used together with roads signs to make the road safe for all users. In areas of traffic conflict such as junctions and public areas like markets, hospitals and schools, pedestrian crossings will be provided.

3.4 Material sources

The design and feasibility study team conducted investigations of material sources for quality and quantity and this involved sampling of the following:

- Borrow Areas for Sources of natural granular materials for Gravel wearing course and improved Sub grade;
- Quarry Sites for Sources of hard rock for sand and aggregates.
- Natural sand sources; and
- Water sources

3.4.1 Gravel sources

Potential borrow areas were identified and samples were retrieved in the project areas of Buliisa district. A total of 8 potential Borrow areas were identified as shown in Table 3-9.

Table 3-9: Identified borrow areas location

No.	Name	Road	Location	Offset	Chainage
1	Borrow Area 01	Uribo – Nyamitete	Uribo		
2	Borrow Area 02	Kakoora – Bugana	Kakoora	20 m LHS	
3	Borrow Area 03	Ngwendo - Paraa	Ajigo	900 m	
4	Borrow Area 04	Ngwendo – Avogera	Uduk 1	20 m RHS	3+500 km
5	Borrow Area 05	Ngwendo – Avogera	Uduk 1	50 m RHS	3+600 km
6	Borrow Area 06	Kijanji	Kijangi	10 m RHS	1+500 km
7	Borrow Area 07	Biiso – Kampala B - Tangala	Kampala B		1+300 km
8	Borrow Area 08	Bukumi	Bukumi	20m RHS	

However, the final choice of material source is a responsibility of the construction contractor in consultation with the supervising consultant. The contractor shall then hire a NEMA registered consultant to undertake Environmental Impact Assessment and submit a report to NEMA for approval before any works at the borrow area start. MLHUD will undertake due diligence to supervise the assessment process (review TORs, review ESIAs, RAPs for completeness and accuracy) and monitor implementation of the ESMPs/ RAPs.

In addition, the contractor shall sign agreements with land owners which shall include restoration clauses. The contractor shall also prepare decommissioning plan for the borrow pits for approval by the supervising engineer and the District Environment officer.

3.4.2 Aggregate

A total of six (6 No.) quarries were identified in Buliisa, and Hoima districts. Because the cost of establishing a quarry is rather high, additional investigations were done on sources from established quarries in Kiboga District close to the project area. The particular sources investigated include Kiboga; Itutwe in Buliisa; Marongo, Buhirigi, and Buhuka in Hoima District.

As for the gravel sources, the final choice of aggregate source is a responsibility of the construction contractor in consultation with the supervising consultant. The contractor shall then hire a NEMA registered consultant to undertake Environmental Impact Assessment and submit a report to NEMA for approval before any quarry works start. MLHUD will undertake due diligence to supervise the assessment process (review TORs, review ESIAs, RAPs for completeness and accuracy) and monitor implementation of the ESMPs/ RAPs.

For existing quarries, the Construction Contractor will be required to undertake due diligence to establish operational compliance status of these sites before procuring the material.

3.4.3 Sand Quarry

Potential sand sources identified were investigated using Test pits. A total of seven (7 no.) sand quarries were identified and investigated in Biiso, Bugoigo, Butiaba, Karakaba, Ngwedo, Runga, Wanseko in Buliisa districts.

The final choice of material source is a responsibility of the construction contractor, who shall then carry out the necessary tests and obtain approval from the supervising engineer. MLHUD will undertake due diligence to supervise the assessment process (review TORs, review ESIAs, RAPs for completeness and accuracy) and monitor implementation of the ESMPs/ RAPs.

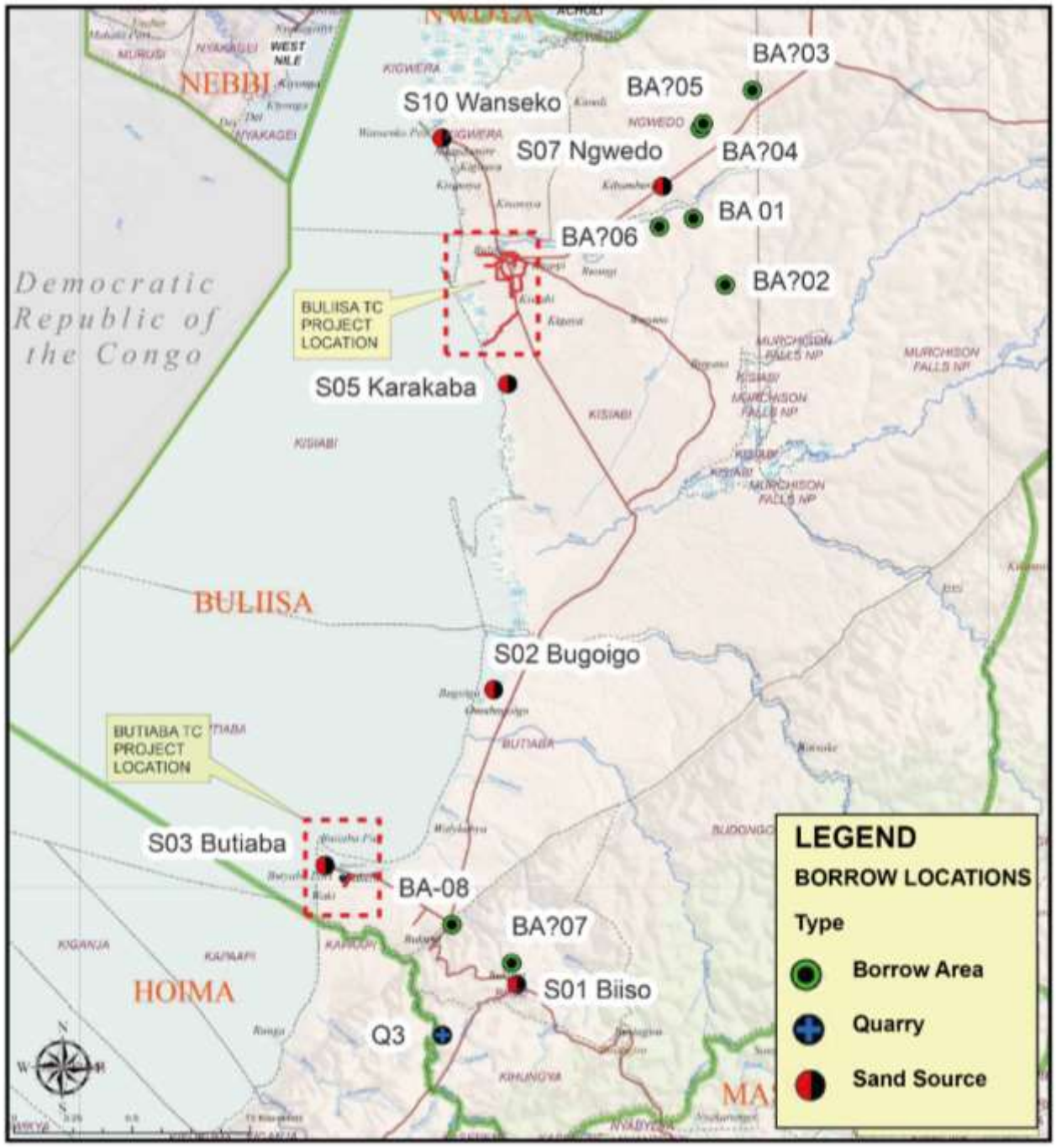


Figure 3-21: Approximate Location of Quarry sites and Borrow areas within the project roads

3.5 Project Activities

3.5.1 Pre - Construction Stage

A. Auxillary facilities

The area of influence for the proposed road project generally follows the existing road alignment. The exceptions are auxiliary sites (temporary construction camps, spoil areas and access roads). Both the proposed road project area as well as auxiliary sites affect the Environment and socio-economic structure of the greater area and are addressed in this report.

Sites to be acquired on lease by the contractor includes:

i. Temporary construction camps and equipment yard

Upgrading of the proposed roads will require a sizeable workforce comprising of expatriates and the locals. Due to the anticipated large number of workers, the contractor will need to construct a Worker's campsite (s) which will be a base for all operations. The location of the project camp will be determined by the awarded contractor in consultation with the local authority and approved by MLHUD after meeting the necessary NEMA requirements.

In addition, vast equipment and machinery will be deployed for the upgrading of the project roads. Their storage, if not handled properly, could cause detrimental effects on the environment for example soil contamination through oil spills. The contractor shall therefore identify suitable sites, in consultation with the local authority, for parking of this equipment and take all necessary precaution to ensure minimal or no impacts on the environment. The contractor will be obliged to ensure that after construction activities, this site .is adequately restored.

Construction of the camp will involve;

- Road transportation of personnel, equipment and materials to project site
- Site clearance for camp and materials yards construction
- Creating access roads and Parking areas within the camps and materials yards
- Install water pump to provide water for works and Camp use
- Construction of domestic waste and sewer waste facilities for the camps
- Create temporary access roads to the campsite
- Construct foundations and install temporary accommodation facilities

Estimated land requirement for the camp and equipment yard

The contractor's camp and equipment yard are estimated to cover an area of approximately 3 acres but this will be dependent on the number of accommodation units for the proposed number of workers that will reside within. In addition, there will be other workers carrying out road construction activities but will not be residing in the camp. This category of workers will comprise mainly of the local persons recruited to work on the roads and within the camp and equipment yard. This type of workforce will commute from either their homes within or from rental places obtained within town.

The facilities within the Contractor's Camp may include;

- Accommodation units
- Office Units
- Mechanical workshop area,
- Sanitary facilities
- Waste collection points
- Workers' rest house
- Engineer's and Contractor's laboratories
- Kitchen facility
- Site clinic and
- Generator House, among others

The contractor will identify a suitable site in consultation with the local authority and conduct a separate Environmental and social assessment for submission and subsequent approval by NEMA. MLHUD will

undertake due diligence to supervise the assessment process (review TORs, review ESIAs, for completeness and accuracy) and monitor implementation of the ESMPs.

Site selection;

Among other factors, the contractor should consider the following when selecting a site for construction of camp and equipment yard;

- Should not be located in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on high or steep ground or in areas of high scenic value, and shall not be located less than 1km from such areas.

- Should not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.

- Should not be located in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.

- Should be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.

- Should have clearly demarcated and marked boundaries to minimize vegetation clearing
- The contractor shall prepare a site lay out plan showing the exact location of each structure and will submit it to the supervising consultant, town council and District planners for approval.

Community consultations revealed that land for setting up the camp and equipment yard is available. The contractor is expected to rent land for the construction period after which he will decommission and restore the area. Renting an acre of land within 10 km of Buliisa town was estimated at UGX2,000,000 per acre and UGX 1,000,000 per month in Butiaba.

The contractor shall negotiate with the land owner on payment terms and sign an agreement which should contain restoration clauses.

ii. Land for temporary storage of soil material

During cut and fill operations, large quantities of overburden are anticipated. This has to be stockpiled in an environmentally friendly way to avoid contamination of water ways and impacts on the aesthetics of the project area. The contractor shall therefore identify suitable sites, in consultation with the local authority, for temporary storage of this spoil material which will later be used in restoration of disturbed area e.g borrow pits.

iii. Land for stone crusher and bitumen container storage.

Since the roads are to be upgraded use of bitumen will form part of the construction phase activities. Poor storage of bitumen can cause detrimental effects on the environment for example contamination of water courses and soil through leakages. The contractor shall therefore identify suitable sites, in consultation with the local authority, for storage of bitumen and take all necessary precaution to ensure minimal or no impacts on the environment and ensure site restoration.

B. Human resource

Upgrading of the roads will require a sizeable workforce of both skilled and unskilled labour. The quality and quantity of human resource will be determined by the contractor. Raised as a key issue during all stakeholder consultations, recommendations have been made in this report to give priority to the local communities during recruitment of especially the unskilled and semi-skilled labour. Upgrading of these roads is expected to employ approximately 100 people during pre-construction, construction and operation phases.

3.5.2 Construction Phase

This will comprise upgrading the existing roadss, entailing all activities involved in the improvement of the carriageway and associated drainage as well as safety infrastructure along the existing alignment.

A. Road construction activities

Planned construction activities include:

i. Detailed Surveys

Activities will include;

- Carry out topographic measurements with levelling and GIS instruments
- Carry out geotechnical Investigations sampling by undertaking pit excavations and drilling boreholes, driving augers underground and trial blasting.
- Carry out geophysical investigations with falling hammer sound source.

ii. Earthworks

Activities will include;

- Vegetation clearing
- Removal of top-soil and sub-soil by mechanical stripping and stock pile at designated locations
- Construction of temporary access roads to work areas
- Mechanical excavation and loading of stripped material
- Transportation by truck of the excavated material to designated stockpile areas
- Storage of top-soil, sub-soil and rock material at approved spoil Areas
- Stone base production at crusher plant for road works
- Compaction of road surface layers with compactor rollers
- Chemical stabilization of road bed surface layers with road lime or cement
- Watering of road subbase and gravel base layers
- Mechanical stabilization of road bed layers with geotextiles, geogrid and stone masonry embankments

iii. Bituminous layers and seals

Activities will include;

- Bitumen heating in storage tanks
- Transportation of bitumen in containerized truck to construction area
- Bitumen spraying on sub-base and base road surfaces
- Stone chippings spreading over bitumen layers
- Stone dust blinding over bitumen layer
- Mechanical broom, compressed Air spray and water jet-wash of road surface
- Work site sampling and Laboratory investigation

iv. Restoration of material borrow sites, stone crushing areas and temporary access roads

Activities will include;

- Spreading of spoil material, soils and topsoil in spoil areas
- Demobilization and restoration of disturbed Camp and Yards location areas
- Rehabilitation of material borrow sites, stone crushing areas and temporary access roads
- Post construction monitoring

B. Construction Equipment

A number of specialised equipment will be required for the road upgrading project. Among these include;

- Wheeled excavator
- Track Loader
- Dump Truck
- Bull Dozer
- Motor grader- complete with scarifier
- Backhoe loader
- Wheeled roller
- Vibrating plate compactor.
- Water tankers
- Concrete mixer
- Generators
- Bitumen distributor

C. Road construction Materials

Road construction will require a number of construction materials in various quantities and of specified quality. These materials will include;

i. Sand for concrete works,
ii. Gravel for filling would be obtained from borrow-pit areas along the project area.
iii. Water for construction and use in workers' camps
iv. Steel for structural work.
v. Crushed rock / aggregate for base and surface bituminous courses and concrete works.
vi. Bitumen for bituminous surface.
vii. Cement for concrete works.

3.5.3 Post Construction phase

a) Decommissioning

Once the construction of the roads is completed, the contractor shall restore all components impacted upon by the construction activities.

Restoration activities shall entail;

- Clearing and cleaning of all sites used for storing road construction materials and temporary camp(s) used for accommodating road construction workers
- Collection and disposal of all waste generated and stored during construction works
- Removal of all temporary structures erected during road construction
- Covering of boulders and stones exposed during construction works

- Re-vegetating of unpaved areas cleared of vegetation such as temporary access roads.
- Backfilling and landscaping of borrow pits with overburden from cut and fill activities
- Boulders and stones exposed during road construction should be covered.

b) Operation and maintenance

This is the phase in which the road upgrading has been completed and mainly involves operation and maintenance activities that are carried out by the respective Town Councils. This phase includes both routine and periodic maintenance works such as cleaning of drainages, patching potholes, repair of road items such as maintenance of street lights. Periodic maintenance activities include re-painting of road markings and re-sealing among others.

3.5.4 Project cost and Implementation Plan

The total implementation cost for all the road links amounts to UGX **43,230,498,863** (Fourty three Billion two hundred and thirty million, four hundred ninety-eight thousand, eight hundred sixty-three shillings) including a provision for management of Environmental, Social, Health, and Safety (ESHS) risks.

During the initial design phase, a total of 18 roads with a total length of 12.07Km were targeted for implementation; however, one road was dropped from the list and thus the mileage reduced to 11.63 Km. The project is expected to be implemented in phases; this is because the currently available funds is not adequate to meet the cost of executing all the works. The first phase of implementation shall handle five (05) roads. The rest of the roads shall be executed once funding is secured.

Table 3-10 Cost of Road Construction

No	Road Name	Location	Distance	Cost
Phase 1 Roads (Current)				
1.	Gongo	Buliisa TC	1.29	4,766,952,430
2.	Commercial	Buliisa TC	0.88	4,036,206,251
3.	Muhoojo	Buliisa TC	1.68	6,757,184,237
4.	Kyamurwa	Buliisa TC	0.47	1,856,490,799
5.	Mutiti	Buliisa TC	0.32	1,048,796,726
6.	Wangalia	Buliisa TC	0.60	2,275,714,135
7.	Speke	Buliisa TC	0.43	1,250,327,947
8.	Kalolo	Buliisa TC	0.50	2,159,380,196
9.	Rift Valley	Buliisa TC	0.23	934,960,308
10.	Baker	Buliisa TC	0.50	1,976,080,757
	Sub-Total		**6.9**	**27,062,093,786**
Other phases (Subsequent)				
1.	White	Buliisa TC	0.82	3,474,084,072
2.	Galende	Buliisa TC	0.63	2,307,434,410
3.	Mukitale	Buliisa TC	0.74	2,876,550,729
4.	Siira	Buliisa TC	0.54	1,991,087,916
5.	Magali	Butiaba TC	0.75	2,552,356,610
6.	Marine Access	Butiaba TC	0.22	910,110,768
7.	Part of Sseseko - Kawaibanda & Access Health Centre (Combined)	Butiaba TC	1.03	2,056,780,573
	Sub-Total		**4.73**	**16,168,405,078**
	GRAND		**11.63**	**43,230,498,864**

4. ENVIRONMENTAL AND SOCIO-ECONOMIC BASELINE

4.1 Physical Environment

4.1.1 Geographical Location

Buliisa Town Council is located in Buliisa District. The District is located between coordinates: 2° 11' 0" N and 31° 24' 0" E in mid-western Uganda and was carved out of Masindi District on 1st July, 2006. It is one of the districts in the western Albertine rift valley where a lot of oil and gas deposits have been discovered. Buliisa District is bordered by Nebbi District to the Northwest, Nwoya District to the Northeast, Masindi District to the East, Hoima District to the South and the Democratic Republic of the Congo, across Lake Albert, to the West.

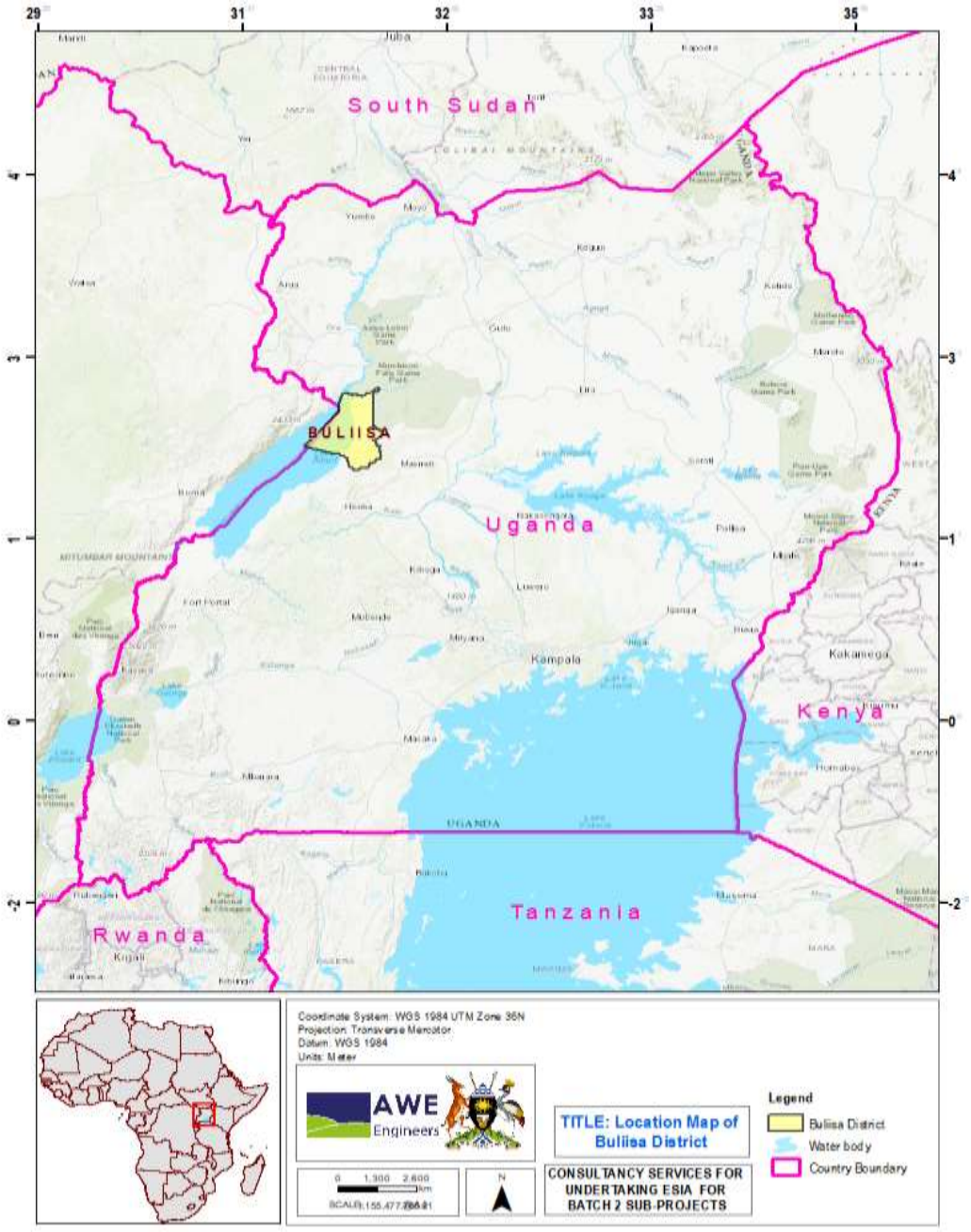


Figure 4-1: Map showing location of Buliisa District

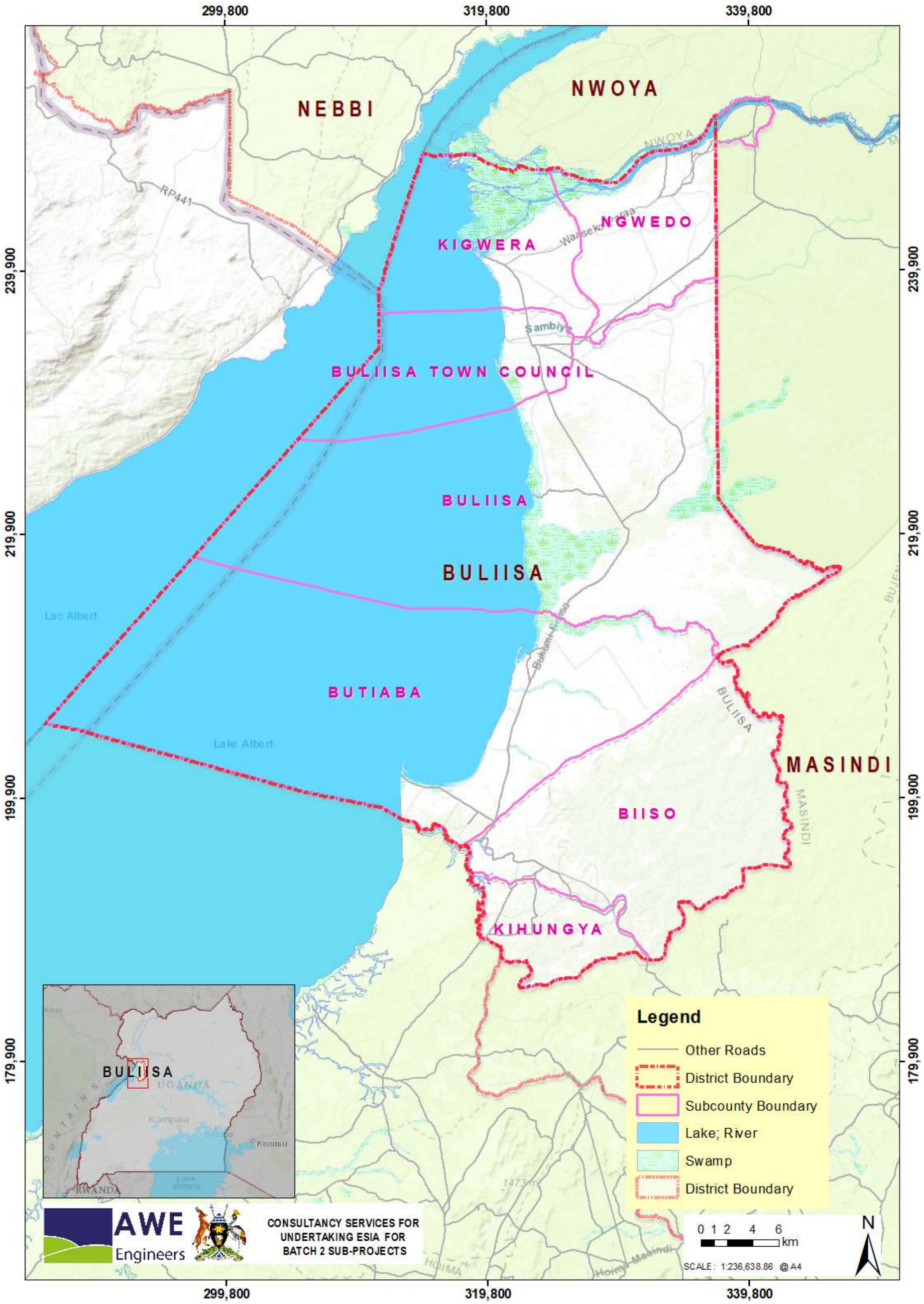


Figure 4-2: Map showing Buliisa District Administrative units

4.1.2 Climate

Buliisa district receives a bimodal rainfall pattern with totals ranging from about 800 mm in the Lake Albert flat rising rapidly further away to the east above the escarpment to between 1250 - 1500 mm per annum before tapering off to 1000 mm in the eastern border areas of the District. The peak periods are between March - May and September to December (Buliisa DEAP, 2017/18-2019/20). Temperatures are moderate averaging between 18°C and 30°C with the hottest spot of Buliisa District lying in the Rift Valley. Monthly minimum temperatures vary between 12°C and 14.6°C and monthly maximum temperatures vary between 30.8°C and 38.5°C. The relative humidity is highest in May and lowest in January, following the temperature pattern.

Figure 4-3: Uganda Rainfall forecast map

Source:https://www.unma.go.ug/index.php/climate/seasonal-forecast/document/39-march-to-may-2020-seasonal-rainfall-outlook-over-uganda/23

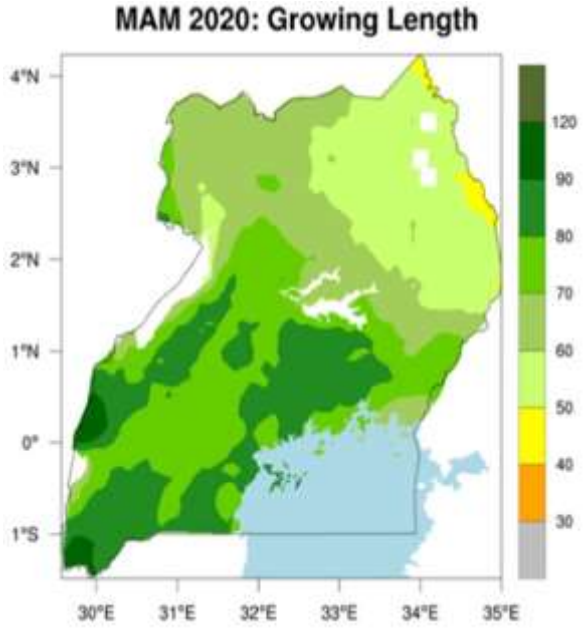


Figure 4-4: Growing length

Wind Rose modelling for Buliisa Town council roads indicates the wind in the project area is moving westward, with average wind speed of 1.3 m/s, characterised as level one – light air (0.3 – 1.5 m/s). In this wind class, a smoke drift but not wind vanes can show the direction of wind. During measurement, it was observed that wind speed in the town council is higher earlier in the day with speeds drastically dropping in the evening hours. This trend can guide in the scheduling of activities such as dumping or disposing to be carried out in the later hours of the day thus reducing the possible spread of emitted pollutants.

For Butiaba Town Council roads, Wind Rose modelling indicates the wind in the project area is moving North westward, with average wind speed of 1.6 m/s, characterised as level two – light breeze (1.6 – 3.3 m/s). In this wind class, wind is felt on the face; leaves rustle; and ordinary vanes can be moved by the wind. During measurement, it was observed that wind speed is consistent throughout the day. This indicates a uniform risk throughout the day as far as dispersion of potential pollutants is concerned.

Table 4-1: Measured wind speeds and direction along the project roads in Buliisa Town Council

Location	Wind measurement	
	Direction (º)	Speed (m/s)

Baker Road	23 NNE	1.7
Commercial Road Segment 1	82 E	0.7
Commercial Road Segment 4	89 E	1.1
Commercial Road Segment 2	107 SSE	1.0
Galende Road	332 NNW	2.1
Gongo Road	292 WNW	0.6
Kyamurwa Road	335 WNW	1.8
	355 N	0.4
Muhoojo Road Segment 2	80 E	1.9
Muhoojo Road Segment 1	17 NNE	1.4
Rift Valley Road	284 WNW	1.4
Siira Road	142 SSE	1.4
	002 N	2.0
Speke Road	312 NW	1.7
Wangalya Road	94 E	1.9
	67 ENE	2.1
Mukitale Road	303 NW	1.1
White Road	302 WNW	0.9
Commercial Road Segment 3	220 SW	0.4
Mutiti Road	334 NNE	1.4
Kalolo Road	24 NE	1.0

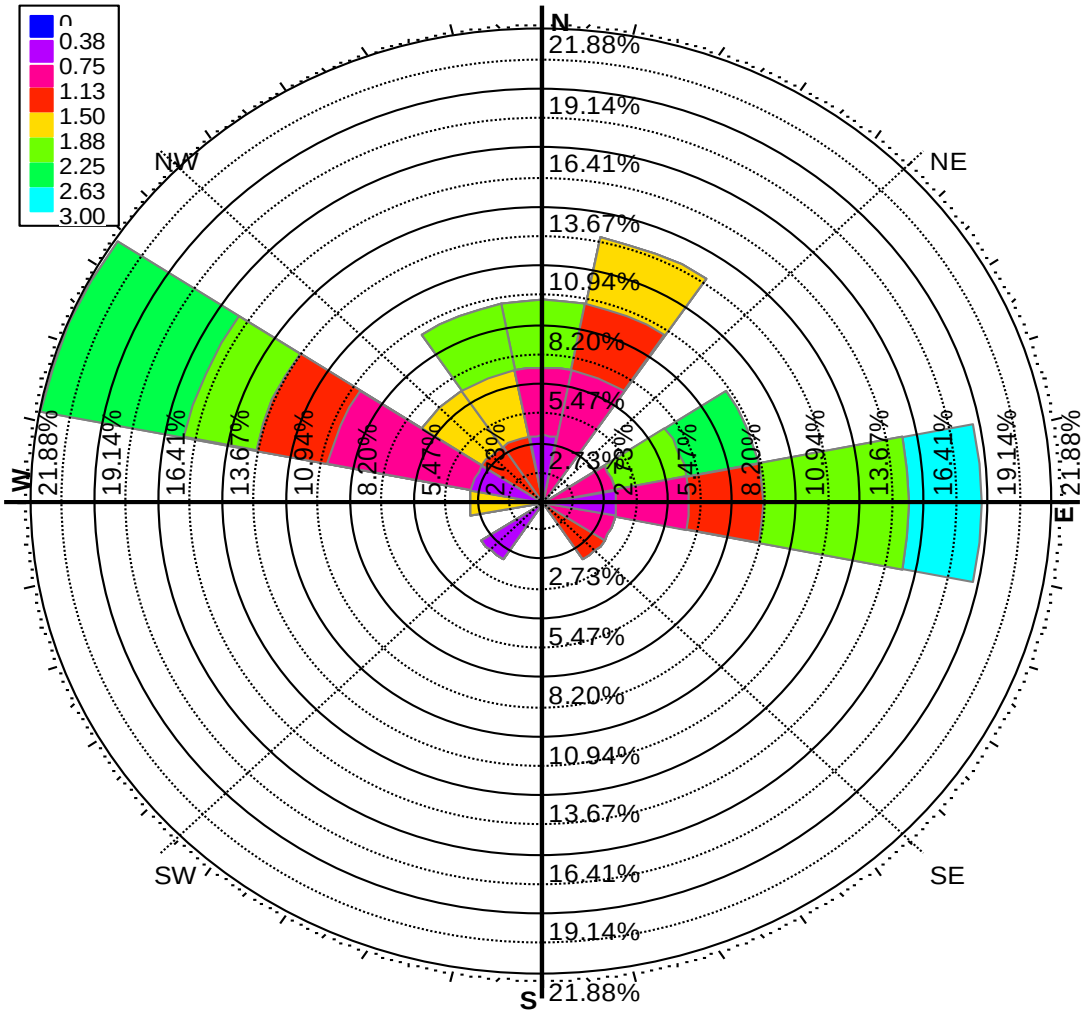


Figure 4-5: Wind rose plot for Buliisa Town Council

Table 4-2: Measured wind speeds and direction along the project roads in Butiaba Town Council

Location	Wind measurement	
	Direction (º)	Speed (m/s)
Butiaba Landing Site Pier	335 WNW	2.4
Access Road to Pier	324 NNW	1.5
Seseko-Kawaibanda Rd Segt 1	335 NNW	1.5
Access to Butiaba HC III	293 WNW	2.0
Seseko-Kawaibanda Rd Segt 2	88 E	0.7
Magali Road	314 NW	1.4
	302 WNW	1.0
	249 WSW	2.5
	91 E	1.4

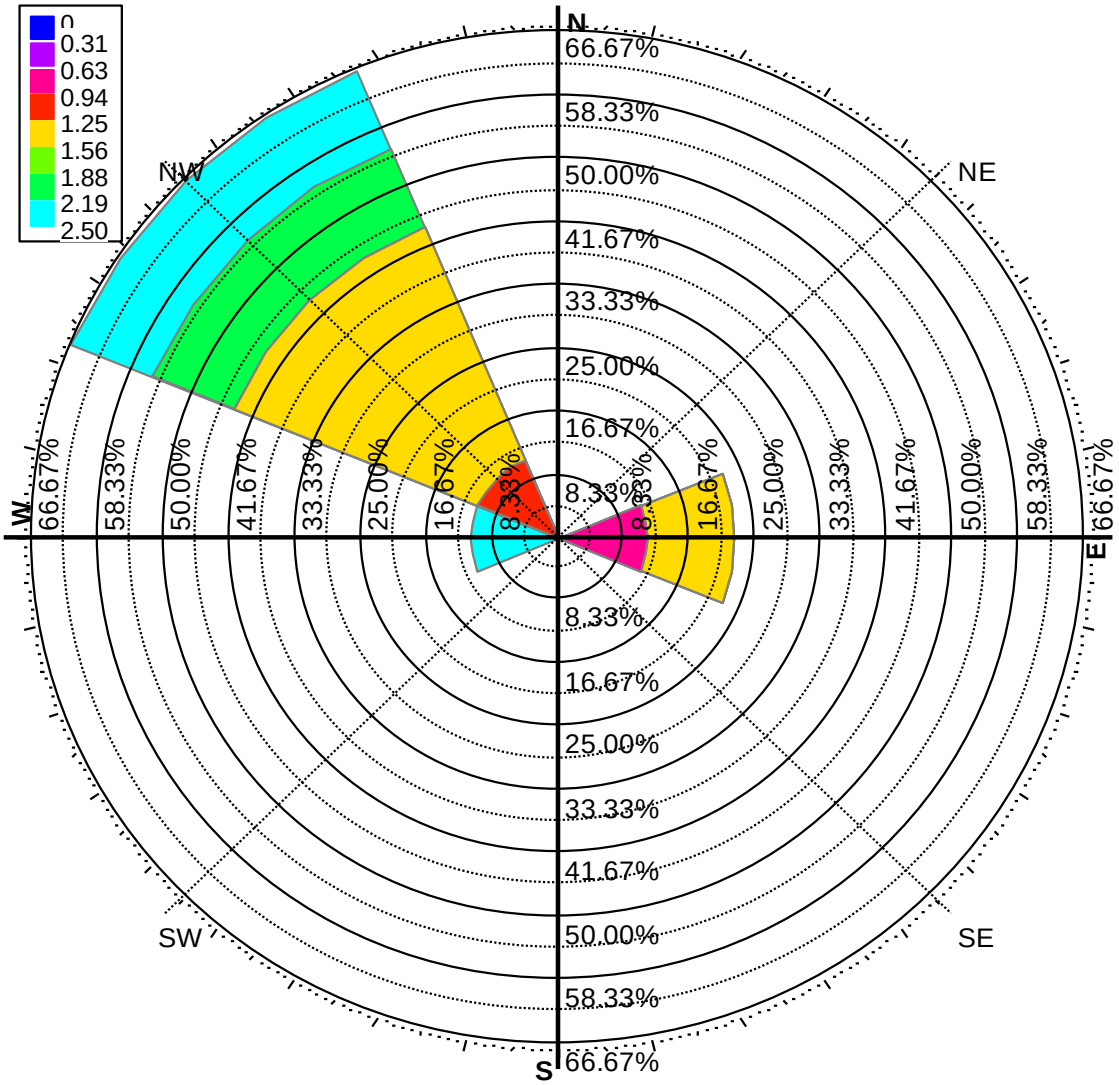


Figure 4-6: Wind rose plot for roads in Butiaba Town Council

Table 4-3: Wind speed equivalents Table

S/N	Beaufort scale number and description	Wind speed equivalent at a standard height above flat ground		Specifications for estimating speed over land
		m/s	Km/hr	
0	Calm	0 – 0.2	< 1	Calm; smoke rises vertically
1	Light air	0.3 – 1.5	1 – 5	Direction of wind shown by smoke-drift but not wind vanes
2	Light breeze	1.6 – 3.3	6 – 11	Wind felt on face; leaves rustle; ordinary vanes moved by wind
3	Gentle breeze	3.4 – 5.4	12 – 19	Leaves and small twigs in constant motion; wind extends light flag
4	Moderate breeze	5.5 – 7.9	20 – 28	Raises dust and loose paper; small branches are moved
5	Fresh breeze	8.0 – 10.7	29 – 38	Small trees begin to sway, crested wavelets form on inland waters

6	Strong breeze	10.8 – 13.8	39 – 49	Large branches in motion; whistling heard; umbrellas used with difficulty.
7	Near gale	13.9 – 17.1	50 – 61	Whole trees in motion; inconvenience felt when walking against the wind
8	Gale	17.2 – 20.7	62 – 74	Breaks twigs off trees; generally impedes progress
9	Strong gale	20.8 – 24.4	75 – 88	Slight structural damage occurs
10	Storm	24.5 – 28.4	89 – 102	Seldom experienced inland; trees uprooted; considerable structural damage occurs
11	Violent Storm	28.5 – 32.6	103 – 117	Very rarely experienced; accompanied by structural damage
12	Hurricane	32.7 and over	118 and over	Widespread damage

Source: The National Meteorological Library and Archive, UK (https://web.archive.org/web/20121002134429/http://www.metoffice.gov.uk/media/pdf/4/4/Fact_Sheet_No._6_-_Beaufort_Scale.pdf)

4.1.3 Topography

Butiaba and Buliisa Town councils in which the project roads are found lay at low altitudes in the central plateau of Uganda with an altitude of about 680- 1,500m above sea level (a.s.l) (UWA, 2013). The lowest point in Uganda is Butiaba fish landing site on Lake Albert, Buliisa District at 682m.a.s.l (UWA, 2013). The terrain of the Buliisa town is flat and the area is devoid of steep slopes or hills and thus is prone to water logging.

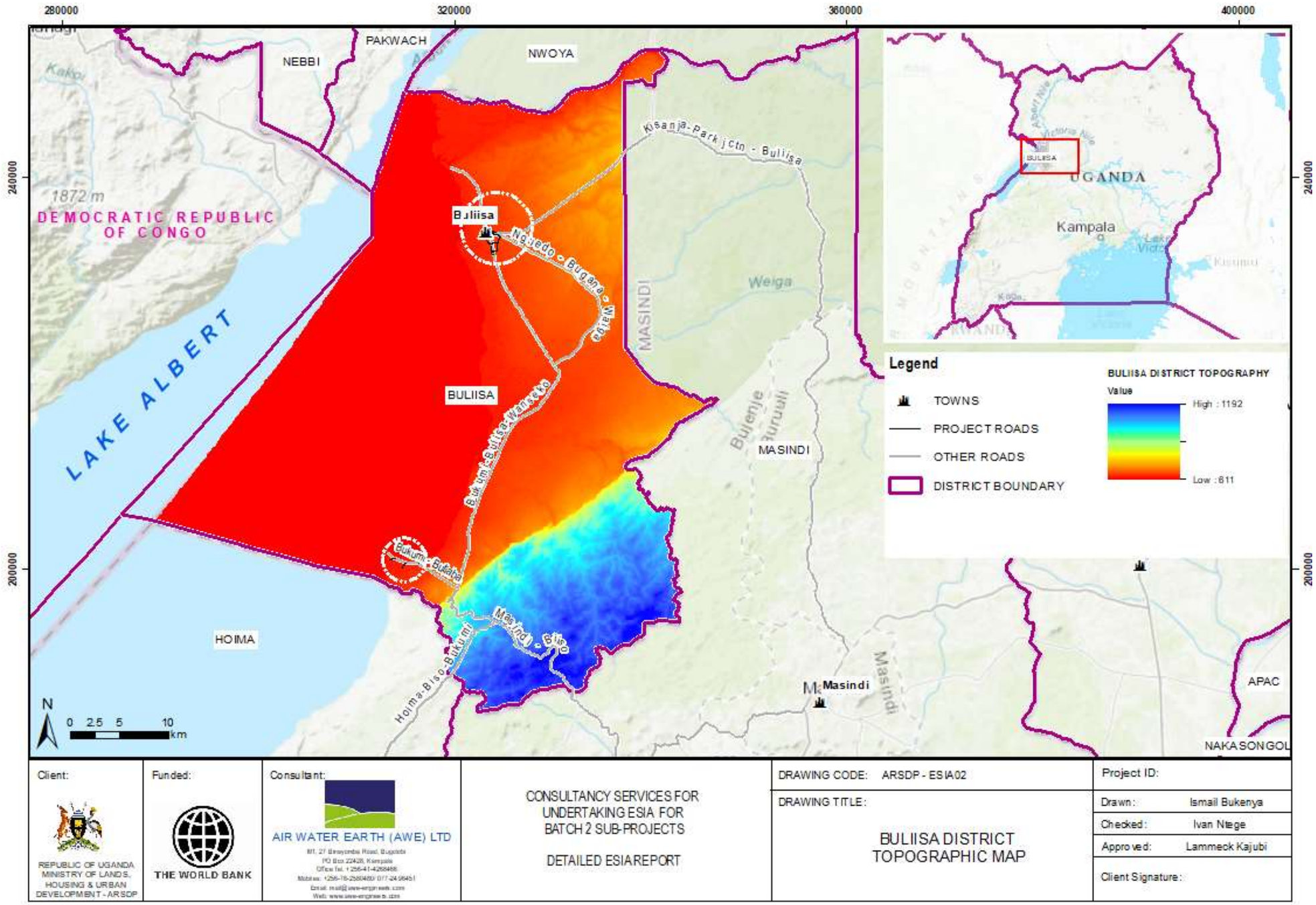


Figure 4-7: Map showing Topography of Buliisa district

4.1.4 Drainage

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

The shoreline of the Nile Delta, a major wetland in Buliisa stretches along the shores of L. Albert and concentrates in bay areas of Kabolwa, Bugoigo and Butiaba forming very important fish breeding sites (Buliisa DEAP 2017/18-20-19/20), connected to by Access to Marine road at Butiaba Fish landing site.

Figure 4-8 and **Figure 4-9** show the location of the project roads in relation to the water bodies in the project area.

Reference for labels on maps

Label on Map	Road Name
Butiaba Town Council	
1	Access to Butiaba Health Center
2	Access to Marine and Butiaba landing site
4	Magali
5	Part of Sseseko – Kawaibanda road
Buliisa Town Council	
14	Baket road
2	Commercial road Segment 1
2	Commercial road Segment 4
2	Commercial road Segment 2
6	Galende Road
1	Gongo road
10	Kyamurwa road
3	Muhoojo road Segment 2
3	Muhoojo road Segment 2
12	Rift valley road
13	Siira road
4	Speke road
15	Wangalia road
8	Mukitale road
5	White road
2	Commercial road
11	Mutiti road
9	Kalolo road

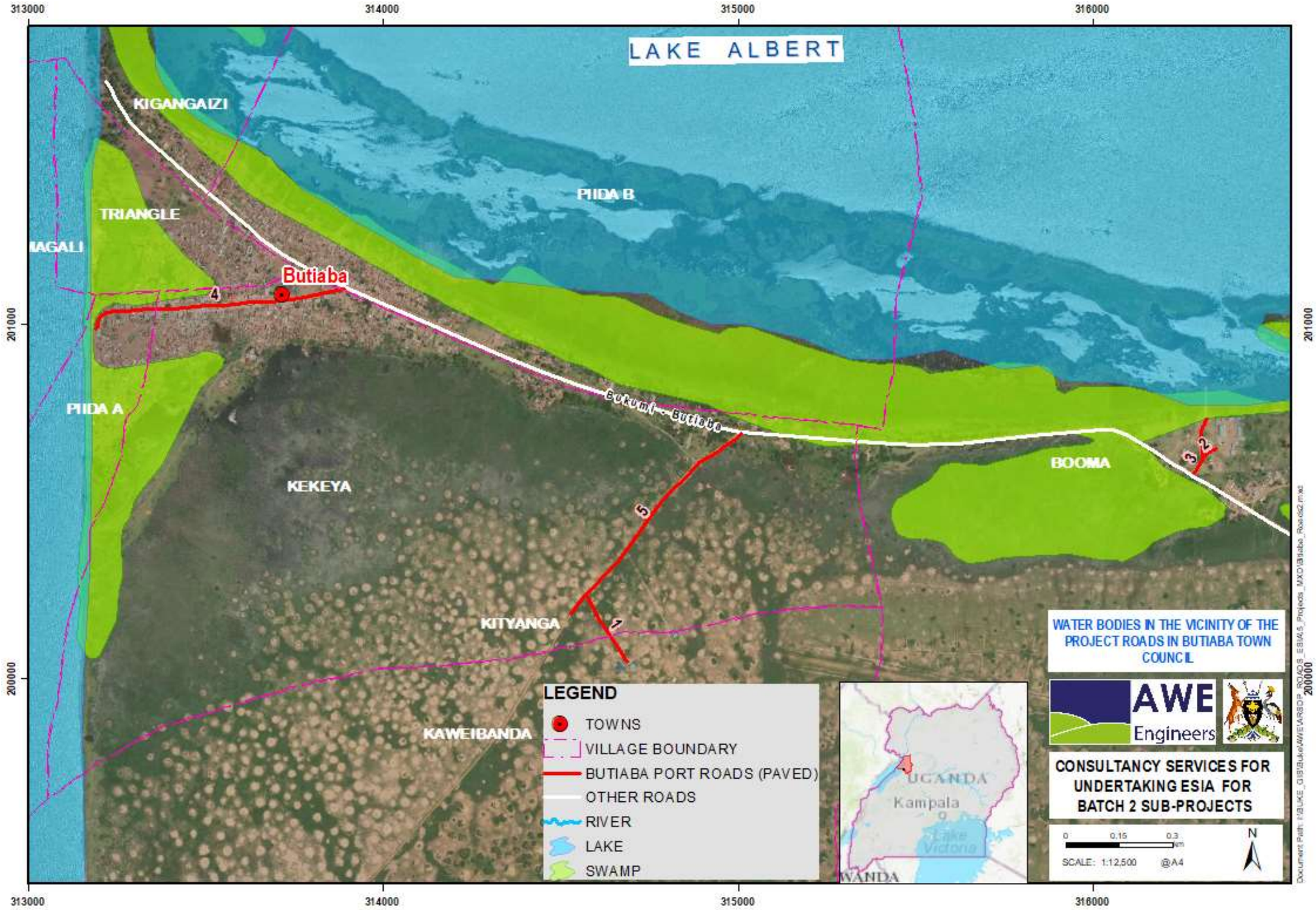


Figure 4-8: Map showing location of project roads in Butiaba Town council in relation to water bodies

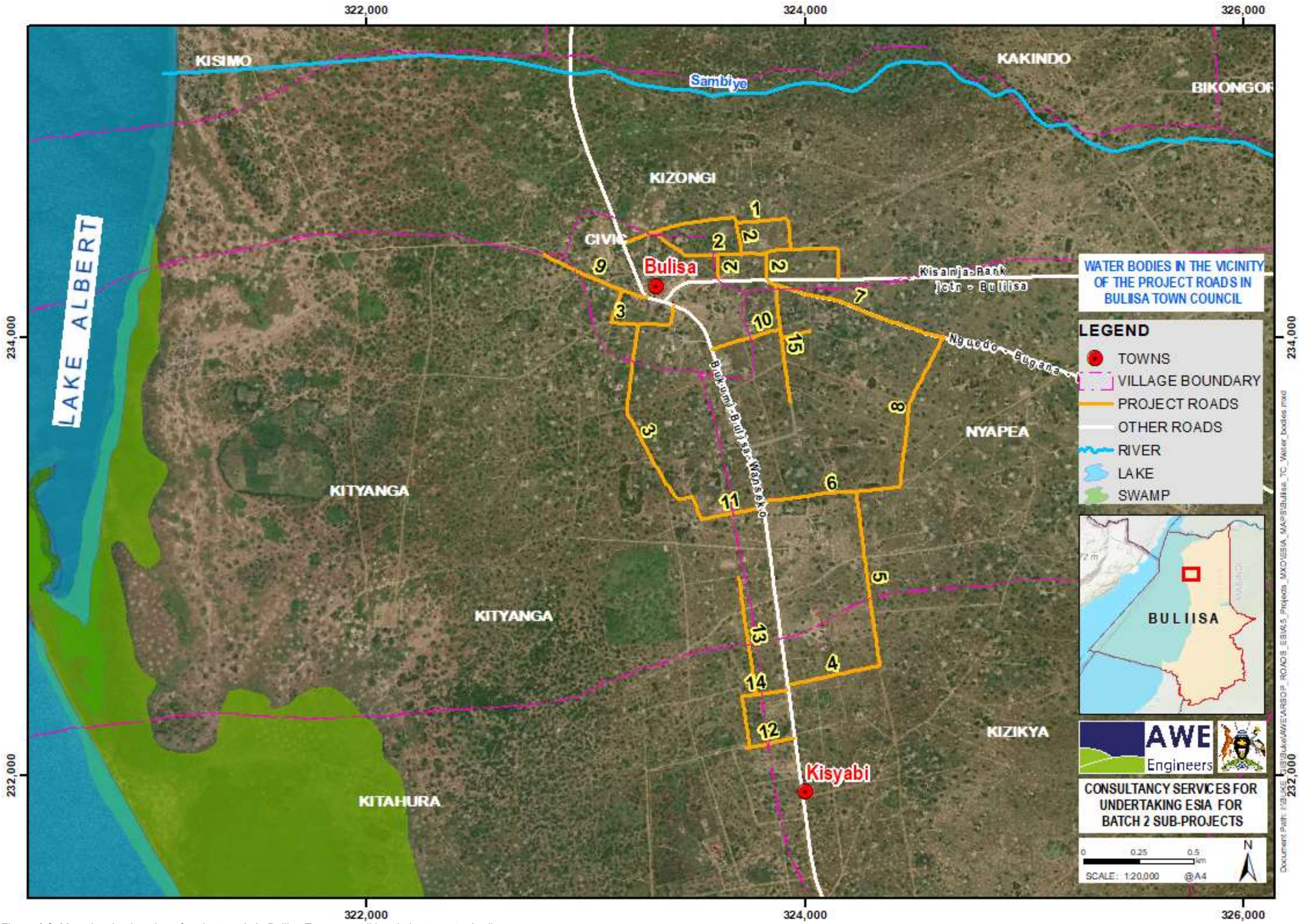


Figure 4-9: Map showing location of project roads in Buliisa Town council in relation to water bodies

4.1.5 Geology and Soils

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

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

More than 29 % of the study area is under Luxic Ferralsols followed by Acric Ferralsols (18%) and Calcisols (10%), Histosols (2 %). The Calcisols are mainly around the sites and locations of the project components, including Buliisa Town Council area. The descriptions of the soil classes are presented in Table 4-4. Soil map for the study area with soil classes is given in Figure 4-11.

Table 4-4: Soil types in Buliisa District

SN	FAO Soil Class	Area (ha)	% Area	Vulnerability to Erosion
1	Acric Ferralsols	35815.33	18%	Yes
2	Calcisols	19561.39	10%	No
3	Histosols	3660.185	2%	No
4	Luxic Ferralsols	57791.95	29%	Yes
5	Open Water	80847.9	41%	-
	Total	197676.752		

Table 4-5: Soil sampling stations

Station ID	Easting	Northing	Justification
SL_01	333552	248005	To provide baseline information about the soil type at this location; Lixic Ferralsols
SL_02	321442	204155	To provide baseline information about the soil type at this location; Calcisols

Table 4-6: Soil analysis results

Lab No	Particulars	pH	Organic Carbon	Organic Matter	Bulk Density	Ksat	Textural %ages		
			%	%	g/cm^3	mm/hr	Sand	Clay	Silt
1	SL_01	6.22	2.4	1.51	1.51	8.63	76	18	06
2	SL_02	4.42	1.8	1.30	1.30	1.44	42	46	12
According to the standards of the National Cooperative Soil Survey (NCSS)		5.5-7.0	ns	3	<1.3	ns	ns		

ns – Not specified

Lixic Ferralsols (SL_01) are a sub division of the broader FAO soil type known as Ferralsols. These soils occur mainly under tropical climates, and cover extensive areas on flat, generally well drained land. They are considered as being strongly weathered, and to be associated with old geomorphic surfaces.
Calcisol (SL_02) are characterized by a layer of translocated (migrated) calcium carbonate (whether soft and powdery or hard and cemented) at some depth in the soil profile. They are usually well-drained soils with fine to medium texture, and they are relatively fertile because of their high calcium content. (www.fao.org)

Generally, there was a concentration contrast between SL_01 and SL_02 Sampling points. Parameters like Bulk Density and pH were out of the standard ranges stipulated by the National Cooperative Soil Survey (NCSS). The percentages of organic carbon and organic matter, depends on the anthropogenic activities at the sampling point.

From the soil triangle (Figure 4-10), soil samples from **SL_01 (Lixic Ferralsols**) and **SL_02 (Calcisols**) were both representative of **Sandy Clay soil** textures which is vulnerable to crust formation and being low infiltration rate helps to generate runoff. Soil texture was used to estimate soil permeability and it was used to understand runoff generation pattern. Infiltration excess runoff on low permeability areas, is dominant during dry conditions while overland saturation excess runoff on high permeability areas is dominant during both wetting-up, transition, and wet periods.

Organic matter was highly significant in comparison with the NSCC standards. The soil organic matter content in the top soil tends to hold the soil particles together and reduces erodibility because it decreases the susceptibility of the soil to detachment. It also increases the degree of aggregation and hence infiltration, which in turn reduces erosion as a result of runoff**.**

Soil permeability is essential in estimating soil loss rate during any rainfall event. From the analysis (**Table 4-7**), the sampled areas range from Moderate to Moderate slow permeability classes.

From analysis, both soil types in the project area; Lixic Ferralsols and Calcisols are susceptible to erosion

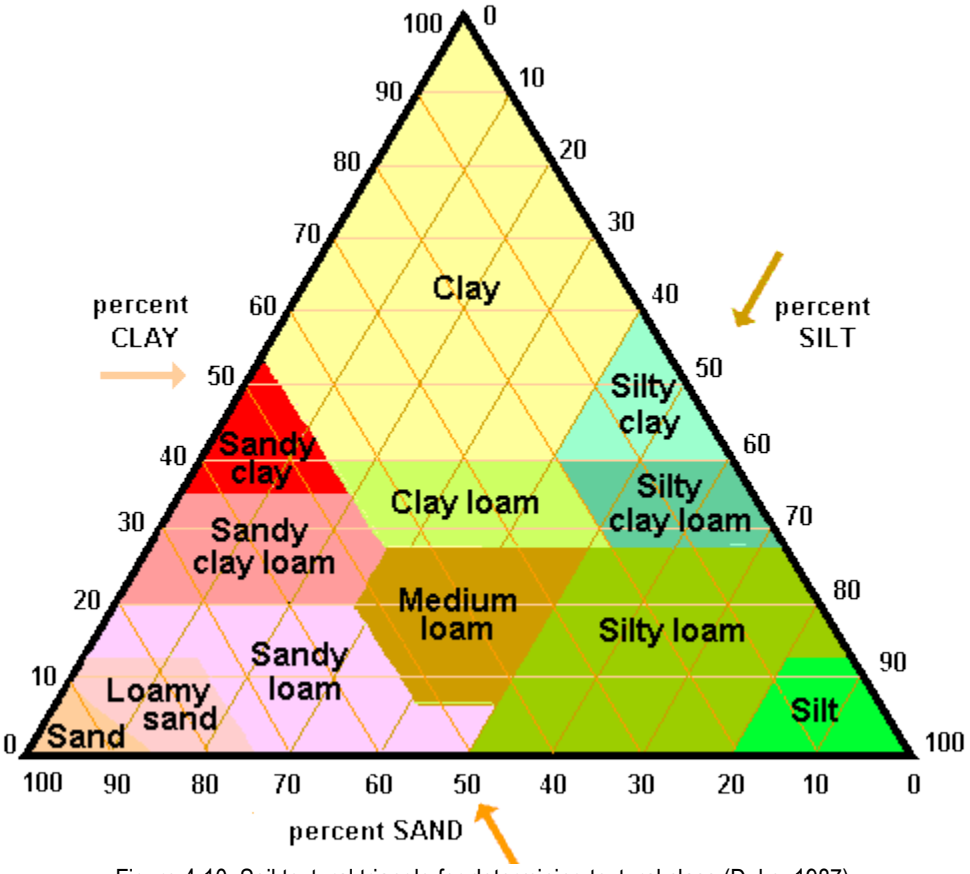


Figure 4-10: Soil textural triangle for determining textural class (Duke, 1987).

Table 4-7: Permeability classes (C) according to USDA (1983).

Texture	Permeability class (code)	Saturated hydraulic conductivity (mm/h)
Sand	1 (Fast and Very Fast)	> 60.96
Loamy sand, sandy loam	2 (Moderate Fast)	20.32 – 60.96
Loam, silt loam, silt	3 (Moderate)	5.08 – 20.32
Sandy clay loam, sand clay	4 (Moderate Slow)	1.02 – 2.03
Silty clay loam, sand clay	5 (Slow)	1.02 – 2.03
Clay, silty clay	6 (Very Slow)	< 1.02

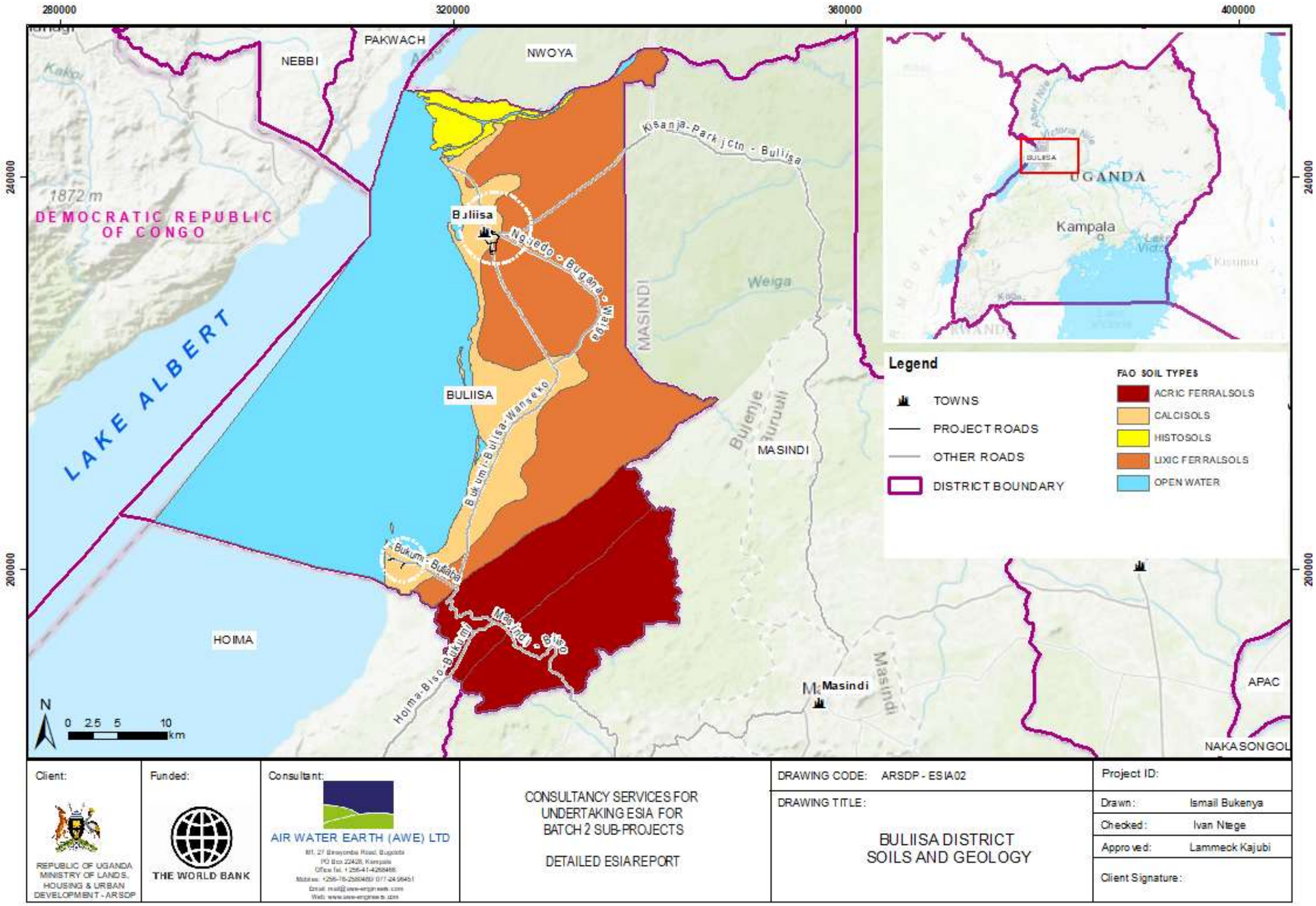


Figure 4-11: Map showing geology of Buliisa district

4.1.6 Ambient Air Quality

From the active air sampling method described, the results of the baseline ambient air quality for Buliisa and Butiaba Town Council roads are presented in Table 4-8 and Table 4-9 respectively. Note that Uganda does not have national standards for PM_{10} and $PM_{2.5}$, thus a comparison with the Draft National Air Quality Standards and IFC/WHO Air Quality Guidelines was completed to make inferences on the ambient air quality in the Project area. For the baseline survey, particulate matter was captured for those 10 micrometers or less in diameter i.e. PM_{10}. This is because particles in this diameter range constitute the majority of pollutants absorbed by the lungs (dust, pollen). $PM_{2.5}$ measures finer particles of 2.5 micrometers or less in diameter. By volume, ambient air contains 78.09% Nitrogen, 20.95% Oxygen, 0.93% argon, 0.04% CO_2 plus a host of other gases in small amounts (Cox). Results obtained in the survey indicated acceptable values of O_2 and CO_2 in ambient air at all locations tested.

Table 4-8: Results of active sampling air quality measurements for Buliisa Town Council roads January 2019

GPS Coordinates	Location	Particulates (µg/m³) [PM_{10}]			CO_2 (%)	O_2 (%)	Remarks
		Max	Average	Limit			
36 N 0323717, 0232366	Baker Road	0.292	0.002	0.300	0.03	20.9	Secluded road; no traffic
36 N 0323604, 0234334	Commercial Road Segment 1	0.541	0.170	0.300	0.03	20.9	Traffic from nearby road
36 N 0324166, 0234290	Commercial Road Segment 4	0.761	0.240	0.300	0.03	20.9	Traffic from nearby road
36 N 0323922, 0234539	Commercial Road Segment 2	0.413	0.139	0.300	0.03	20.9	Traffic from nearby road
36 N 0324136, 0233294	Galende Road	0.732	0.146	0.300	0.03	20.9	Cows grazing; school lunch time
36 N 0323218, 0234452	Gongo Road	11.29 (as)	0.595 (as)	0.300	0.08	20.9	Next to CICO camp; Heavy traffic
36 N 0323879, 0234144	Kyamurwa Road	0.539	0.029	0.300	0.03	20.9	Roadside; few homes in vicinity
36 N 0323279, 0234064	Muhoojo Road Segment 2	0.376	0.161	0.300	0.03	20.9	Crossroad with busy traffic
36 N 0323234, 0233574	Muhoojo Road Segment 1	0.495	0.158	0.300	0.03	20.9	Health Centre with light traffic
36 N 0323820, 0232146	Rift Valley Road	0.384	0.121	0.300	0.03	20.9	Main road in far distance
36 N 0323765, 0232408	Siira Road	0.490	0.154	0.300	0.03	20.9	Quiet homestead

36 N 0323942, 0232419	Speke Road	5.440	0.277	0.300	0.03	20.9	Dust from nearby main road
36 N 0324405, 0234068	Wangalya Road	0.209	0.003	0.300	0.03	20.9	Light motorcycle traffic
36 N 0324472, 0233694	Mukitale Road	0.473	0.123	0.300	0.03	20.9	School children playing in vicinity
36 N 0324289, 0232881	White Road	1.181	0.067	0.300	0.03	20.9	light foot traffic
36 N 0323790, 0234384	Commercial Road Segment 3	0.563	0.146	0.300	0.03	20.9	Light traffic from nearby road
36 N 0323499, 0233173	Mutiti Road	0.497	0.159	0.300	0.03	20.9	Quiet church compound.
36 N 0322903, 0234326	Kalolo Road	0.320	0.165	0.300	0.03	20.9	Remote homestead. No traffic

as* - Above the standard

Inference from Measurements

These measurements indicate a reasonably clean environment with respect to air quality;

a) At most secluded locations where monitoring was conducted, TSP levels conformed to the draft national limit of 0.300 µg/m^3. Gas monitoring equipment did not detect CO, NO, NO_2, Cl_2, ClO_2, H_2S and combustible gases as well indicating a clean environment with respect to air quality.
b) Gongo Road, (covering points at GPS 0323218, 0234452 and GPS 0323698, 0234526) was found to exhibit the highest dust concentrations during monitoring. This was due to the location's proximity to the CICO company camp. This road and the junction leading to it also experienced major vehicular traffic from the road works trucks moving in and out of the camp.
c) Relatively high levels of dust at Speke road (GPS 0323942, 0232419) were also encountered due to the proximity to the road, capturing dust from moving trucks ferrying material along the main road. Average TSP concentration at this road however does not exceed draft national limit of 0.300 µg/m^3.
d) Overall comparison of dust levels in the town council compared to national standards indicates one non-conforming road (Gongo road) at baseline levels. This existing impact is due to on-going works for the completion of Batch 1 roads under the ARSDP project.
e) Areas at risk include the general Civic area and homesteads/ settlements surrounding worker camps.

Table 4-9: Results of active sampling air quality measurements for Butiaba Town Council roads January 2019

Location	Particulates (µg/m³)		CO_2 (%)	O_2 (%)	Notes
	Max	Average			
Butiaba Landing Site Pier	0.190	0.077	0.03	20.9	No vehicular/motorcycle traffic
Access Road to Pier	0.644	0.128	0.03	20.9	Next to road with light traffic
Seseko-Kawaibanda Rd Segt 1	0.143	0.066	0.03	20.9	Light dust from motorcycles
Access to Butiaba HC III	0.405	0.085	0.03	20.9	Construction works nearby
Seseko-Kawaibanda Rd Segt 2	0.276	0.101	0.03	20.9	Landing site; strong winds
Magali Road	2.151	0.161	0.03	20.9	Market activities; busy traffic

Inference from Measurements

These measurements indicate a reasonably clean environment with respect to air quality;

a) At locations where monitoring was conducted, TSP levels conformed to the draft national limit of 0.300 µg/m³. Gas monitoring equipment did not detect CO, NO, NO_2, Cl_2, ClO_2, H_2S and combustible gases as well indicating a clean environment with respect to air quality.

b) Overall comparison of dust levels along roads in Butiaba Town Council reveals a pristine environment with regards to air quality.

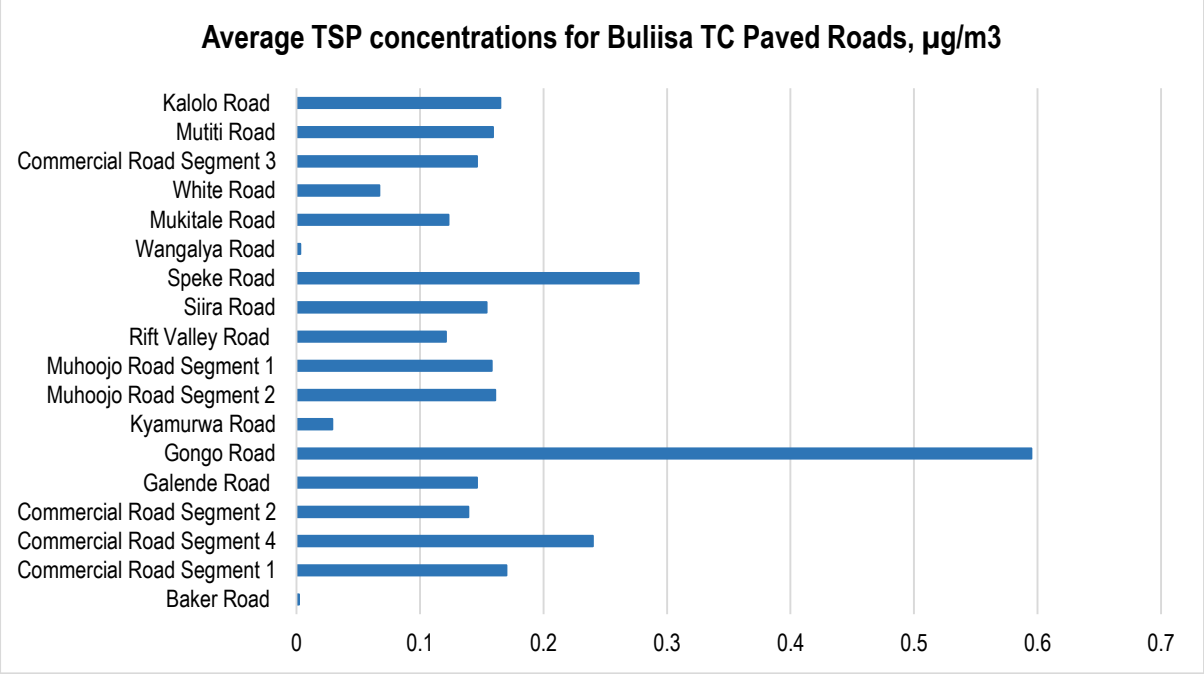


Figure 4-12: Average dust concentration levels recorded around Buliisa Town Council roads

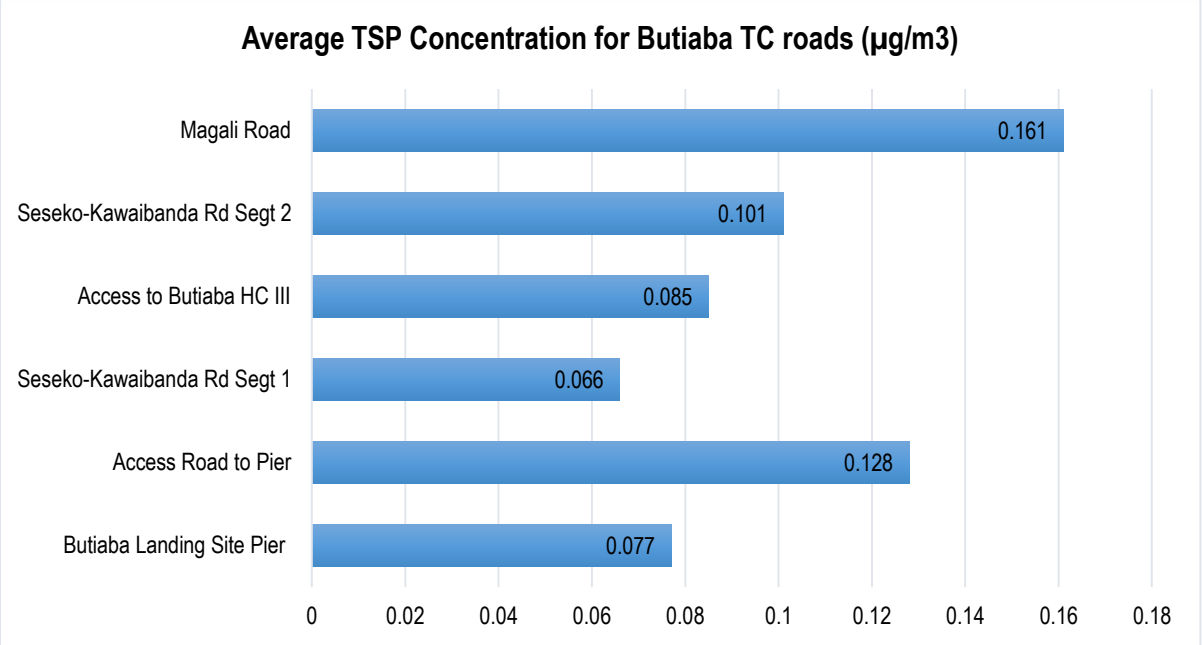


Figure 4-13: Average dust concentration levels recorded around Buliisa Town Council roads


Figure 4-14: Measurements at Kyamurwa road


Figure 4-15: Measurements at Gongo Road

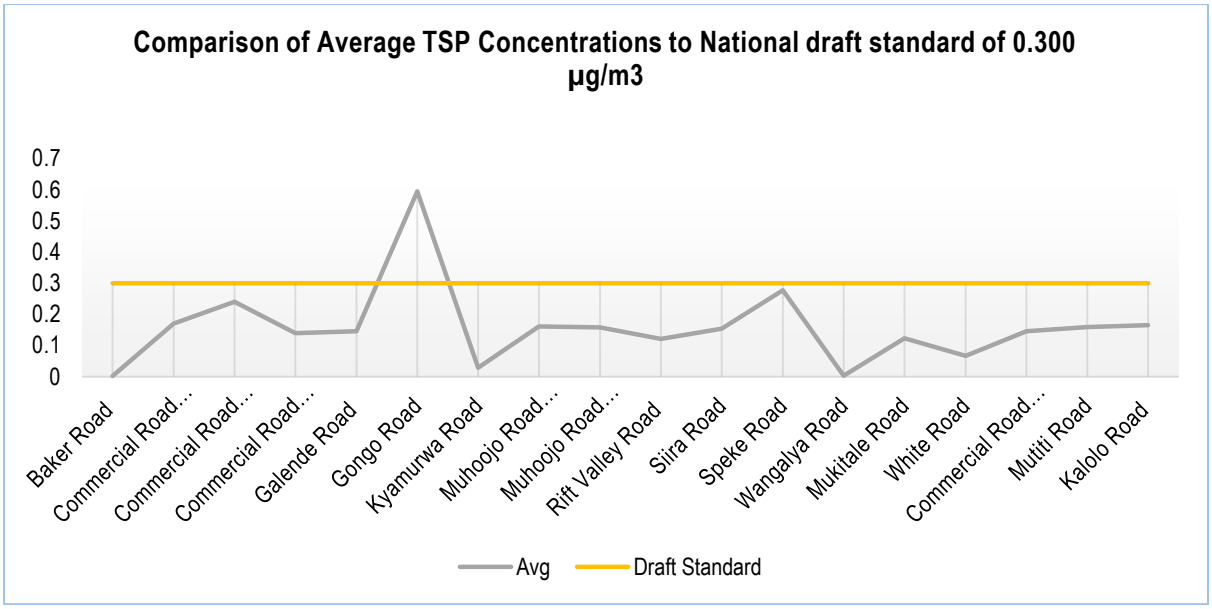


Figure 4-16: Comparison between measured results in Buliisa Town Council and the National Draft Standard limit for TSP concentrations (dust)

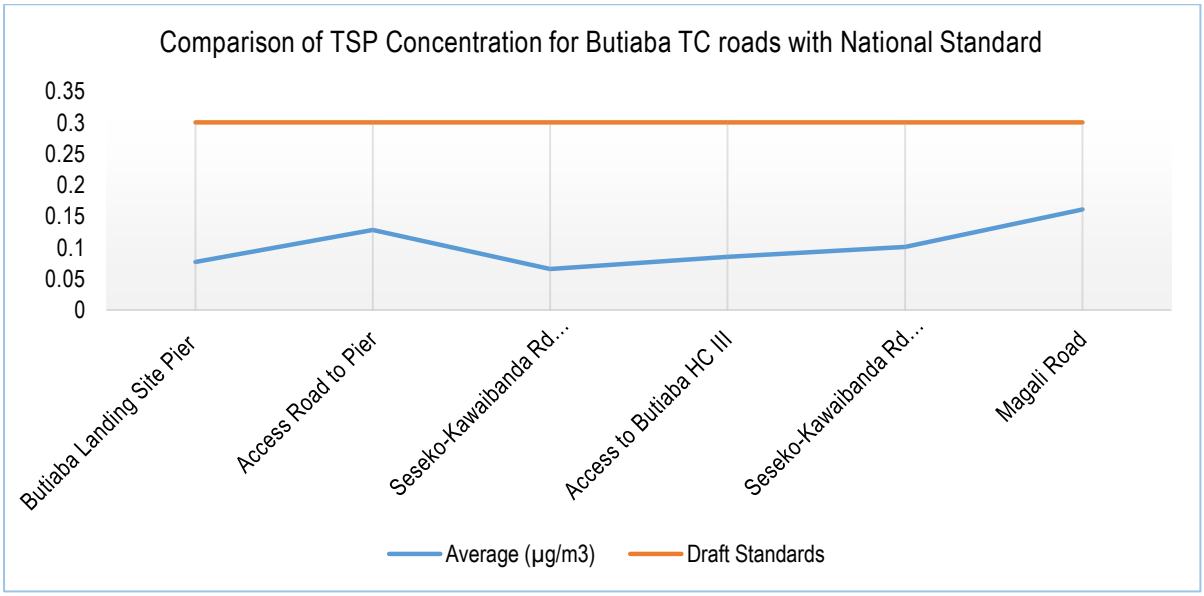


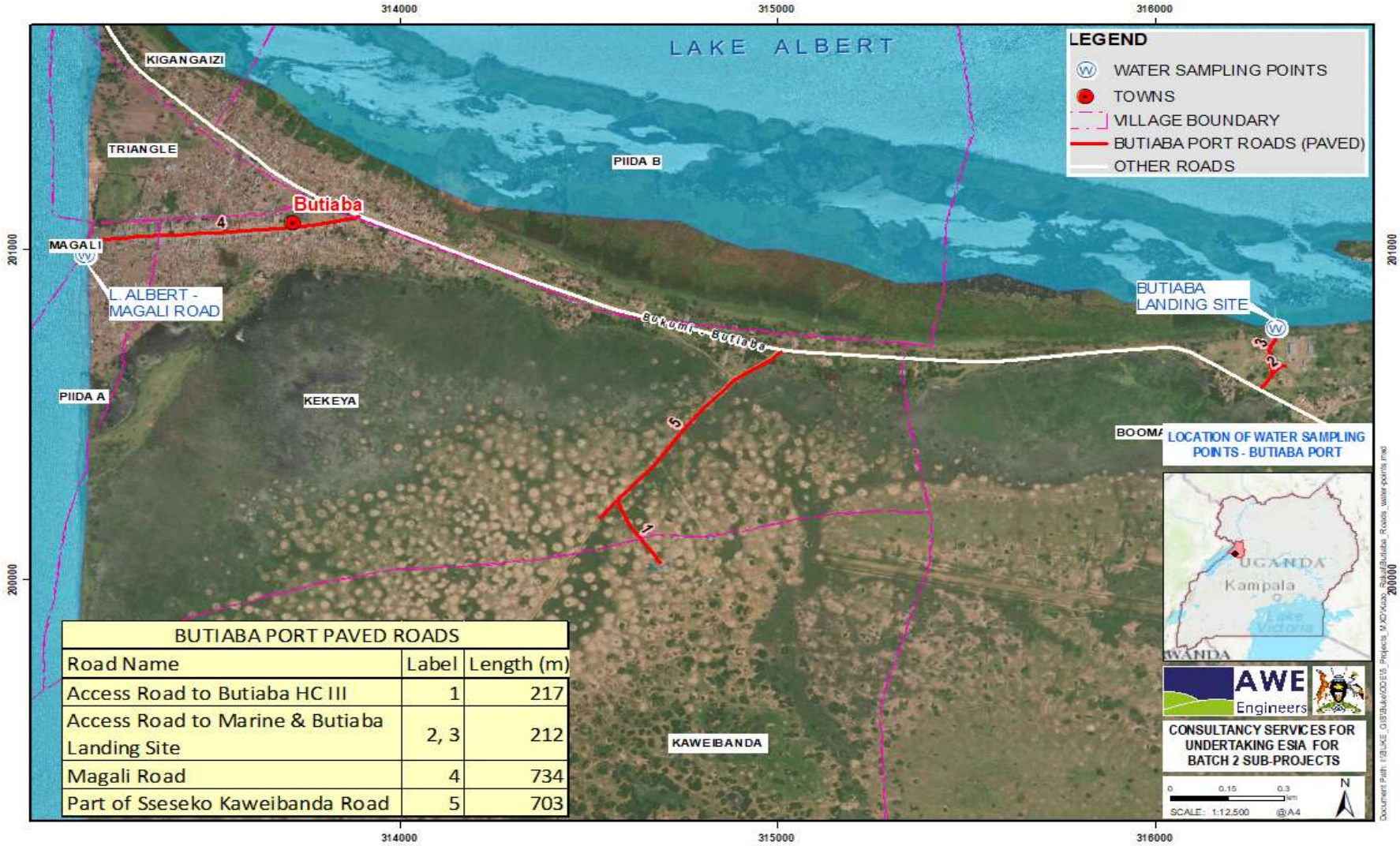
Figure 4-17: Comparison of TSP concentrations of Butiaba TC roads with National Standards

4.1.7 Baseline water quality

For this Study, water quality samples were picked from two points on Lake Albert one on the access road to Butiaba Landing site and the other at the end of Magali Road. These sampling points were chosen because the roads terminate at the water body (L. Albert) and hence civil works for these roads can have a direct impact on the water quality. Subsequent water quality monitoring should be done during civil works to corroborate results with the baseline findings.

Table 4-10: Location of Water quality sampling points

Sample Code	Measurement Location* *(*WGS84 UTM Zone 36N)*		Notes about sampling point
	Easting	Northing	
20	316322E	200738N	End point of Access road to Butiaba Landing site
8	313174E	200986N	Near end point of Magali Road in Butiaba Town



BUTIABA PORT PAVED ROADS		
Road Name	Label	Length (m)
Access Road to Butiaba HC III	1	217
Access Road to Marine & Butiaba Landing Site	2, 3	212
Magali Road	4	734
Part of Sseseko Kaweibanda Road	5	703

Figure 4-18: Location map of water sampling points

a) In-situ Measurements of Water quality

In-situ measurements were taken at both sampling points and the results are presented in Table 4-11 below. The results were compared with national standards for natural potable water (Uganda Standard (US) - East African Standard (EAS) 12: 2014, Potable water — Specification*).

Table 4-11: In-situ measurements of sampled water sources

Location		DO%	DO (mg/L)	pH	Temp	Atmospheric Pressure (mbar)	Resistivity (Ω.cm)	Conductivity (µS/cm)	Total Dissolved Solids (tds) (ppm)	Salinity	Oxidation Reduction Potential (ORP)
Butiaba Landing site (L. Albert - 8)	1	201.3	14.2	8.0	30.1	949.1	2549.0	392.0	196.0	0.19	-42.9
	2	214.4	15.0	8.1	30.3	947.5	2538.0	394.0	197.0	0.19	-28.1
	3	241.8	17.0	8.6	30.2	946.7	2418.0	414.0	207.0	0.20	-11.6
End point of Magali Road (L.Albert - 16)	1	202.4	14.2	8.3	30.1	948.0	2477.0	404.0	202.0	0.19	-7.3
	2	201.5	14.2	8.3	30.0	948.2	2481.0	403.0	202.0	0.19	-9.4
	3	200.5	14.2	8.2	29.9	948.3	2588.0	386.0	193.0	0.18	-15.1
Butiaba Landing site (L. Albert - 8)	Average	219.2	15.4	8.2	30.2	947.8	2501.7	400.0	200.0	0.19	-27.5
	STDEV	16.9	1.2	0.3	0.1	1.0	59.3	9.9	5.0	0.00	12.8
End point of Magali Road (L.Albert - 16)	Average	201.5	14.2	8.3	30.0	948.2	2515.3	397.7	199.0	0.19	-10.6
	STDEV	0.8	0.0	0.1	0.1	0.1	51.4	8.3	4.2	0.0	3.3

National Standards for (untreated) potable water are

1. Conductivity: 2500 µS/cm
2. Total Dissolved Solids: 1500 ppm
3. pH: 5.5 - 9.5

National discharge standards

1. pH: 6 – 8
2. Temperature: 20 – 35 ^{0}C

Highlighted values exceed Uganda Class II Potable Standard

Inference of in-situ water quality results

All the parameters measured were within the National Standards.

b) Laboratory analysis results

Both samples collected were analysed in the laboratory for; Apparent colour (PtCo), Turbidity (NTU), Total suspended solids (TSS), Nitrates (mg/l), Ortho Phosphorous (mg/l), Total Iron (mg/l), Manganese (mg/l), and Hardness (mg/l) in order to determine the baseline condition. The results were compared with national standards for natural potable water (Uganda Standard (US) - East African Standard (EAS) 12: 2014, Potable water — Specification*).

Table 4-12: Results of laboratory analysis

Sample ID / Parameter	End point of Magali Road (L. Albert - 8)	Butiaba Landing site (L. Albert - 20)	US EAS 12: 2014, Potable water — Specification* (Natural potable water)
Apparent colour (PtCo)	54	57	50

Turbidity (NTU)	6	7	**25**
Total suspended solids (TSS)	16	102	100
Nitrates (mg/l)	3.9	2.7	45
Ortho Phosphorous (mg/l)	0.45	0.54	**500**
Total Iron (mg/l)	0.05	0.03	**0.3**
Manganese (mg/l)	nd	nd	0.1
Hardness (mg/l)	193.2	145.1	600

Legend:

nd -	not detectable
	Results conforming to national standards
	Results not conforming to national standards

Inference of laboratory analysis results

All parameters analysed for sample 20 (Butiaba landing site) were within acceptable range in comparison to the national standards for natural potable water except for Apparent colour and total suspended solids. Unconformity of the total suspended solids and apparent colour is envisaged to be due to presence of water weed at the sampling point.

All parameters analysed for sample 8 (L. Albert – Magali Road) were within acceptable range in comparison to the national standards for natural potable water except for Apparent Color. Unconformity of the Apparent Color, is envisaged to be due to storm water drainage and pollution from the urban clustered settlements near the sampling point and in Butiaba landing site as a whole.

Figure 4-19: Water sampling at Butiaba Landing site

Figure 4-20: Water sampling at L. Albert near End point of Magali Road

4.1.8 Ambient Noise

From baseline noise Twenty-Eight (28) measurements were carried out throughout the Town council, with an additional Nine (9) measurements for the Butiaba TC paved roads. Inferences were made with comparison to standards provided in the National Noise Standards and Regulations 2003. The results of the baseline noise measurements recorded for Buliisa and Butiaba roads are presented in Table 4-13 and Table 4-14.

Table 4-13: Baseline noise level results for Buliisa TC roads

GPS Coordinates	**Location/Road**	**Average Noise Limits (Day time: 55 dB Night time: 45 dB)**					
		L_{Aeq}	Limit	L_{A90}	L_{A50}	L_{A10}	Remarks

36 N 0323717, 0232366	Baker Road	67.2	55	34	38	45.5	Noise from main road traffic
36 N 0323604, 0234334	Commercial Road Segment 1	50.1	55	39	42	49.5	Traffic from nearby road
36 N 0324166, 0234290	Commercial Road Segment 4	54.3	55	41	47	54.5	Traffic from nearby road
36 N 0323922, 0234539	Commercial Road Segment 2	47.9	55	41	43	47.5	Traffic from nearby road
36 N 0324136, 0233294	Galende Road	52.6	55	41.5	45.5	53	Cows grazing; school lunch time
36 N 0323218, 0234452	Gongo Road	51.3	55	43.5	46.5	52.5	Next to CICO camp; Heavy traffic
36 N 0323879, 0234144	Kyamurwa Road	49.1	55	37	42.5	50.5	Roadside; few homes in vicinity
36 N 0323279, 0234064	Muhoojo Road Segment 2	59.5	55	51.5	56	63.5	Crossroad with busy traffic
36 N 0323234, 0233574	Muhoojo Road Segment 1	60.9	55	35	39	52.5	Health Centre with light traffic
36 N 0323820, 0232146	Rift Valley Road	71.8	55	37	43	49	Main road in far distance
36 N 0323765, 0232408	Siira Road	50.1	55	39	44	52	Quiet homestead
36 N 0323942, 0232419	Speke Road	50.8	55	32	39	51	Dust from nearby main road
36 N 0324405, 0234068	Wangalya Road	54.8	55	36	42.5	53	Light motorcycle traffic
36 N 0324472, 0233694	Mukitale Road	54.2	55	36	42	53	School children playing in vicinity
36 N 0324289, 0232881	White Road	46.2	55	33	36	42.5	light foot traffic
36 N 0323790, 0234384	Commercial Road Segment 3	60.9	55	42.5	46	53	Light traffic from nearby road
36 N 0323499, 0233173	Mutiti Road	42.2	55	33.5	36.5	43.5	Quiet church compound.
36 N 0322903, 0234326	Kalolo Road	51.8	55	36	39.5	48	Remote homestead. No traffic

Inference from Measurements

Some of the measured noise levels were above the National regulation threshold for noise in residential and commercial establishments, (i.e. above 55 dB (L_{Aeq}). This indicates non-conforming baseline noise levels at certain road sections in the Town Council.

Five (5) of the eighteen (18) roads indicated higher than average noise levels. These include

- Baker Road (GPS 0323717, 0232366),

- Muhoojo Road Segment 1 (GPS 0323279, 0234064)
- Muhoojo Road Segment 2 (GPS 0323234, 0233574)
- Rift Valley Road (GPS 0323820, 0232146)
- Commercial Road Segment 3 (GPS 0323790, 0234384)

It was observed that higher vehicular-traffic contributed to the increased noise levels along these roads.

Table 4-14: Baseline noise level results for Butiaba TC roads

GPS Coordinates	Location/Road	Average Noise Limits (Day time: 55 dB Night time: 45 dB)					
		L_{Aeq}	Limit	L_{A90}	L_{A50}	L_{A10}	Notes
36 N 0316322, 0200738	Butiaba Landing Site Pier	52.0	55	40.5	46	54	Water hitting pier shore
36 N 0316292, 0200589	Access Road to Pier	53.0	55	37.5	44	56.5	Light traffic by roadside
36 N 0314984, 0200674	Seseko-Kawaibanda Rd Segt 1	44.4	55	35	39.5	47	Light traffic by roadside
36 N 0314678, 0200043	Access to Butiaba HC III	44.9	55	32.5	38.5	47	Construction works noise
36 N 0313252, 0198510	Seseko-Kawaibanda Rd Segt 2	59.7	55	44.5	50.5	60.5	Light traffic by roadside
36 N 0313710, 0201070 36 N 0313174, 0200986	Magali Road	67.7	55	63.5	67	69.5	Busy market day; heavy traffic

Inference from Measurements

a) There were measured noise levels above the National regulation threshold for noise in residential and commercial establishments, (i.e. above 55 dB (L_{Aeq}). This indicates non-conforming baseline noise levels at certain road sections in Butiaba Town Council.
b) Due to the market day activities on the day of measurement, Magali Road registers higher than limit average noise levels indicating a non-conformity in the measurement data. The road is also very busy with vehicle and motorcycle traffic as well as foot traffic. Auxiliary market activities like announcements over loud speakers also affected the recorded levels along the road.

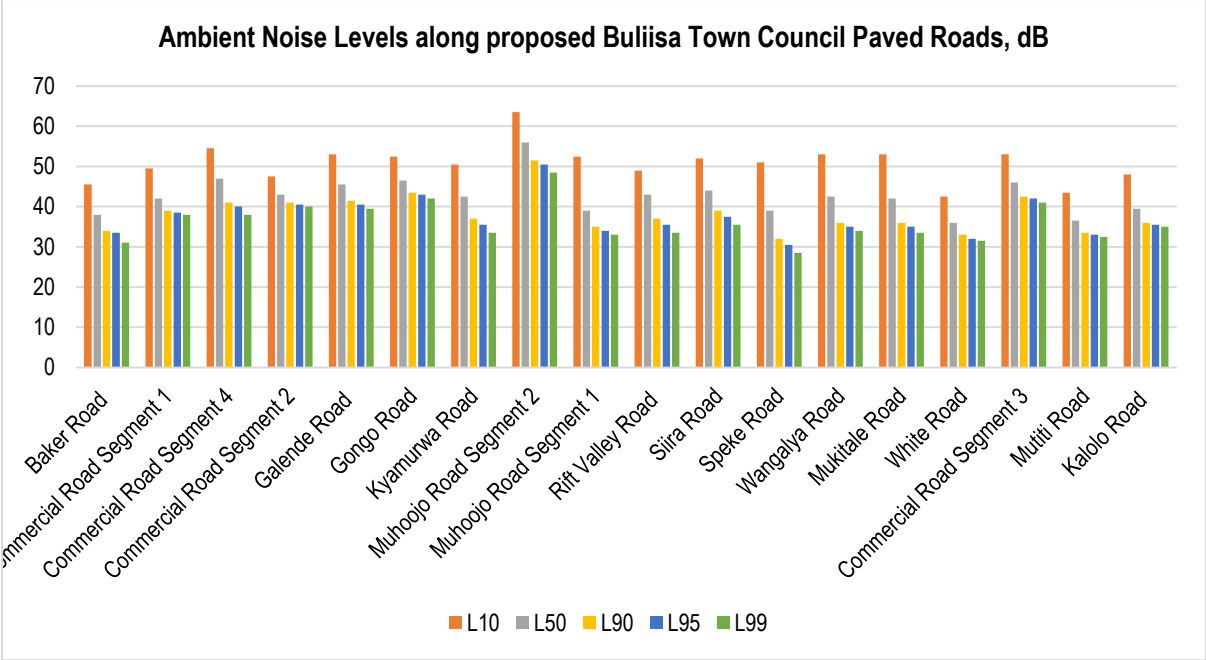
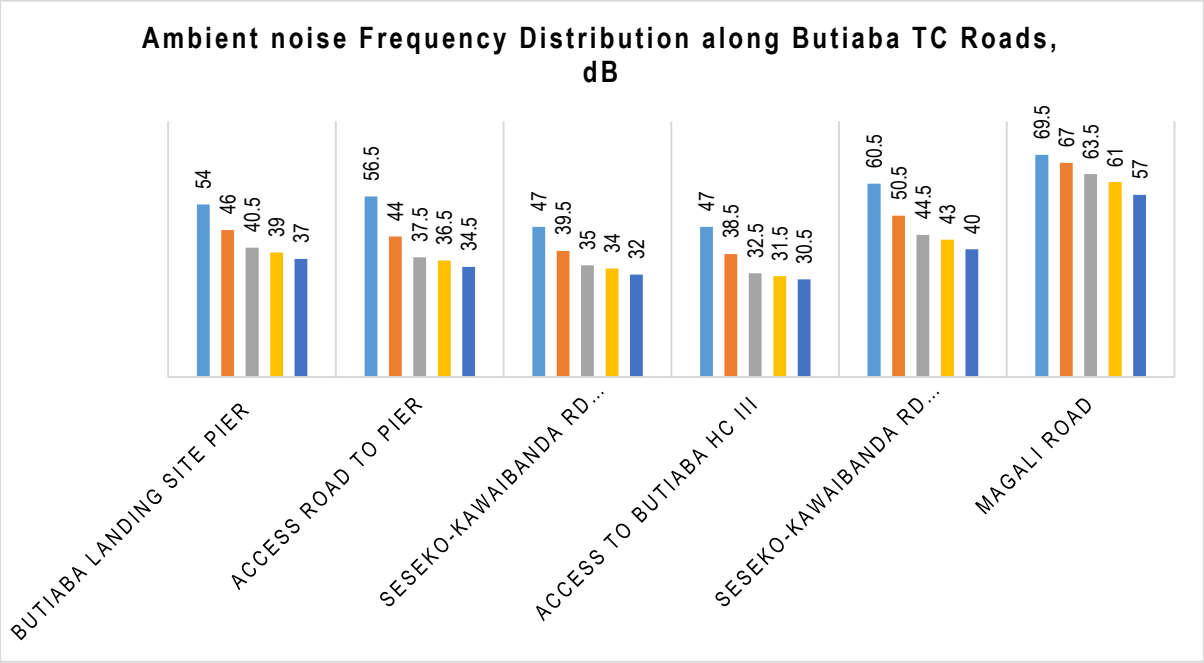


Figure 4-21: Ambient Noise levels around the project roads in Buliisa Town Council



4.1.9 Ground Vibrations

In seismology, ground vibrations are associated with elastic waves propagating through the ground. Typical frequency range for environmental ground vibrations is 1 – 200 Hz. Ground vibrations are mostly man-made vibrations of the ground, with sources ranging from explosions, construction works.

PPV (Peak Particle Velocity) is the measure for quantifying vibrations, as velocity is correlated to both building damage and annoyance levels to people. PPV is recorded in mm/s.
The human body can detect PPV about 0.2 mm/s with clearly perceptible levels of detection at 1.0 mm/s.

To cause cosmetic or structural damage to ordinary buildings PPV is in the range of 5.0 to 50.0 mm/s (ISO 10137 of 1992, British Standards BS7385 1993).
The threshold level for cosmetic damage to residential construction is in the range of 12.0–50.0 mm/s and frequency dependent. The human response and annoyance to blast vibrations can be aggravated by secondary noises such as walls and furniture rattling.

From measurement data in sampled sites from Table 4-15 and Table 4-16, baseline vibration levels for roads in both Buliisa and Butiaba Town Councils ranged between 0.3-1.1 mm/s. which according to BS 5228-2:2009 is perceptible in residential environments. The elevated vibration levels seen at Muhoojo road is due to heavy music from speakers at a nearby discotheque.

Depending on equipment used and soil characteristics, ground vibration levels from compaction can span a wide range from 0.4 mm/s PPV to a maximum of 11.0 mm/s PPV. There is often expectation that the softer soils would produce higher amplitude vibrations but this is not always the case. Also contrary to expectation, there is usually no significant correlation between weight of compaction equipment and resulting ground vibration level.

Table 4-15: Results from ground measurements for Buliisa Town Council

GPS Coordinates	Location	*Seismic Readings				Air mic reading (dB)	Remarks
		Axis	R	T	V		
36 N 0323717, 0232366	Baker Road	Peak(mm/s)	0.3	0.3	0.3	101.8	Light motorcycle traffic
		Frequency (Hz)	0.1	0.0	0.3	1.6 Hz	
36 N 0323604, 0234334	Commercial Road Segment 1	Peak(mm/s)	0.3	0.4	0.3	98.8	Goats grazing in vicinity; traffic from nearby road
		Frequency (Hz)	0.1	0.0	15.3	0.0 Hz	
36 N 0324166, 0234290	Commercial Road Segment 4	Peak(mm/s)	0.6	0.9	0.8	98.8	Heavy vehicular traffic
		Frequency (Hz)	0.1	0.0	0.0	33.0 Hz	
36 N 0323922, 0234539	Commercial Road Segment 2	Peak(mm/s)	1.0	0.8	0.5	105.5	Road works trucks ferrying material in vicinity
		Frequency (Hz)	4.4	3.6	1.2	60.2 Hz	
36 N 0324136, 0233294	Galende Road	Peak(mm/s)	0.3	0.3	0.3	108.0	School children playing in vicinity
		Frequency (Hz)	0.1	0.0	0.0	37.9 Hz	
36 N 0323218, 0234452	Gongo Road	Peak(mm/s)	0.4	0.4	0.6	106.0	Maize mill operating in short distance
		Frequency (Hz)	18.6	9.9	12.6	44.5 Hz	
36 N 0323879, 0234144	Kyamurwa Road	Peak(mm/s)	0.4	0.4	0.3	97.5	Light motorcycle traffic
		Frequency (Hz)	0.0	0.0	0.1	0.0 Hz	
36 N 0323279, 0234064	Muhoojo Road Segment 2	Peak(mm/s)	1.1	0.9	1.0	100.0	Night club blasting loud music in vicinity
		Frequency (Hz)	113	0.0	0.0	5.4 Hz	
36 N 0323234, 0233574	Muhoojo Road Segment 1	Peak(mm/s)	0.3	0.4	0.4	110.0	Sounds from church in vicinity; vehicular traffic
		Frequency (Hz)	0.4	0.0	0.0	2.3 Hz	
36 N 0323820, 0232146	Rift Valley Road	Peak(mm/s)	0.4	0.4	0.1	98.5	Main road in short distance
		Frequency (Hz)	0.3	0.0	0.0	2.5 Hz	
36 N 0323765, 0232408	Siira Road	Peak(mm/s)	0.4	0.4	0.3	109.9	Quiet homestead
		Frequency (Hz)	0.0	0.0	0.0	5.7 Hz	
36 N 0323942, 0232419	Speke Road	Peak(mm/s)	0.3	0.3	0.4	108.4	Junction to main road. Heavy lorry traffic
		Frequency (Hz)	0.2	0.0	20.9	13.3 Hz	

36 N 0324405, 0234068	Wangalya Road	Peak(mm/s)	0.3	0.3	0.3	104.9	Light motorcycle traffic
		Frequency (Hz)	1.9	0.0	3.9	0.5 Hz	
36 N 0324472, 0233694	Mukitale Road	Peak(mm/s)	0.3	0.4	0.3	101.0	School children playing in vicinity
		Frequency (Hz)	0.1	0.0	0.0	2.8 Hz	
36 N 0324289, 0232881	White Road	Peak(mm/s)	0.3	0.4	0.1	95.9	Secluded road. No activity
		Frequency (Hz)	0.1	0.0	0.0	0.1 Hz	
36 N 0323790, 0234384	Commercial Road Segment 3	Peak(mm/s)	0.4	0.4	0.4	95.8	School boarding section in vicinity
		Frequency (Hz)	0.1	0.0	0.0	3.5 Hz	
36 N 0323499, 0233173	Mutiti Road	Peak(mm/s)	0.3	0.3	0.1	91.5	Cows grazing in church compound
		Frequency (Hz)	0.2	0.1	0.0	0.2 Hz	
36 N 0322903, 0234326	Kalolo Road	Peak(mm/s)	0.4	0.4	0.3	102.8	Loud speakers from music nearby
		Frequency (Hz)	0.0	0.0	0.1	41.0 Hz	

***R, T** and **V** in the columns refer to the Vertical, Longitudinal and Transversal velocities (respectively) transducer channels from a seismograph. The combination of these velocities is used in the calculation of Peak Particle Velocity (PPV)

Inference from Measurements

a) Commercial road segment 2 close to the Camp road registered the high perceived PPV values and frequency due to its proximity to the truck movements around CICO camp.
b) The bulk of vibration generating operational activities to be considered should be carried out during the day to reduce receptor sensitivity. There already exists current impacts due to road activities for the project's Batch 1 roads. The presence of Lorries and trucks is an existing source of vibrations in the town albeit not significant to cause destruction of buildings in the Town council.

Perceivable levels of vibration at nearby sensitive receptors are likely to be produced during the project activities. This is due to vibration generation interaction with the ground and the transmission of this vibration through the ground from the source to the receiver.

Table 4-16: Results from ground vibration measurement for Butiaba Town Council roads

Location	Seismic Readings				Air mic reading(dB)	Remarks
	Axis	R	T	V		
Butiaba Landing Site Pier	Peak(mm/s)	0.4	0.1	0.3	102.8	Water hitting pier shore
	Frequency (Hz)	29.3	4.2	14.8	0.0 Hz	
Access Road to Pier	Peak(mm/s)	0.4	0.3	0.3	101.5	Light traffic by roadside
	Frequency (Hz)	0.1	11.3	0.5	3.7 Hz	
Seseko-Kawaibanda Rd Segt 1	Peak(mm/s)	0.4	0.4	0.3	98.8	Light traffic by roadside
	Frequency (Hz)	0.0	0.0	0.2	5.3 Hz	
Access to Butiaba HC III	Peak(mm/s)	0.3	0.3	0.3	95.9	Construction works noise
	Frequency (Hz)	0.1	0.0	0.0	0.7 Hz	
Seseko-Kawaibanda Rd Segt 2	Peak(mm/s)	1.7	1.3	0.8	100.0	Light traffic by roadside
	Frequency (Hz)	20.4	0.0	0.0	3.9 Hz	
Magali Road	Peak(mm/s)	0.3	0.3	0.1	98.8	Busy market day; heavy traffic
	Frequency (Hz)	0.3	0.0	0.1	13.0 Hz	

Inference from Measurements

a) Seseko-Kabaiwanda Road Segt 2 registered some noticeable vibration levels due to loud music playing from a nearby club. Other areas along the roads were within limit for perceptible levels of vibration.

Perceivable levels of vibration at nearby sensitive receptors are likely to be produced during the project activities. This is due to vibration generation interaction with the ground and the transmission of this vibration through the ground from the source to the receiver.

To contextualize the field results, BSI British Standards (BS 5228-2:2009): *Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration* will be used to evaluate and interpret the sampling results.

Human and structural response to different vibration levels is influenced by distance between sources and receptor, ground type; which acts as transport medium, and duration of the vibration intervals. The likelihood of adverse comments occurring from construction receptors is used to evaluate the likely severity of effect. Table 4-17 below shows effect that can be caused by various levels of vibration.

Table 4-17: Effect of vibration to humans at various levels

Vibration PPV	Effect
0.14 mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3 mm/s	Vibration might be just perceptible in residential environments.
1.0 mm/s	It is likely that vibration of this level in residential environments will cause complaint, but is tolerable if warning and explanation has been given to residents.
10 mm/s	Vibration is likely to be intolerable for any more than a very brief exposure to this level.

From measurement data in sampled sites from baseline vibration levels for roads in both Buliisa and Butiaba Town Councils ranged between 0.3-1.1 mm/s. which according to BS 5228-2:2009 is perceptible in residential environments.

4.1.10 Waste disposal methods/facilities

Waste management has both environmental and health implications on individuals and communities. Improper disposal of waste could lead to proliferation of disease-causing agents like bacteria in the environment leading to disease outbreaks such as cholera, dysentery and typhoid, among others. The way households dispose off their solid waste can pose a risk to public health by attracting flies, mosquitoes as well as rats and rodents by allowing them to breed. This may encourage the spread of diarrhoea diseases as well as other diseases.

At household level, the survey sought to ascertain the waste disposal methods used within the project area. Findings revealed that majority of the households in both Buliisa and Butiaba Town Councils dig holes/pits and bury their waste, followed by those that openly burn it.

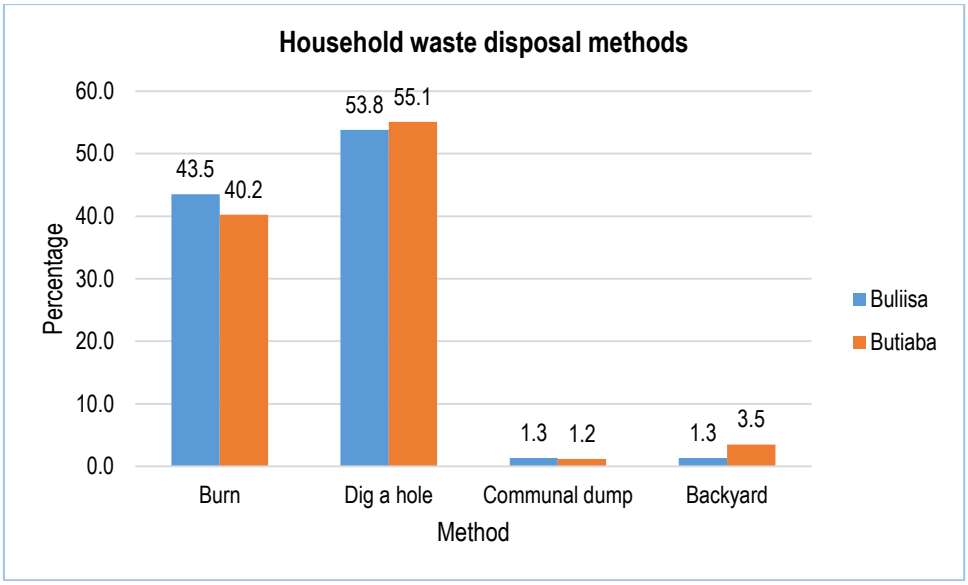


Figure 4-22: Household waste disposal methods

Figure 4-23: Open burning of waste along Magali road in Piida A village in Butiaba

Figure 4-24: Backyard dumping of waste in Tangala Village

Buliisa and Butiaba Town Councils do not have gazzeted sites e.g landfills for disposal of waste. Construction contractors procure services of waste handling companies to undertake regular collection and disposal of waste in neighbouring areas e.g. Hoima. Examples of these companies include Epsilon and Enviroserve.

In the district, main sources of solid waste include household waste and municipal waste from trading centers, which is usually collected in sacks and transported by trucks for disposal.

Table 4-18: Waste streams and management options

Waste Stream	Main sources	Management options
General household domestic kitchen waste including food	• Accommodation areas for project staff • Kitchen and dining facility	- Procurement and production control to avoid waste food - Storage in colour coded impermeable skips - Recycle where possible - Observe 24-hour disposal limit - Compost into provide manure for gardening - Landfill only when volume is high or last resort

Waste Stream	Main sources	Management options
Paper, card boards and similar packaging materials	• Offices of contractor and supervising consultants • stores • Mechanical workshops • Timber and associated carpentry work areas • Laboratories (Contractors and RE) • Clinic	- Undertake bulk purchases to limit packaging materials - Re-use waste materials within premises - Stock pile for possible sale eg firewood - Allow controlled salvaging by communities
Leather and textiles	• Residential premises • stores • Mechanical workshop • Clinic	- Prescribe packaging material in procurement specifications to exclude leather packaging - Re use wastes
Plastics (hard and soft) and rubber (worn out tyres)	• Storage faculties • Mechanical workshop • Administrative facilities • Clinic • Kitchen • Residential premises (RE and Project staff) • Laboratories	- Facilitate Re-use - Contract licensed waste management firm to undertake recycling.
Inert construction rubble (aggregate, concrete, excess cut material masonary, etc)	• Material storage platforms • Quarry • Construction work sites	- Use tight production control systems to avoid waste - Sensitize workers on losses incurred through lost inputs - Prepare stock pile areas ringed by cut off drains - Process wastes for re-use as fill materials where possible. - Stock pile excess cut material in designated stockpile sites to be used in restoration of quarry, borrow pit and other disturbed sites
Scrap metal (damaged sheets, iron strips, out of use automobile parts etc).	• Mechanical workshop • Quarry • Residential premises	- Prepare stock pile areas and ware house on pallets - Re-use within project operations - Invite re-cycling and fabricating firms to bid for purchase of metallic waste.
Hazardous waste (including, bitumen emulsion, laboratory and related chemicals, highly inflammatory substances, radioactive wastes, etc) Medical waste including used syringes, expired drugs, blood sample, used	• Clinic • Bitumen storage areas • Laboratory • Fuel storage areas • Mechanical workshop	- Adopt a batching system with codes for the different sources - Construct a hazardous waste storage facility which is leak proof, sheltered from the sun and screened off. - The storage facility must be set on an impervious concrete base - A cut off drain shall be constructed around the entire facility

Waste Stream	Main sources	Management options
swabs, empty drip bottles, ampoules, etc.		- Access to the facility must be restricted - Each type of hazardous waste must be compartmentalized to avoid cross mixing - Wastes will be handed over to a NEMA licensed waste management company for transportation and disposal - For medical waste, the Contractor shall transport it to a nearby health center in the District for example Buliisa Health Center IV for Buliisa town council roads and Butiaba Health Center II for Butiaba town council roads for Incineration.
Liquid waste including waste water	• Accommodation areas for consultant and contractor's workers • Kitchen • Sanitary facilities specifically hand wash basins, car washing points and bathing facilities.	- Provide soak pits for waste water from wash hand basins, sinks and car washing points - Provide septic tanks for sanitary facilities - Hire cesspool emptier to regularly empty the septic tanks

4.2 Biological environment

4.2.1 Vegetation and flora

The habitats along the roads were of modified agro-ecosystems, mainly fallow/ grazing land, or grasslands and with a few encounters of farmlands, of variable phyto-sociological combinations. Marshes/ wetlands were along the Access road to Butiaba HCIII and towards the Butiaba landing site pier. Overall, a total of 110 plant species were encountered along the road corridor (Appendix III).

Table 4-19: Habitat descriptions and photographic illustrations along the proposed roads to be paved

Road/ coordinate	No. in reference to the map	Habitat characteristics	Photographic illustrations
Buliisa			
Baker	2	The corridor consisted of settlements, and *Cynodon dactylon -Hyparthelia dissoluta* grassland with thickets of *Capparis, Harrisonia abyssinica, Hoslundia opposite, Cadaba farinosa* with a few trees of *Combretum molle* and *Balanites aegyptiaca*	 
Commercial road Seg 1	3	Characterised by settlements and Open grassland of *Hyparthelia dissoluta, Hyparrhenia filipendula* with sparse trees of *Sclerocarya birrea, Crateva adansonia*	 

Commercial road Seg 4	3	Characterized by settlements and open grasslands of *Hyparthelia dissoluta, Cynodon dactylon, Eragrostis* varied with other herbaceous-weedy species, and a few trees of *Balanites aegyptiaca, Albizia coriaria, Senna samea*	 
Commercial road Seg 2	3	Characterized by settlements and open grasslands of *Hyparthelia dissoluta, Cynodon dactylon, Eragrostis* varied with other herbaceous-weedy species, and a few trees of *Balanites aegyptiaca, Combretum andropogon* and *Senna samea*	 
Galende	4	Open grasslands of *Hyparthelia dissoulta, Cynodon dactylon, Sprobolus pyramidalis,* mixed with shrubby species such as *Thevetia peruviana, Jatropha carcus, Senna samea, Melia azederach and Acalypha fruticosa*, C*apparis spp,* with a few very sparsely distributed trees of *Balanites aegyptiaca, Combretum andropogon* and *Crateva andasonia*	 

Gongo	5	Composed of grasslands with a few commercial developments		
Kyamurwa	6	The road corridor is characterized by human settlements and open grasslands dominated by *Hyparthelia dissoluta* with very sparse trees of *Balanites aegyptiaca* and *Melia azederach*.		
Muhoojo Seg 2	7	Bushy vegetation with thickets of *Harrisonia abyssinica, Capparis fascularis Azema tetracantha, Cadaba farinosa*, blending with tall grasses of *Hyparthelia dissoluta*, and other shrubby species such as *Senna samea, Crateva adansonia, Cassia lata, Acalypha fruticosa, Senna didymobotrya, Abutilon mauritiana* among others, and farmlands with cassava.		

Muhoojo Seg 1	7	Bushy vegetation with thickets of *Harrisonia abyssinica,*and *grasses of Hyparthelia dissoluta*, and other shrubby species such as *Senna samea, Crateva adansonia, Cassia lata, Acalypha fruticosa, Senna didymobotrya, Abutilon mauritaiana* among others, and farmlands with cassava.		
Rift Valley	8	The road corridor was characterized of Fallow/ grazing land that constituted of *Hyparthelia dissoluta, Eragrostis, Cynodon dactylon, Brachiaria sp* with small thickets of sbrubby species, and human settlements (out of the ROW) but critical social receptor that would be impacted by noise and vibrations and generated dust		
Siira	9	The corridor consisted of settlements, and *Cynodon dactylon -Hyparthelia dissoluta grassland* with thickets of *Capparis spp, Azema tetracantha, Harrisonia abyssinica, Hoslundia opposita, Cadaba farinosa* with a few trees of Combretum *andropogon, Euphorbia candelabrum, Senna samea*		

Speke	10	Open grassland characterized by *Hyparrehenia sp, Eragostis sp, Cynodon dactylon, Hyparthelia dissoluta,* with a few tree species of *Balanites aegyptiaca and Senna samea* as the most dominant, though sparsely distributed		
Wangalya	11	The road was partly paved, but with *Hyparthelia dissoluta* dominated grasslands with few individual trees of *Balanites aegyptiaca.* Road is partly tarmac		
Mukitale	12	Fallow/ grazing land with characteristic species of *Hyparthelia-Eragrostis* with other variable species of *Balanites aegyptiaca, Combretum molle* & *Acacia gerrardii*		

White	13	Open *Hyparthelia dissoluta* grassland with very sparse *Acacia sp*, *Combretum andropogon* and *Combretum molle, Sclerocarya birrea & Euphorbia candelabrum*	 
Commercial road seg 3	3	Characterized by settlements and open grasslands of *Hyparthelia dissoluta* varied with herbaceous-weedy species, and a few trees of *Balanites aegyptiaca, Albizia coriaria, Senna samea*	 
Mutiti	14	Fallow/ grazing land with characteristic species of *Cynodon dactylon, Hyparthelia-Eragrostis* with other variable species of *Balanites aegyptiaca, Combretum molle & Acacia gerrardii*	 

Kalolo	15	Open grasslands of *Hyparthelia dissoluta-Eragrostis spp, Cynodon dactylon and Hyparrhenia filipendula* and a few trees of *Balanites aegyptiaca, Sclerocarya birrea, Combretum spp, Senna samea, Melia azederach* varied with herbaceous-weedy species	 
Butiaba Town Council			
Access road to Butiaba HCIII	1	Bushy habitat with *Panicum sp, Hyparrhenia sp, Cynodon and Pennisetum* grasses, with marshes characterized by sedges, and shrubs of *Aeschyenomene uniflora*	 
Access road to Butiaba landing site gate	2	Characterized by short grasses dominated by *Cynodon dactylon and Eragrostis sp, with Senna samea* and large *Balanites aegyptiaca,* varied with other herbaceous-weedy species	 

Access road to Butiaba landing site pier	3	Characterized by dry land covered with short grasses dominated by *Cynodon dactylon* and *Eragrostis sp*, and partly a marginal wetland habitat at the shores of Lake Albert, dominated by *Hygrophila sp, Pennisetum sp* and *Typha capensis,* varied with other herbaceous-weedy species		
Magali	4	This is within Butiaba town, where the road corridor is completely of bare ground There are settlements and commercial buildings along the road		
Seseko Waibanda seg 1	5	Partly of bare ground with some short grasses that constituted of *Cynodon dactylon, Eragrostis sp* varied with several herbaceous-weedy species. Tree species were limited to *Crateva adansonia and Sclerocarya birrea,* but very sparse in occurrence and distribution.		

a) **Ecological sensitivity**

There were no sensitive ecological receptors along the proposed road corridors, except the marginal wetland areas at the pier in Butiaba, and some marshes along the access to the Health Centre III, in Butiaba Town Council. These are important hydrological features for regulation of water flow, and filtration. Hence it is critical that their protection is observed during road works.

The greatest coverage of the project area was largely of agro-ecosystems characterized of, mainly fallow/ grazing land, or grasslands and with a few encounters of farmlands. These habitats do not conform to the (IFC, 2012) descriptions of modified habitats with significant biodiversity value, because human activities have substantially modified the areas' primary ecological functions and species composition.

The classified habitats host various life forms of plants, but none of the plant species recorded were red listed (IUCN, 2020; WCS, 2016). All recorded species are widely distributed and common in other parts of Uganda, yet with no alarming conservation threats. Therefore, no potential impacts are anticipated on vegetation and flora.
However, given the nature of the project, there will be localized and negligible loss of habitats. Therefore, activities that culminate into loss of habitats also have negative impacts on displacement or loss of plants, thereby impacting on the vegetation cover.

4.2.2 Fauna

a) Butterflies

A total of 97 butterfly species were recorded along the road sections. Distribution of species within the ecological habitats that were used for classification is shown Figure 4-25. Habitat specific butterfly species were present; with two (02) forest dependants, 08 forests edge/woodland species, 21 migrant species, 27 open habitat species, 37 widespread species and two swamp species (along the marshes and wetland in Butiaba).

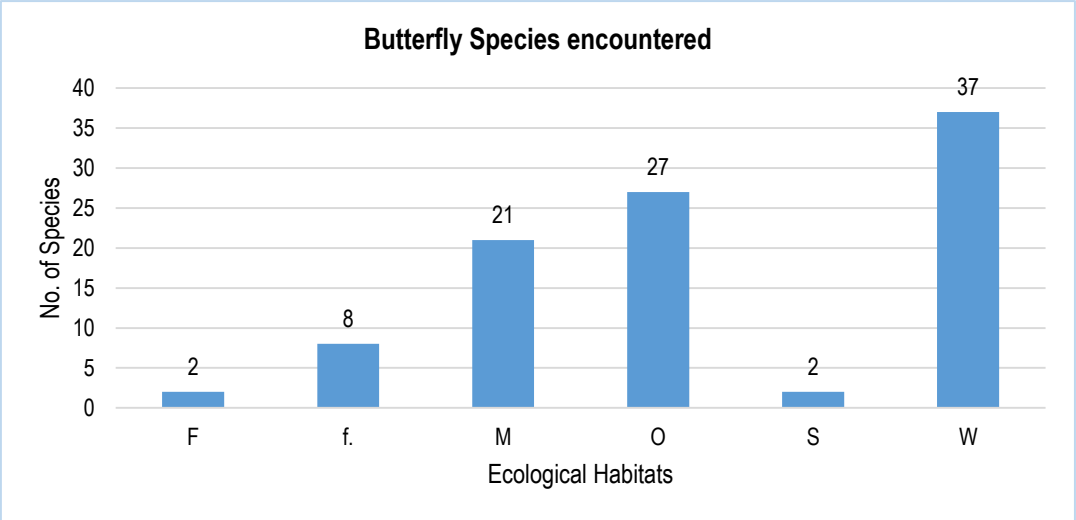


Figure 4-25: Butterfly species within ecological habitats

Of the total butterfly species recorded in the survey only three species; *Eurema brigitta, Junonia oenone* and *Zizina antanossa* have been evaluated by the IUCN redlist and currently considered of Least concern. Otherwise the rest of the species have not yet been evaluated. Hence within the direct impact

project areas there were no globally or nationally threatened species of butterflies, with reference to the assessment categories (IUCN, 2020).

The localized operations of the project will present negligible impacts to the butterflies. Sensitive butterfly species-that are habitat specific may be dis-orientated when their habitats are disturbed as a result of vegetation clearances. But then butterflies are mobile insects and easily migrate to safer areas upon disturbances.

b) Herpetiles

A few species under this taxon were recorded, being that the habitats are under constant disturbances by humans and livestock. The project areas within Buliisa have large numbers of livestock, and human presence is also high, both of which influence quality of habitats. Thus, the resultant limitation in occurrences of reptiles and amphibians. Also because of the heavy presence of livestock, the local perceive reptiles, particularly snakes as a big threat to their livestock, and many of the reptiles have over the years succumbed to killings in the process.

The reptiles recorded are presented in **Table 4-20**.

Table 4-20: Reptiles encountered within the project area

Order	Family	Species	Common Name	IUCN Status
Sauria	Chamaeleonidae	*Chamaeleo gracilis*	Graceful Chameleon	Least Concern
	Gekkonidae	*Hemidactylus brookii*	Brook's House Gecko	Least Concern
	Scincidae	Mabuya *striata*	Common Striped Skink	Least Concern

Order Sauria was most observed within the landscape, because most lizards have well-developed limbs; the head is normally held high off the ground, and they are agile predators (Cogger, 2000), hence increasing their colonization success unlike the limbless Serpentes (Savage, 1992). While individuals of genus Mabuya, were most dominant because they are generalists with a wide ecological tolerance (Gerlach, 2005). The species records were of least concern (IUCN, 2020).

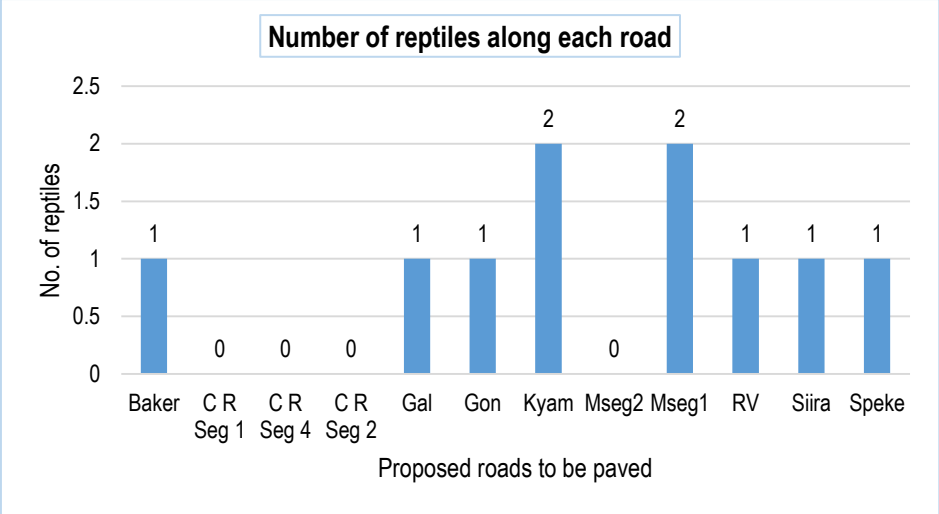


Figure 4-26: Number of reptile species encountered along each road

Key to Figure 4-26; Commercial road Seg 1-C R Seg 1; Commercial road Seg 4-C R Seg 4; Commercial road Seg 2-C R Seg 2; Galende-Gal; Gongo-Gon; Kyamurwa-Kyam; Muhoojo Seg 2-Mseg2; Muhoojo Seg 1-Mseg1; Rift Valley-RV; Siira-Siira; Speke –Speke

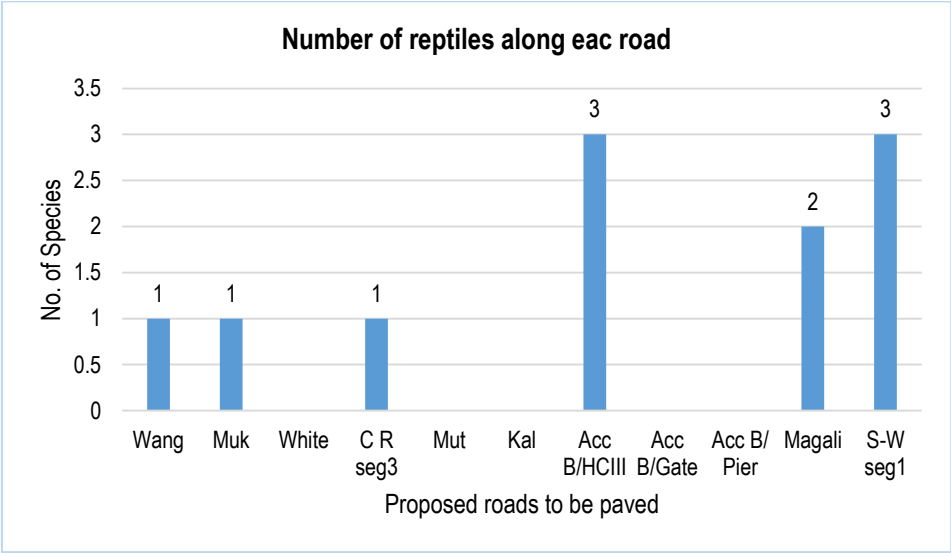


Figure 4-27: Number of reptile species encountered along each road

Key to Figure 4-27: Wangalya-Wang; Mukitale-Muk; White –White; Commercial road seg 3-C R seg3; Mutiti-Mut; Kalolo-Kal; Access road to Butiaba HCIII-Acc B/HCIII; Access road to Butiaba landing site gate-Acc B/Gate; Access road to Butiaba landing site pier-Acc B/ Pier; Magali-Magali; Seseko Waibanda seg 1-S-W seg1

c) Amphibians

The amphibian records are presented in Table 4-21. These species recorded were of Least concern (IUCN, 2020), within the marshes and wetland areas, in Butiaba areas along the roads as presented under Table 4-21.

Table 4-21: Amphibians and their conservation status

Family	Species	Common name	IUCN Conservation status
Bufonidae	Amietophrynus regularis	Common toad	LC
Dicroglossidae	Hoplobarachus occipitalis	Edible bull frog	LC
Hemisotidae	Hemisus mamoratus	Marbled snout burrower	LC
Phrynobatrachidae	Phrynobatrachus natalensis	Natal puddle toad	LC
Phrynobatrachidae	Phrynobatrachus_mababiensis	Mababe puddle frog	LC
Ptychadenidae	Ptychadena mascareniensis	Grass rocket frog	LC
Ptychadenidae	Ptychadena porosissima	Stripped grass frog	LC

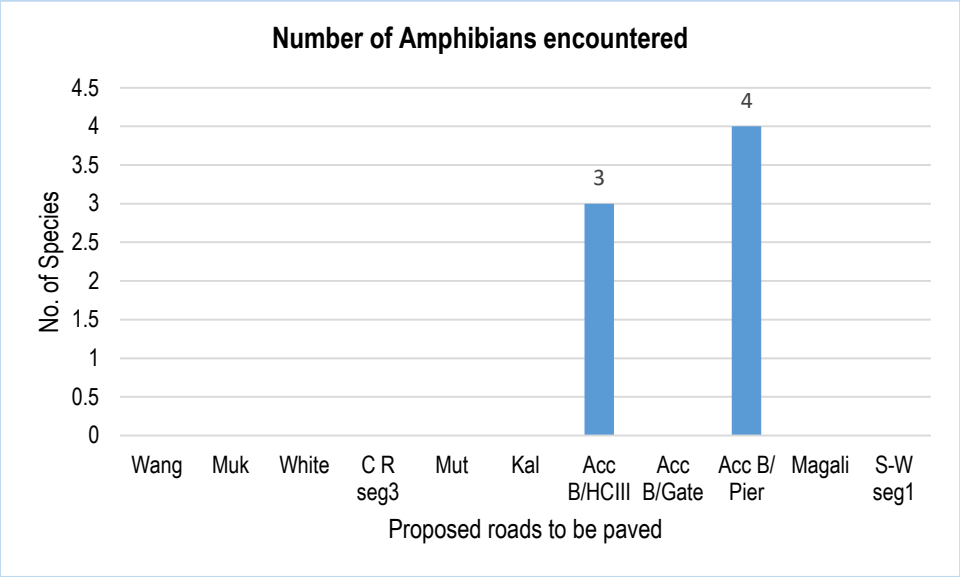


Figure 4-28: Number of Amphibian species encountered along each road

Key to Figure 4-28: Wangalya-Wang; Mukitale-Muk; White –White; Commercial road seg 3-C R seg3; Mutiti-Mut; Kalolo-Kal; Access road to Butiaba HCIII-Acc B/HCIII; Access road to Butiaba landing site gate-Acc B/Gate; Access road to Butiaba landing site pier-Acc B/ Pier; Magali-Magali; Seseko Waibanda seg 1-S-W seg1

d) Mammals

Being that the project areas are mostly within settlements, only animals that are highly adaptive to the ever-changing ecological conditions can manage to survive in such habitats. Hence the limited record of mammals that was restricted to order Muridae (Table 4-22), under small mammals. The habitats within the project area cannot support medium to large sized species.

Table 4-22: Mammalian and their conservation status

Order	Species	Common name	IUCN Conservation status
Muridae	*Aethomys hindei*	Hinde's rock rat	LC
Muridae	*Arvicanthis niloticus*	African grass rat	LC
Muridae	*Lemniscomys striatus*	Stripped grass rat	LC

Muridae	*Mus musculoides*		LC
Muridae	*Lophromys aquilus*	Gray brush furred rat	LC
Muridae	*Mastomys natalensis*	Multimmamate rat	LC
Muridae	*Grammomys dolichuras*	Thicket rat	LC
Muridae	*Pelomys sp*	Swamp rat	LC
Muridae	*Rattus*	Common house roof rat	LC

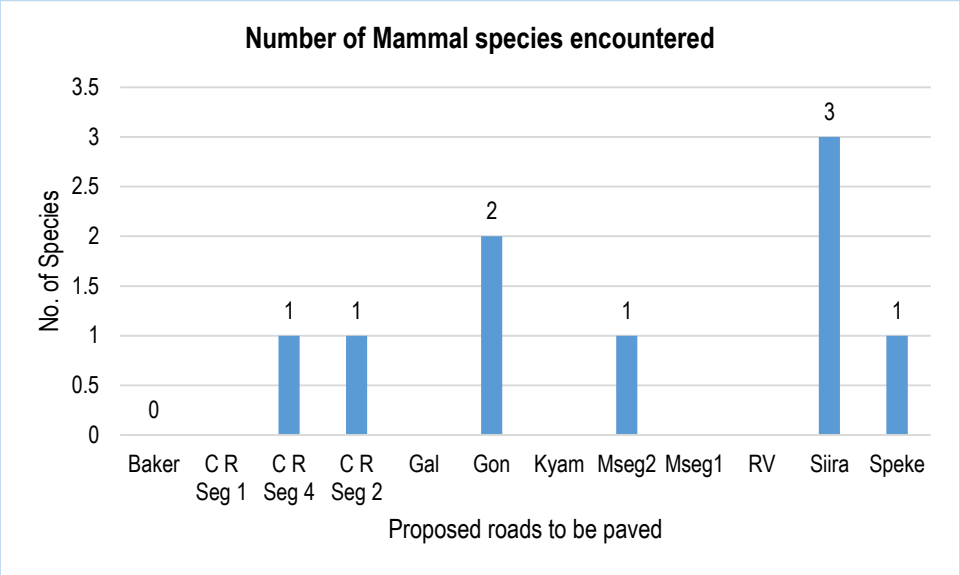


Figure 4-29: Number of Mammal species encountered along each road

Key to Figure 4-29; Baker-Baker; Commercial road Seg 1-C R Seg 1; Commercial road Seg 4-C R Seg 4; Commercial road Seg 2-C R Seg 2; Galende-Gal; Gongo-Gon; Kyamurwa-Kyam; Muhoojo Seg 2-Mseg2; Muhoojo Seg 1-Mseg1; Rift Valley-RV; Siira-Siira; Speke –Speke

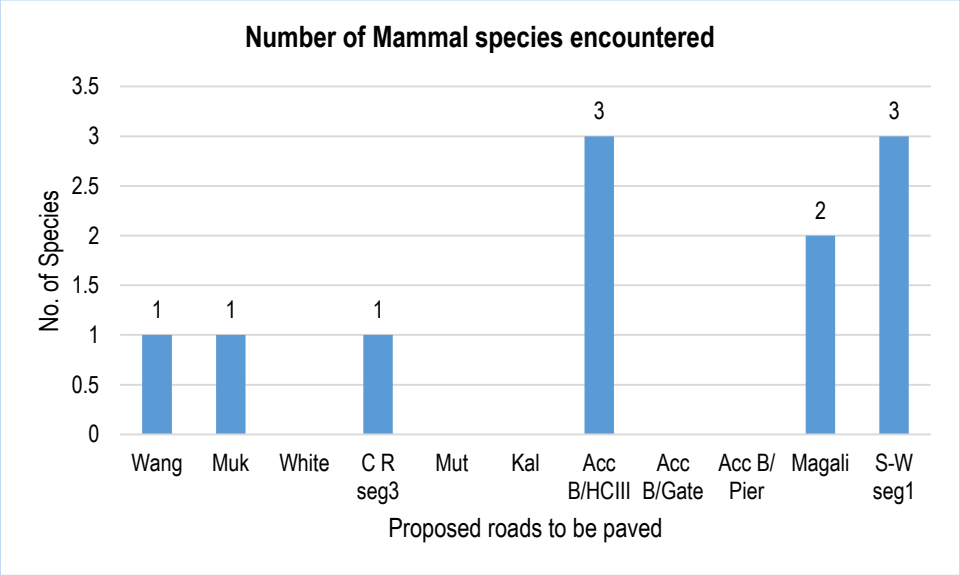


Figure 4-30: Number of mammal species encountered along each road

Key to Figure 4-30: Wangalya-Wang; Mukitale-Muk; White –White; Commercial road seg 3-C R seg3; Mutiti-Mut; Kalolo-Kal; Access road to Butiaba HCIII-Acc B/HCIII; Access road to Butiaba landing site gate-Acc B/Gate; Access road to Butiaba landing site pier-Acc B/ Pier; Magali-Magali; Seseko Waibanda seg 1-S-W seg1

e) Birds

There was a total of 131 bird species, as provided in (Appendix V). None of these were in the threatened categories at national and global level. However, their habitats particularly trees along the project areas are critical for protection, to avoid, or minimize destructive practices to the species. The implication here, is that during construction, avoidance of unnecessary clearance of trees, or vegetation in general should be limited to only construction areas, within the right of way (RoW). But on the other hand because birds are mobile and swift in detecting any foreign objects or activities within their surroundings, they are able to translocate to safer areas quickly, which minimizes risks of impacting on their lives.

Along the various roads, species occurrences are indicated as shown in Figure 4-31 and Figure 4-32, with limited variations in numbers because of the homogeneity of the habitats, and ecosystem in general.

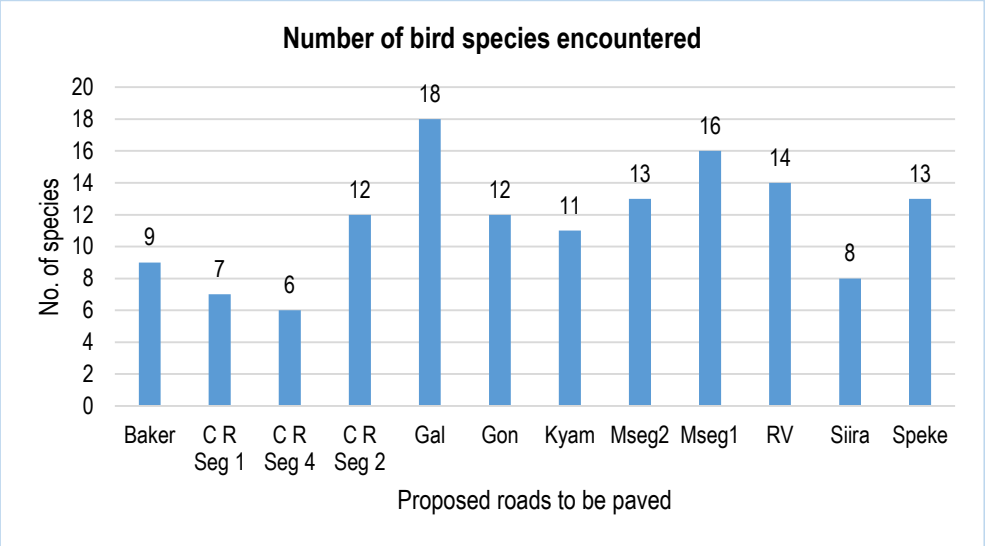


Figure 4-31: Number of bird species encountered along each road

Key to Figure 4-31: Baker-Baker; Commercial road Seg 1-C R Seg 1; Commercial road Seg 4-C R Seg 4; Commercial road Seg 2-C R Seg 2; Galende-Gal; Gongo-Gon; Kyamurwa-Kyam; Muhoojo Seg 2-Mseg2; Muhoojo Seg 1-Mseg1; Rift Valley-RV; Siira-Siira; Speke –Speke

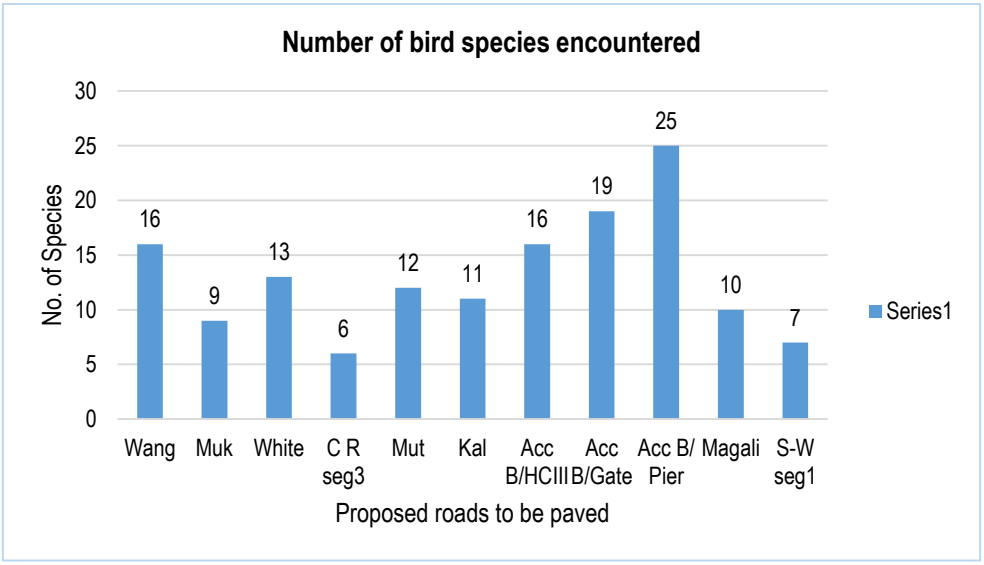


Figure 4-32: Number of bird species encountered along each road

Key to Figure 4-32: Wangalya-Wang; Mukitale-Muk; White –White; Commercial road seg 3-C R seg3; Mutiti-Mut; Kalolo-Kal; Access road to Butiaba HCIII-Acc B/HCIII; Access road to Butiaba landing site gate-Acc B/Gate; Access road to Butiaba landing site pier-Acc B/ Pier; Magali-Magali; Seseko Waibanda seg 1-S-W seg1

4.2.3 Project impacts

Given the project context, some negative impacts are envisaged to occur as a result of the sources of impacts identified below;

- Site clearances
- Work-sites Restoration
- Waste and hazardous materials management
- Transportation and circulation
- Presence of workers

Table 4-23: Project impacts

Potential Adverse Impact	Significance	Mitigation
Habitat loss Either through clearing, destruction or modification of remaining natural vegetation. Resulting in reduction in diversity and abundance of species found in the immediate vicinity by way of direct destruction or displacement.	Can be high in periods of intense project activity, causing permanent distortion in natural habitat	Minimise vegetation clearing in natural habitat If this cannot be avoided, then restoration of areas not needed for permanent project activities will be required Minimise human presence in natural habitat
Invasive species Can be introduced either by workers or machinery Resulting into death of native species, reducing floral diversity and hence food for herbivores both wild and domestic	Can be very high during construction phase when there is a high influx of people and machinery	Sensitize workers about the dangers of ferrying invasive plant species Deliberately eliminate invasive plant species found in and around project area
Damage to wildlife Either through disturbance or destruction of habitat, direct injury or killing of individuals (adults or juveniles), resulting in deaths/injury or displacement/migration with ultimate changes in species composition in the area.	Can be low, given the very low presence of fauna diversity in the project area, particularly the terrestrial species	Scare away all wildlife before start of vegetation clearance or earth works Minimise vegetation clearing Fence off construction areas Minimise night work Educate on site project workers on appropriate behaviour, such as obeying speed limits, avoiding nesting areas etc.
Pollution Either through discharge of chemicals, objectionable odours, littering or noise related to construction works. This can result into distortion of species orientation (e.g. noise disrupts communication and may shift hearing thresholds), migration, dispersion patterns, or even death.	Can be very high during periods of intense project activity	Machinery should be well serviced and in good working order Proper storage facilities especially for fuel Minimise discharge of chemicals in the environment Educate onsite project workers on appropriate behaviour such as not to litter, deliberately kill, injure or handle animals.

4.3 Socio-economic environment

4.3.1 Administrative structure in project area

Buliisa District is subdivided into one county, six Sub-counties (Biiso and Kihungya in upper Buliisa and Buliisa, Butiaba, Kigwera and Ngwedo sub-counties in lower Buliisa) and 2 Town Councils (Buliisa and Butiaba)

The roads proposed for upgrading are located in Buliisa Town Council (14 roads) and Butiaba Town Council (4 roads). Table 4-24 presents the Parishes/wards and villages/cells traversed by the project roads.

Table 4-24: Administrative units traversed by the project roads

ROAD NAME	CODE	LENGTH (KM)	TOWN COUNCIL	PARISH/WARD	VILLAGES /CELLS
Gongo	C1	1.29	Buliisa Town Council	Central	Kizongi Civic
Commercial	C2	0.88		Central	Kizongi Civic
Muhoojo	C3	1.68		Western Central	Kityanga Civic
Speke	C4	0.43		Eastern	Kizikya
White	C5	0.82		Eastern	Nyapea Kizikya
Galende	C6	0.63		Eastern	Nyapea
Mukitale	C8	0.74		Eastern	Nyapea
Kalolo	C9	0.50		Western Central	Kityanga Civic
Kyamurwa	C10	0.47		Eastern Central	Nyapea Civic
Mutiti	C11	0.32		Eastern Western	Nyapea Kityanga
Rift Valley	C12	0.23		Western Eastern	Kitahura Kizikya
Siira	C13	0.54		Western	Kitahura Kityanga
Baker	C14	0.50		Western Eastern	Kitahura Kizikya
Wangalia	C15	0.60		Eastern Central	Nyapea Kizongi
Magali	C16	0.75	Butiaba Town Council	Piida	Kekeya Piida A
Access to the Marine & Butiaba Fish	C17	0.22		Piida	Booma
Part of Sseseko - Kawaibanda	C18	0.79		Piida	Kekeya Kaweibanda
Access to Health Centre	C19	0.24		Piida	

4.3.2 Population distribution and ethnicity

According to the 2014 NHPC by UBOS, the population of Buliisa District is 113,161 persons (57,801 male and 55,360 female). The average household size is 5.3 people which is higher than the national figure of 4.2. Butiaba Town Council has the highest population of 29,214 people whereas Buliisa Town Council has the least population of 7,677 people. The growth rate is 4.9% which is relatively higher than the national average of 3%. The population density of Buliisa district increased from 25 persons per square kilometre in 2002 to 36 persons per square kilometre in 2014 (Buliisa DEAP 2017/18-209/2020).

Table 4-25: Population distribution by Subcounty

Sub-county	Male	Female	Total	Sex Ratio*	Land Area (Sq. Km)	Population Density**
Biiso	8,066	8,312	16,378	97.0	290.7	56
Buliisa	8,461	8,677	17,138	97.5	375.4	46
Buliisa Town Council	3,703	3,535	7,238	104.8	33.3	217
Butiaba	16,366	12,545	28,911	130.5	182.7	158
Kigwera	6,871	6,757	13,628	101.7	50.4	270
Kihungya	5,915	6,481	12,396	91.3	64.8	191
Ngwedo	8,419	9,053	17,472	93.0	113.5	154
District	**57,801**	**55,360**	**113,161**	**104.4**	**1,110.8**	**102**

Source: UBOS 2014

From the available population statics, the roads to be upgraded transverse 2 Town councils; Butiaba and Buliisa. with an overall population of 34105 (19016 Male and 15089 Female) as summarised in Table 4-26.

Table 4-26: Population traversed by the project roads

Sub county	Parish	Population Size by Parish			
		Male	Female	Sex Ratio	Total
Buliisa Town Council	Central	478	413	115.7	891
	Eastern	876	851	102.9	1727
	Western	1296	1280	101.3	2576
Butiaba	Booma	5442	1490	365.2	6932
	Bugoigo	3221	3143	102.5	6364
	Piida	3357	3321	101.1	6678
	Walukuba	4346	4591	94.7	8937

4.3.3 Religion

In Butiaba Town Council, Majority of the respondents were Catholics (42.7%) followed by Protestants (35.1%) and Pentecostal (10.3%), Muslims (8.0%), Seventh Day Adventist (2.7%) while 2.7% belonged to other religious sects such as Orthodox. Protestants dominated in Buliisa Town Council (51.3%), followed by catholic (33.5%) as shown in

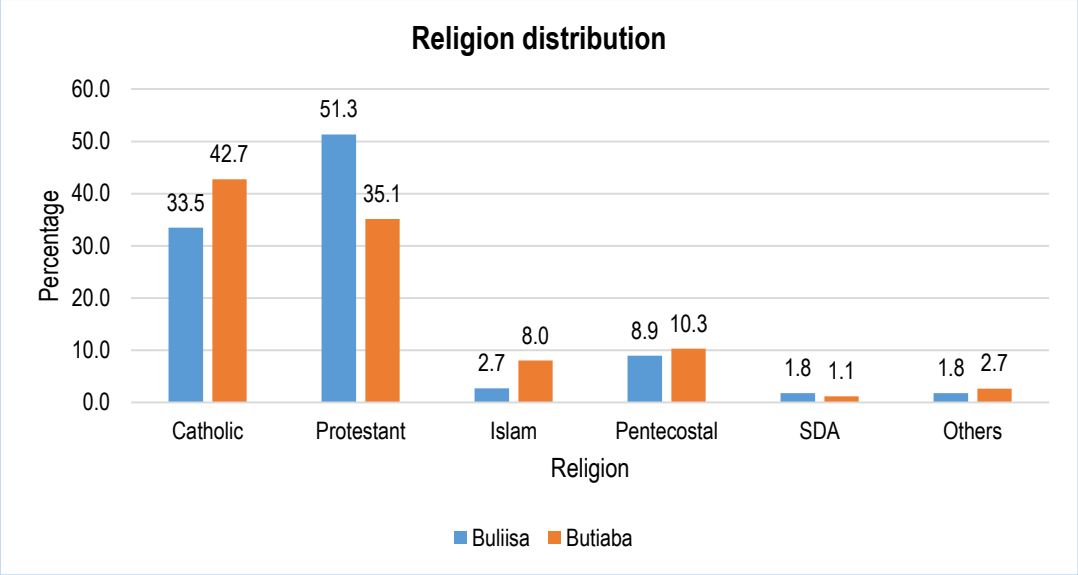


Figure 4-33: Religion distribution by subcounty

There are a number of churches in Katanga and Bugana-Kichoke e.g Fellowship Church, Full Gospel Church, Mugole Wa Yesu (Pentecostal) and St Stephen Church of Uganda (Protestant). Mosques were also identified in Bugana-Kichoke, Katanga, Kitahura cell, Kisomere, Ngwedo and Butiaba.

Figure 4-34: Buliisa Town catholic church along Galende road

Figure 4-35: Buliisa Town Mosque along Kalolo road

Table 4-27: Worship centres along the project roads

No.	Road	Name of worship centre	Offset
1	Gongo	Buliisa town church	100 m
2	Galende	Buliisa town catholic church	80 m
3	Kalolo	Buliisa town mosque	50 m
4	Mutiti	Itambiro church	100 m
		Pentecostal church	50 m

During construction activities, access should be provided to these worship centres to avoid disruption of worshipping. Alternatively, the contractor target non-worshiping days to work on these sections.

These places of worship gather a number of people and were significant in information dissemination about ESIA studies especially community consultations. These will thus be fundamental in relaying project information throughout all the phases. Also, days of worship are important to note to enable planning for activities to minimise disruption during such days.

4.3.4 Education

Educational attainment is an important indicator of the society's stock of human capital and level of socioeconomic development and refers to the highest level of education that an individual has completed.

According to the 2014 NHPC, Educational attainment in Buliisa District is low; of the population aged 15 years and above 25% have never been to school, 55% have only achieved primary school completion and 20% have achieved secondary education and above.
Table 4-28 shows education attainment in Butiaba and Buliisa Town council.

Table 4-28: Education attainment

Sub-county/Town council	Never been to School	Primary	Secondary and above	Total
Buliisa	684	1,860	1,073	3,617
Butiaba	3,511	7,670	2,448	13,629

Source: UBOS 2014

During the household survey, household members were asked to report on their highest level of class/grade completed for those in and out of school and findings are commensurate with those of the 2014 NHPC, as shown in Figure 4-36.

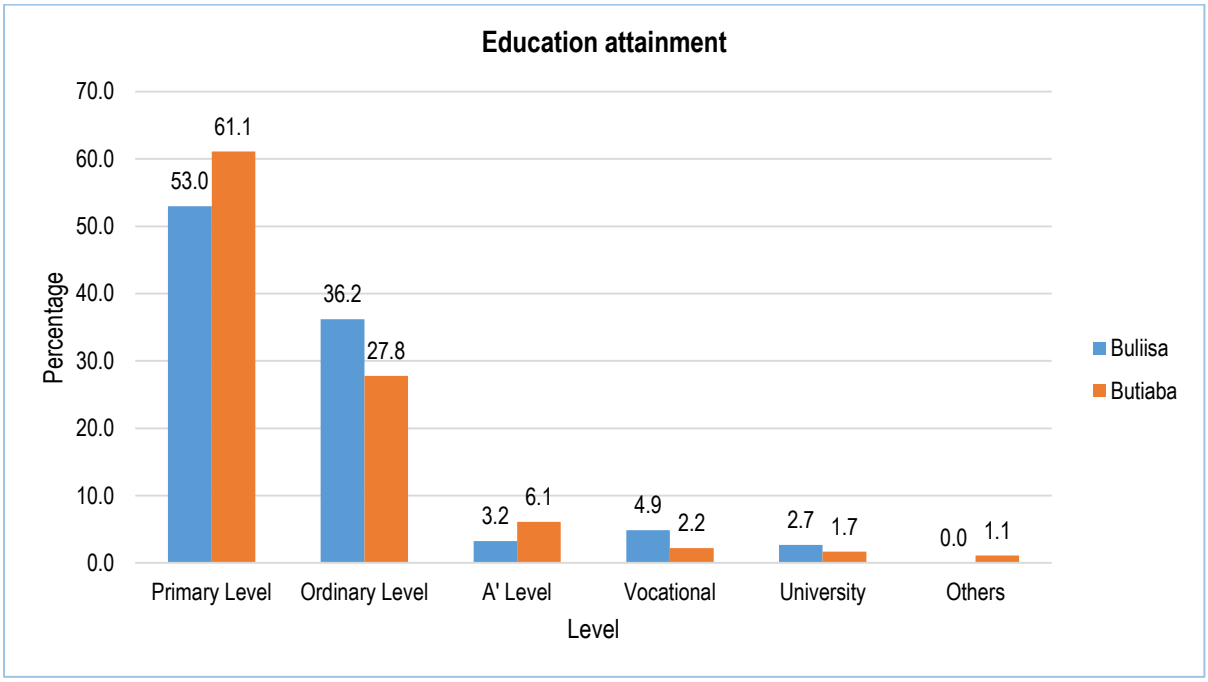


Figure 4-36: Level of education among respondents

Table 4-29: Schools along project roads

No.	Road	Name of school	Offset
1	White	Uganda Martyrs' primary school	500 m
		Uganda Martyrs' comprehensive secondary school	500 m
3	Commercial	Divine Secondary School	200 m
4	Kalolo	Buliisa primary school	50 m

Impacts of the project on these schools have been discussed under subsection 8.2.10 and 8.2.16 and appropriate mitigation measures proposed.

Other education characteristics are presented in Table 4-30 below.

Table 4-30: Education characteristics of Buliisa and Butiaba Town Council

Sub-county	Current Schooling status (6-12 years)		Current Schooling status (6-12 years)				Literacy status (18 +years)	
	Attending School	Not attending	Never been to School	Primary	Secondary and above	Total	Literate	Not Literate
Buliisa Town Council	1,304	196	684	1,860	1,073	3,617	1,963	1,228
Butiaba	3,532	870	3,511	7,670	2,448	13,629	6,998	5,119

Source; UB OS 2014

4.3.5 Ethnic groups

From the socio-economic household survey, out of the 480 respondents that mentioned their tribe, 277 (57.8%) were Bagungu (12) in Buliisa TC and 148 in Butiaba TC), 139 (29%) were Alur (70 in Buliisa TC and 69 in Butiaba TC), 28 (5.8%) were Banyoro (12 in Buliisa TC and 16 in Butiaba TC) and other tribes as shown in Figure 4-37.

During a KII with the LC1 chairperson of Nyapea, he mentioned that in the recent times, Bagungu have given preference during job recruitment and that the community feels that Alur are discriminated against, hence only a few Alur graduates are working in Buliisa and have thus resorted to seeking employment in other areas of the country leaving their homes underdeveloped. He also mentioned that during the national registration exercise for National IDs, the process was made longer for the Alur since they are usually referred to as refugees in the area.

This tribal tension could be increased during the project if equal opportunities are not availed to the population in Buliisa during job placements, local suppliers and in awarding subcontractors. The contractor should thus implement transparent and non-discrimination procedures, involving local leaders, in the recruitment of workers and hiring local subcontractors and suppliers.

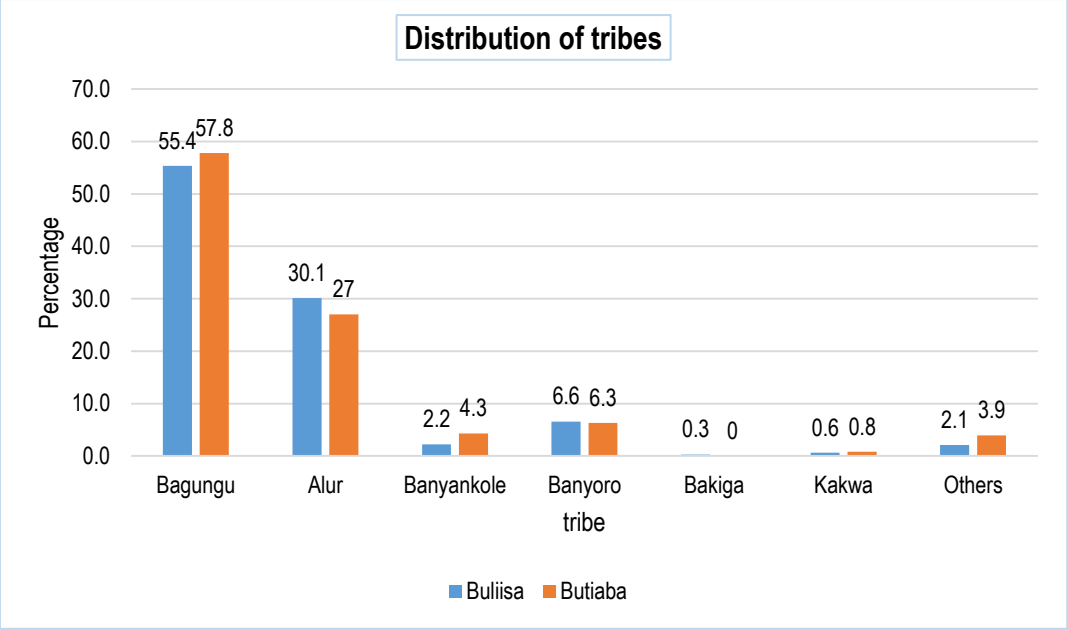


Figure 4-37: Household distribution by tribe

4.3.6 Migration Profile and Drivers in Buliisa District

Migration is one of the three components of population change, complementing fertility (births) and mortality (deaths) and can either be internal or international.

a) Migration drivers

Inward Migration

Migration in Buliisa District is primarily driven by economic opportunity. Over the past few decades, the fisheries in the district have become almost fully dependent on migrant workers for low-cost labour. This is the primary pull factor for migrants, in particular those from the DRC, the great majority of whom come from economically marginalized parts of DRC's Province Orientale, where unemployment rates are reported to be even higher than in rural Uganda. Most migrants arriving from the DRC are already involved in fisheries on the Congolese side of Lake Albert, and are therefore familiar with locally effective fishing techniques. Lake Albert is a de facto open-access resource for migrants and local residents alike, and fishing—unlike agriculture—does not require significant initial investments, making it a livelihood strategy well suited to economically marginalized groups such as new migrants (International Institute for Sustainable Development -IISD, 2015)

Secondary pull factors also contribute to driving migration into Buliisa District and these include Joining friends and family who have moved to Buliisa District in the past, Political instability and armed conflicts in the DRC and increases in the market value of fish. During community consultation, it was also pointed out that a number of people have of recent migrated into the area for business opportunities related to oil and gas prospecting.

Based on data from the May 2012 National Fisheries Resources Research Institute (NaFIRRI) Frame Survey of Lake Albert, it is possible to make crude quantitative estimates of the numbers of migrants who have come to Buliisa District over the past two decades, which corresponds to the period over which migration began to have a serious impact on the case study area. The data indicate that the number of fishing crafts recorded on the Ugandan section of Lake Albert rose from 1,971 in 1991 to 5,766 in 2007

and finally 6,188 in 2012. 1,919 of these boats were in Buliisa District. While this more than threefold increase in the number of fishing vessels over two decades cannot be attributed to migration alone, the ongoing influx of migrants has certainly played a major role (NaFIRRI, 2012).

Outward migration

i. Discussions with local residents revealed that the diversity of livelihood sources gives way to seasonal migrations of populations within Buliisa District: during the cultivating season. Communities from Kigwera sub-county, especially women, settle in eastern Buliisa district to take care of their crops. In the fishing season, men commute to the lake shore on a daily basis, or occasionally spend several nights in one of the landing sites. These migrations strongly shape the social life and organisation of communities in the study area.
ii. Environmentally, it is believed that the impacts of climate change and loss of environmental services from forests and wetlands are likely to affect food security and increase poverty levels in the region; one of the consequences is a wave of out-migration as people become "climate refugees".
iii. During FGDs, members mentioned that weather is another influence of migration in the area; during dry seasons, people tend to move from the hot areas towards the lake. Dry seasons are also accompanied by water scarcity, a big challenge in the project area for especially the pastoralists who migrate for weeks to months in search of water for their animals and domestic use.

It is anticipated that the project will lead to migration of people from other parts of the district and the country at large in search for job opportunities on the construction project, some of which may choose to stay after the project. To avoid unselective influx of people in search for jobs the contractor should display notices and advertise the available jobs and business opportunities through the media to give the interested persons direction. In addition, to enhance integration into the community, workers from other parts of the district and the region should be registered with the local authority (LC1).

4.3.7 Gender Roles

Roles and tasks at the household level are strongly gendered (Table 4-31). Women take on lot of responsibilities, assuming most of the household daily tasks while men's tasks are often perceived by women as being limited to the provision of "sauce". Men have more activities outside the household's life than women, in particular through an active social life with other men at the trading centres.

The organization of women daily activities is strongly influenced by seasonality and their place of residence. Women living in villages along the shore are mainly involved in fish processing (salting, smoking, drying) and selling activities. Table below reveals findings of the household survey in regards to gender roles

Table 4-31: Household roles by gender

Role	Adult male (%)		Adult Female (%)		Young male (%)		Young female (%)		All household members (%)	
	Buliisa	Butiaba	Buliisa	Butiaba	Buliisa	Butiaba	Buliisa	Butiaba	Buliisa	Butiaba
Cultivation	29.9	25.0	14.2	18.8	17.3	11.5	2.4	1.1	36.2	43.8
Harvesting	22.3	19.6	12.3	22.8	21.5	16.3	7.7	5.4	35.4	35.9
Fishing	92.1	97.5	1.0	1.7	6.6	8.4	0.0	0.0	0.0	0.0

Firewood collection	10.8	10.4	42.3	45.8	21.6	18.2	14.4	16.7	10.8	8.9
Water collection	13.1	16.7	28.6	36.3	29.1	24.1	14.6	15.3	14.6	7.4
Building House	94.5	95.0	4.6	3.7	0.5	1.4	0.0	0.0	0.0	0.0
Purchasing HH Items	92.6	91.8	6.9	7.7	0.5	0.5	0.0	0.0	0.0	0.0
Paying for health	93.6	92.7	6.0	6.9	0.5	0.4	0.0	0.0	0.0	0.0
Paying for school fees	94.0	91.7	5.6	7.0	0.5	0.9	0.0	0.4	0.0	0.0

Findings of the socioeconomic survey showed that the responsibility to cultivate and harvest falls on every member of the household, especially adult males and female. Women in the area are not directly engaged in fishing activities on the lake but rather are responsible for fish preservation e.g smoking, salting and sun drying. During the study, many young females were observed preparing fish for preservation whereas young males were engaged in making fishing nets at the landing sites. Major expenses in a home e.g paying for health, school fees and purchase of household items are majorly a responsibility of the adult males. Females are responsible for firewood collection and fetching water.

During the rainy season (from March to May) agricultural activity is more intense: while women from crop farming area go the crop fields near their houses, they still assume the chores. Those from other areas (from the lake shore up to the border between Ngwedo sub county in the northern part of Buliisa district, and from lake shore up to Kijumbya and the eastern part of Bugana-Kichoke and Bugana-Kataleba in the southern part) who temporarily migrate to Ngwedo sub county stays a few weeks away from the household: in the meantime, husbands or female relatives take care of the children.

During the dry season, farming activities are less time consuming, but women spend more time fetching water (further distance to walk to access water sources and long queuing time at boreholes)
Although Money management schemes vary from one household to another, men reportedly dominate finance decision making. The gender imbalance in decision-making is even more pronounced for important investments such as land, livestock, building material for the house etc. for which men take most, if not all decisions.

Women are responsible for small expenses including food, household supplies, paraffin, soap and clothing and although men are expected to pay for school fees and health care, Women often complain that men spend a lot of money on alcohol and fail to provide for the family.

Gender mainstreaming in the project will promote inclusion of women in construction activities. During recruitment of workers and hiring local suppliers and subcontractors, the contractor will implement an equal opportunities policy to ensure that women and men have equal access to these opportunities and that selection is not based on gender but rather qualification, skills and capabilities of an individual.

To achieve this, the contractor will;

i. Announcement notices of equal employment opportunities are posted in visible and popular places in the local communities and that such notices also reach women and youth leaders.
ii. The construction contractor will involve local leaders in recruitment process to ensure full and fair participation of community members
iii. The contractor shall provide gender sensitive sanitary facilities that offer maximum privacy at all sites
iv. The contractor shall provide separate rooms at the campsite for lactating mothers.

v. The contractor shall adopt flexible working workers to take into consideration the other roles of women
vi. The contractor shall make equal payment to men and women for the same work

Implementation of the above measures will lead to income of income for women and thus will enable them contribute to more household expenditures for example paying school fees and paying for health care among others.


Figure 4-38: Young female salting fish in Kaweibanda village


Figure 4-39: Adult female fetching water in Kekeya, Piida


Figure 4-40: Adult males preparing nets for fishing at Butiaba Landing site


Figure 4-41: Adult female taking harvest to the market in Kilyango Village in Ngwedo

4.3.8 Social cohesion

A. Alcoholism and domestic violence

According to a report by WHO 2014, it is estimated that the per capita consumption of alcohol in Uganda is 9.8 litres, making the country the highest consumer of alcohol per capita in the East Africa region. A new Alcohol Control Bill was drafted in 2016; a move that was considered by many as ground – breaking because since 1962 when the first Alcohol law was drafted and passed into law as the British colonialists were existing in Uganda, nothing on this scale has been done in the country to control alcohol use, despite reports on the high usage. During the survey, it was established through direct observations and FGDs that alcohol usage in the project area is very high. Both men and women consume alcohol but men are more common in public drinking places and it is recognized that men, especially the youths, are heavier drinkers.

A number of factors were reported to contribute to alcohol and drug abuse in the area and these include unemployment, poverty, domestic violence and peer pressure among others. This drug abuse has however led to a number of consequences in society, including the following;

- Increase in crime rate
- The addiction has led some people to selling off property to afford another bottle;
- Lower productivity (for instance in crop fields) and absenteeism from work;

- Increase in spread of HIV/AIDS and other STIs; and
- Rise in domestic violence under the influence of alcohol.

B. Commercial sex

Although the practise is illegal, prostitution has remained a common social evil freely practised in many parts of the county. Due to poverty and lack of other opportunities many turn to this activity to provide for their children. In Buliisa District, commercial sex is present and is mainly practised in Villages and towns along the shores or more populated trading centres and landing sites.

A Key Informant Interview (KII) with the CDO of Butiaba Town Council revealed that these sex workers are native residents but many others come to the landing sites from DRC and neighbouring districts such as Hoima, Masindi and Pakwach. Commercial sex work is generally practiced in particular bars or hotels in these areas. These however face stigmatization within the community and are threatened by physical and sexual violence, theft, and health risks.

Consultations with communities also revealed that the ongoing construction projects in the area also contribute to the rise in commercial sex activities the workers travel or migrate for work without their families; provide most of the demand for commercial sex and are likely to engage in risky behaviours such as unprotected sex with casual partners and sex workers since they usually earn disposable income.

Influx of people into the Town Councils seeking jobs, coupled to the workforce from ongoing projects could potentially give rise to the activity, especially considering that there is a night club along Muhoojo road. The contractor shall therefore implement strict code of conduct to control worker's behaviour and interaction in the community. These shall include continuous sensitization of the workers and the community on the dangers of HIV/AIDS, cooperation with Buliisa District police station and local authorities to identify and penalise workers involved in such activities among others.

C. Domestic Violence

Domestic violence was reported to exist in communities within the project area. During FGDs with women, it was established that alcohol and drug abuse was the leading cause of domestic violence. During harvest times, cases of domestic violence are reported to increase; this is because as much as the women are more involved in the cultivation, men take most of the money at harvest time.

Domestic violence is categorised as physical, mental and economic violence. The main causes of domestic violence are perceived to be polygamy, infidelity, poverty, early marriage and alcohol abuse. Child and Family Protection Units at district level police stations deal with cases of domestic violence.

Table 4-32 and Appendix XV shows domestic violence cases reported in the district in 2018 and 2019.

Table 4-32: Domestic violence cases reported in 2018 and 2019

Category	Year 2019			Year 2018		
	Male	Female	Total	Male	Female	Total
Rape	0	08 (a)	08	02 (b)	0	02
Assault	58 (b)		58	0	26 (a)	26
Other forms	82 (b)		82	0	99 (a)	99

Source: Buliisa Police station

a* - Victims
b* - Perpetrators

A KII with an Enrolled Nurse at Biiso Health center III indicated that ignorance of women about their rights is another contributing factor to domestic violence. Some of the cases are never reported due to ignorance and fear, however, with the intervention of various agencies and authorities, this has reduced and women and men are more openly coming out to report these cases. Women representatives have been selected at different administrative levels e.g at the Subcounty level to fight for women rights.
NGOs such as World Vision based in Biiso that, in conjunction with local authorities, conducts continuous sensitization campaigns of the women and children regarding their rights. Lake Albert Children and Women Advocacy and Development Organisation (LACWADO) targeting the Albertine region also undertakes sensitization and empowerment campaigns in the region through community-based approaches.

During consultation, the community pointed out the fact that one of the causes of the domestic violence in homes in the project area is poverty; where the abuser takes out the anger caused by the inability to provide for the family on the partner. The community thus mentioned that provision of job and business opportunities to locals within the project area will empower families to be able to access basic necessities and this will reduce domestic violence. The contractor should, to the extent possible, give priority to the local community when recruiting workers and hiring suppliers.

D. Crime

Crime rates in the project area are higher around fish landing sites and in commercial centres and usually increase during festive seasons. In Butiaba near the landing sites, the most reported crimes are theft of fishing equipment and boats, child labour in construction activities in Buliisa and at fish landing sites especially making of fishing nets, domestic violence land related crimes are also common in both areas. KIIs with the Community Development Officer of Butiaba Town Council (Mr. Alituha Fredrick) and members of the informal "Butiaba landing site management committee" revealed that the Congo culture has greatly influenced defilement at landing sites since to them it is no crime to marry girls below the age of 18.

Victims of crime are mainly women and girls and perpetrators are generally youth, apart from crimes related to land disputes, which mainly involve older generations and clan elders.

Table 4-33 and Appendix XV show the criminal cases that were reported in 2018 and 2019.

Table 4-33: Criminal cases reported in 2018 and 2019

Category	Year 2019			Year 2018		
	Male	Female	Total	Male	Female	Total
Theft	56	05	61	110	05	115
Defilement	-	52 (a)	52	-	56 (a)	56
Child neglect	75 (b)	12 (b)	87	72 (b)	-	72
Child in conflict with the law	-	10	10	-	-	16
Child in contact with the law	10	52	62	-	-	56

Source: Buliisa Police station

a* - Victims
b* - Perpetrators

Community consultations revealed that crime is anticipated to increase in the area are a result of influx of people from other areas engaged in construction activities. These come with different behaviour which cannot be identified during the recruitment process. They also pointed out the possibility of the local community disguising as construction workers and committing crime. To control crime during construction

activities, it is important that the contractor hires an independent security system that collaborates with the local security organs, develops and implements security plans that involve local (LC) leaders and police, creates awareness and builds capacity within communities through sensitization and training on community policing among others.

4.3.9 Vulnerability

Vulnerability can be assessed at personal and household level. At personal level, vulnerability is a state of being in which a person is likely to be in a risky situation, suffering significant physical, emotional, or mental harm that may result in his/her human rights not being fulfilled (MoGLSD 2004). Social and physical vulnerability reflect a decreased capacity for a person to cope, especially if the state is sustained or if any additional threats to social well-being and/or physical health are added. Article 32 of the constitution of Uganda states that: "Notwithstanding anything in this Constitution, the State will take affirmative action in favour of groups marginalised on the basis of gender, age, disability or any other reason created by history, tradition or custom, for the purpose of redressing imbalances which exist against them." Government through the Ministry of Gender, Labour and Social Development (MGLSD) is mandated to promote social protection of poor and vulnerable children.

During the survey, vulnerable groups were identified based on information received during widespread consultations with communities and government representatives and the nature of their vulnerability are described below. Within the groups described below there may be overlapping vulnerabilities (e.g. elderly women and disabled).

a) Elderly

Although older persons are generally considered to be too weak to perform productive work and are regarded to be economically dependent on others, they make valuable contribution to society as guardians of traditions and cultural values which are passed on from generation to generation. The elderly are identified as being vulnerable due to their dependence on others for support in cultivating their fields and getting basic needs like food, water and healthcare facilities. The 1995 Constitution of Uganda recognises the rights of older persons and provides the basis for enactment of laws and development of policies that address their concerns. The expression "older persons" refers to those aged 60 years and above.

According to the 2014 NHPC, 3.31% of the population in Buliisa District is over the age of 60.

Findings of the socioeconomic survey showed that 19.8% of the household heads that participated in the survey had at least 1 elderly person in their household. Majority of the households had between 1-3 elderly persons in their family (32 households in Buliisa and 48 households in Butiaba).

Elderly heads may comprise of large families where the head is the elderly patriarch or matriarch, who receives considerable support from older children and grandchildren and may not be defined as vulnerable. However, if circumstances of their household change for example resettlement as a result of development projects, they may be left without support and thus become vulnerable.

During community consultations, it was mentioned that road construction projects usually affect accessibility of elderly persons to social amenities like churches, markets and health centers by blocking access roads. In addition, the community pointed out that most elderly persons often have chronic illnesses and the dust from construction activities may affect their well-being.

The contractor should ensure that while working on sections close to health centers, worship centers and markets, temporary accesses shall be provided. In addition, the contractor should suppress dust by sprinkling of water on dusty roads and installing humps to reduce speed of vehicles.

b) Persons with Disabilities

The disabilities may range from physical, mental or long-term illness. These are vulnerable due to the reduced labour/income producing potential, and require additional resources and support in the care of the disabled person. KIIs with the focal person of Buliisa District Union of Persons with Disabilities (Mr. Mujuni Stephen) and the CDO of Butiaba Town Council (Mr. Alituha Fredrick) revealed that there are physical than mental disabilities in the area. These physical disabilities are partially attributed to diseases such as Polio especially in those whose parents were reluctant to take their children for immunization in early days, accidents and birth deformity.

Epilepsy was also reported to exist in Biiso and was attributed to the Black fly that inhabits areas of Budongo Forest near R. Waaki. However, due to government intervention, the cases were reportedly reducing.

Buliisa District Union of Persons with Disabilities, an organization under the umbrella organization known as BUPACD (Buliisa Parents Association of Children with Disabilities) works in collaboration with other associations such as Uganda Society for Disabled Children in advocating for rights and socioeconomic inclusion of PWDs and empowering them in various aspects. A discussion with the focal person revealed that in partnership, these organizations are implementing a three-year program called Right to Active Parenting (RAP) through 3 major aspects;

i. **Education**; here they offer support to teachers by training them in sign language, sensitizing them on inclusive sanitary facilities at schools, inclusive education of children with disabilities e.g. the blind, modification of school structures to include ramps among others. Schools such as Waiga primary school, Nyeramya P/S in Kihungya and Ndandamire primary school have benefited from the structure modification program.
ii. **Health**; the major challenges in this sector are epilepsy which is rampant in Biiso and Kihungya Subcounties and Cerebral pulse which cuts across all the Subcounties in the district. Interventions by the Associations include organizing parents with these children into groups and training VHTs to guide these parents in exercising with these children. The associations also facilitate a physiotherapist to participate in these exercise meetings which take place once or twice a month. The associations also facilitate psychiatric nurses to conduct epilepsy campaigns at lower level once every month.
iii. **Livelihood**; the associations offer support to parents and children with disabilities by mobilizing them into groups (at the time of the study there were a total of 25 groups) and equip them with skills in projects such as goat rearing, piggery, poultry farming, making liquid soap, mechanics, making energy saving stoves and shoe making among others to help improve on their livelihood.

According to the census conducted in 2014, 20,868 people of the district population aged 2 years and above and 6,730 people of those aged between 2-17 Years are living with disabilities (UBOS 2014). Disability status within the district is presented in Table 4-34 below.

Table 4-34: Disability status within the Project area

Sub county/Town Council	Disability (2 years and above)		Disability (2-17 Years)	
	Has a disability	Has no disability	Has a disability	Has no disability

Buliisa Town Council	971	5,686	236	3,230
Butiaba	3,988	18,495	1,082	9,284

Source: UBOS 2014

Findings of the socioeconomic survey showed that 10.6% of the household heads that participated in the survey had at least 1 person with disability n in their household. Majority of the households had between 1-2 elderly persons in their family (17households in Buliisa and 34 households in Butiaba).

Consultation with community and BUPACD member mentioned that since there are schools and health centres along some of the project roads, blockage of access to these facilities during road construction will potentially impede access by persons with disabilities. In addition, since there are no designated children crossing areas along the roads, over speeding construction vehicles could knock down children with disabilities crossing to and from schools and other facilities.

It is therefore important that during construction, the contractor installs temporary accesses when working on sections close to social facilities. In addition, humps should be installed close to these facilities to control speed thereby preventing accidents.

c) Widows

Most Ugandan societies are patriarchal in nature, which limits the ability of widows in taking control and final decision over the physical and financial resources of the family. The in-laws have always utilised the archaic beliefs and practices to strip all the resource which would have helped the widow to look after the family, leaving her more vulnerable. Hence, Widows usually suffer two common experiences; a loss of social status and reduced economic circumstances.

Findings of the socioeconomic survey indicated that 4.1% of the household heads were widowed (11 in Buliisa and 9 in Butiaba Town councils).

d) Women

Women can be considered vulnerable due to traditional general roles, which place a high burden of household labour on them and exclude them from participating in decision making; lack of land ownership and denial of property and inheritance rights; lower levels of education and lack of awareness about their rights; and vulnerability to sexual and gender-based violence. Women are generally more engaged in agriculture and are therefore more sensitive to land issues. Women are discriminated against in traditional decision making around customary land, which is dominated by male clan elders.

Findings of the socioeconomic survey showed that 32.3% of the respondent were females (79 in Buliisa and 80 in Butiaba Town council).

e) Youths

Within the project area, youth work in a range of jobs including;

- Farming in areas of Ngwedo, Biiso and Kihungya,
- Fishing at Kawaibanda, Bugoigo, Butiaba landing sites among others,
- Seashell collection from L. Albert e.g in Karakaba
- Boda boda riding, motor vehicle repair, petty trading, casual labour, construction work, hairdressing, art and craft and tourism among others.

At the village level, youth expectations are channeled to the LC1 through the youth representative position in every local council.

During community consultations, youth mentioned that they face a major challenge in their access to employment due to their limited professional abilities and scarce job opportunities. Obstacles to create their own business are numerous, such as the lack of capital and the lack of knowledge of enterprise management. The support got from the district and government is very little and when available it does not reach the youth at the lowest level in the village but is rather shared among those in positions of influence.

Youths' expectations from the road construction project are high; in terms of job opportunities, skills development and business opportunities among others.

Employment of youth especially in casual work during project implementation will not only improve their livelihood but will also create a sense of ownership of the project in the community. This will in turn help control crime e.g theft of construction material since they are already benefiting from the project.

f) Orphans

According to the National Strategic Programme Plan on Interventions for Orphans and Other Vulnerable Children for Uganda, an orphan is defined as a child younger than 18 years of age who has lost one or both parents. A child who has lost a mother is a maternal orphan while a child who has lost a father is a paternal orphan. A child who has lost both parents is a double orphan. However, Death of a father has been a major explanatory factor for orphan hood for the different background characteristics compared to death of mother or both parents. According to findings of the Uganda National Household Survey 2016/1711 percent of the children younger than 18 years were orphaned i.e. they have lost one or both parents. 234 children below the age of 8 years have lost both parents (UBOS 2014).
Table 4-35 the status of orphan hood in Buliisa district according to the 2014 NHPC.

Table 4-35: Status of orphan hood in Buliisa district

Sub county/Town council	Orphan hood Status (Below 18 Years)	
	Orphan	Non-Orphan
Biiso	825	8,672
Buliisa	764	9,049
Buliisa Town Council	334	3,697
Butiaba	1,105	11,239
Kigwera	678	6,895
Kihungya	695	6,745
Ngwedo	714	9,327
District	**5,115**	**55,624**

4.3.10 Land tenure

There are four types of tenure recognised in Uganda under the Constitution (Article 246) and the Land Act (Cap 227): customary tenure, freehold, leasehold and mailo. Of these four, Buliisa district is characterised by three land tenure systems; customary, leasehold and freehold. Customary ownership is the predominant system in both Butiaba and Buliisa Town Councils.

Household Survey results revealed that out of 265 respondents in Butiaba Town council who mentioned their land tenure system, 81.1% (215) held land under customary tenure, 12.5% (33) held free hold and 6.4% (17) under leasehold system. In Buliisa Town council, out of the 235 respondents who mentioned their land tenure system, 83.8% (197) held land under customary tenure, 11.1% (26) held free hold and 5.1% (12) under leasehold system.

4.3.11 Access to land

Land in the project area is accessed through a number of ways which include;

- Purchase; This is mainly done on unregistered land since most of it is unregistered customary tenure. As such, sales agreements from this type of transaction are usually not properly documented or formalized and can be contested by other people claiming they have a claim over the land.

- Rental and lease; These are common in the central part of the district and informal oral agreements between land owners and land users are common. Informal land rental is common as households rent fertile land parcels for agriculture. Project developers in the area also acquire land for short term use for temporary construction auxiliary facilities e.g camps and borrow pits.

- Inheritance; It is common in the Project area for people to acquire land through inheritance of family assets passed on to generations from families or clans. Similarly, men are granted parcels of land by their parents upon marriage. Women can also obtain access to land from their husbands upon marriage although these rights are often limited and reversible.

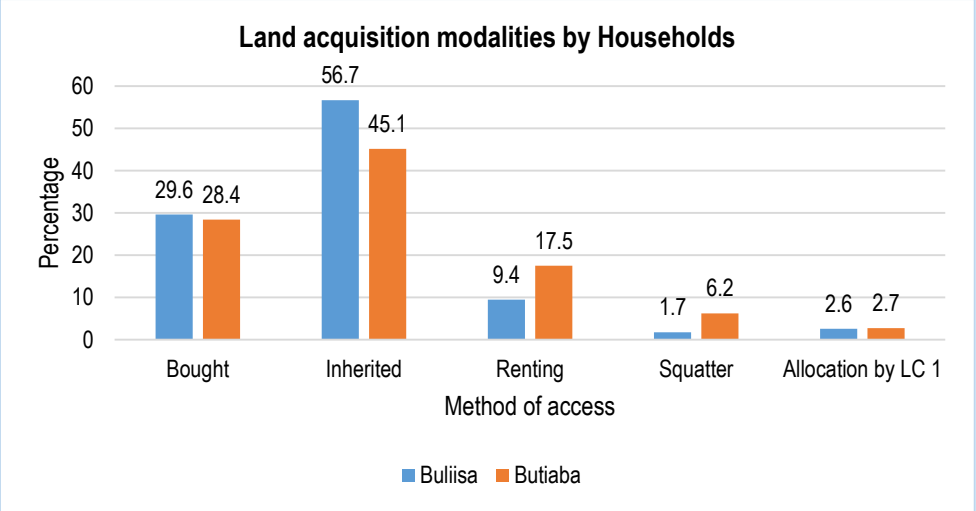


Figure 4-42: Land acquisition modalities by households in the project area

Findings of the socioeconomic survey indicated that majority of the people in both Buliisa and Butiaba inherited the land from their ancestors (56.7% for Buliisa and 45.1% for Butiaba) followed bythose who bought or purchased (29.6% for Buliisa and 28.4% for Butiaba) and those that area renting; and these are more in Butiaba (17.5%) than in Buliisa (9.4%), as shown in Figure 4-42.

4.3.12 Land related conflicts

Customary tenure system is usually associated with conflicts because under this system, the community has control over the land in determining allocation of land for residence, cropping and rights of access to the common property resources. Discussions with Local Council leaders revealed that land related conflicts mainly arise from land grabbing and trespass into crop farming and grazing areas among others.

Conflicts on communal land were traditionally resolved through existing elders' councils of the different clans living in an area. However, this is no longer the position; Local Councils and formal courts are currently addressing most of the conflicts on communal land. The community has a negative perception of the current system because of the high costs involved and corruption fears. Mediation is preferred as the most suitable approach to addressing conflicts on communal land (Byakagaba & Twesigye, 2015)

Petroleum development has led to land speculation in the district which has contributed to land use conflicts and displacements. This challenge has further been exacerbated by the lack of a comprehensive land use plan (Buliisa DEAP 2017/18-2019/20).

4.3.13 Livelihood sources

Livelihood strategies in Buliisa and Butiaba Town Councils are based on subsistence level and are influenced by geographic location (e.g. closeness to the lake or fertile soil conditions), ethnic group (predominantly fishing or farming), and the season (changes in livelihood strategies depending on the dry or wet season). They mainly include fishing, agriculture, livestock rearing and trade activities.

Findings of the survey indicated that in Butiaba Town Council, the predominant livelihood source is fishing (47.9%) since the Town Council is located near L. Albert whereas in Buliisa town council, majority of the respondents reported to depend on crop farming (64.6%).

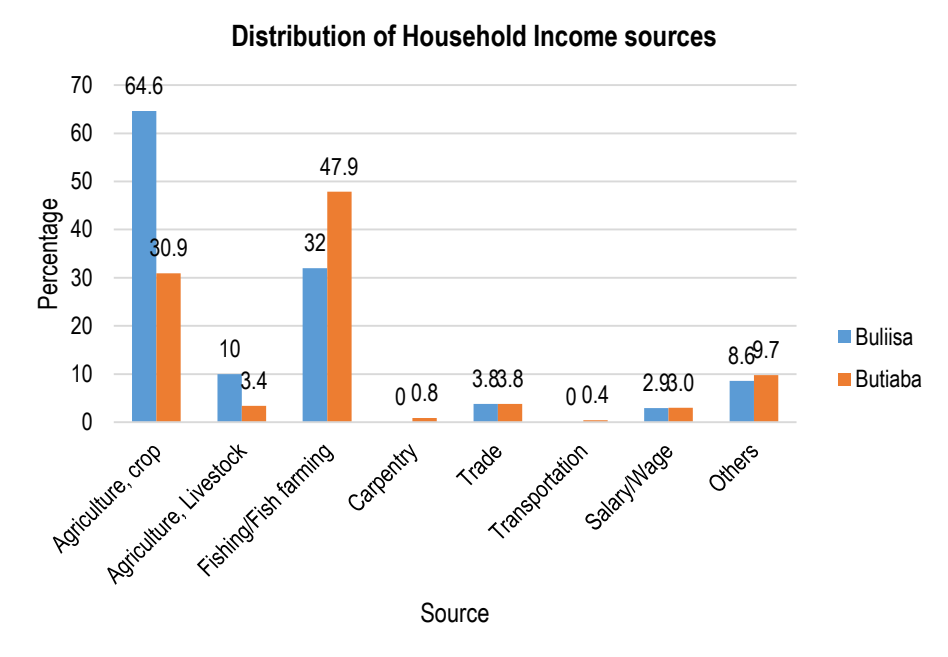


Figure 4-43: Main income sources in Butiaba and Buliisa Town Councils

Figure 4-43 show that households in the Town councils do not only depend on one source of income. Much as those close to the lake in Butiaba predominantly carry out fishing on the lake, they also have gardens and practise crop farming and animal husbandry. Likewise, households Buliisa Town council

that predominantly practise agriculture also engage in fishing at the lake. This livelihood diversification enables the households to cope with challenges that may affect their livelihoods e.g climate change.

The diversity of livelihood sources gives way to seasonal migrations of populations within Buliisa district: during the cultivating season (Table 4-36), communities from Kigwera sub-county, especially women, settle in eastern Buliisa district to take care of their crops. In the fishing season, men commute to the lake shore on a daily basis, or occasionally spend several nights in one of the landing sites. These migrations strongly shape the social life and organisation of communities in the study area.

Table 4-36: Calendar of activities (crop farming, cattle grazing, fishing)

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Crop farming		Land clearing, ploughing and planting			Harvest	Land clearing, ploughing and planting					Harvest	
Fishing	Low fishing		Fair	Best Fishing season		Fair	Low Fishing season			Best Fishing season		
Cattle grazing	Higher mobility		Grazing short mobility					Grazing short mobility			Higher mobility	

I. Crop farming

In the project area, crop farming is mainly practiced in Buliisa and Ngwedo Subcounties (for households in Buliisa Town council) and in areas of Biiso and Kihungya (for households in Butiaba). The major cash crops grown include cotton in Ngwedo and sisal in Butiaba whereas major food crops grown include cassava, maize, sweet potatoes, maize and sorghum among others.

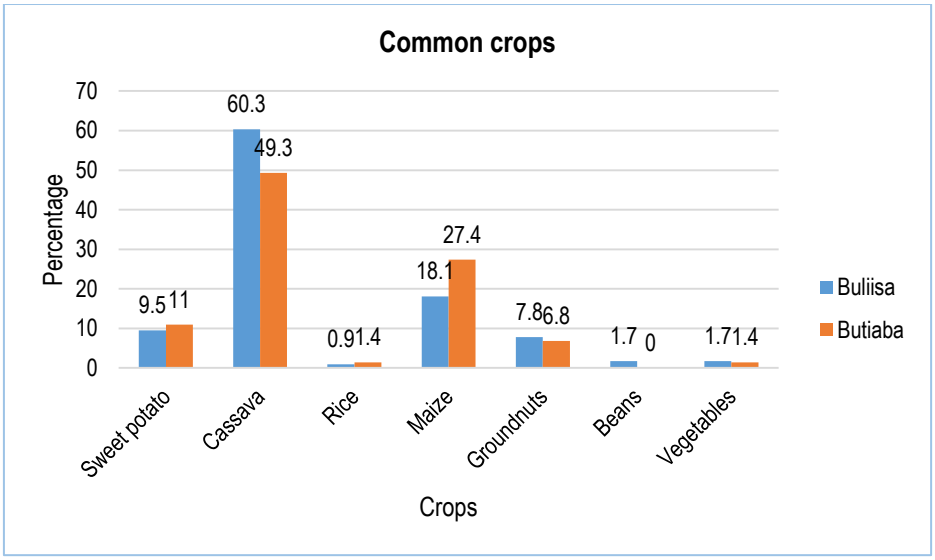


Figure 4-44: Common crops grown in the project area

Cassava is the most common crop and it plays an important role in the diet of local residents and is also used to produce local brews such as nguli or waragi.

Maize is also another common crop grown in the project area. Once harvested, this is either dried, roasted or processed into flour which is then cooked into Posho, Ugali or pancakes, etc. Like cassava, sorghum, millet and maize can be processed into local brews. Due to water constraints in the Buliisa area, rice

growing is limited to wetland areas of Buliisa Subcounty and Kigwera (Wanseko), rice is marginally grown in the study area. When cultivated, crops are located close to swamps and rivers.

Figure 4-45: Cassava growing in Kilyango village Ngwedo

Figure 4-46: Banana growing in Biiso

A number of mechanic grinding mills were observed within the project area and are usually situated along roads within the towns. Mobile grinding machines were also common in the area: often purchased outside the district, for example in Parombo (Nebbi District) and are usually operated by young people who are charged by the owner of the machine to run their business.

Figure 4-47: Grinding mill along Gongo road

Challenges faced in crop farming

Agriculture is known to be the most affected sector from environmental threats due to its dependency to climate factors. Drought as one of the threats seen in the project area affects agricultural production especially since farmers depend on seasonal rains to water their crops.

Majority of the respondents to the socioeconomic survey mentioned that they suffer food shortages in their households especially during months of February and November. During such times, respondents mentioned that they depend on bought food whereas those that cannot afford to buy seek assistance from neighbours and friends.

Other challenges in crop farming include;

i. Human-wildlife conflicts especially in Ngwedo where elephants attack and destroy crops in farms
ii. Poor marketing skills
iii. Price fluctuations
iv. High costs of farming inputs especially seeds
v. Limited credit facilities
vi. Poor access to markets

II. Livestock Rearing

Pastoralism is primarily practiced in the grazing areas below the escarpment, and plays an important role in the local economy. Due to their ability to survive on poor forage and limited water, *Ankole* cattle are generally the preferred breed locally. Due to the presence of vast expanses of rangeland under

community holding, Buliisa Town Council, Butiaba and Kigwera Subcounties are the predominant cattle rearing areas under communal grazing.

Findings of the socioeconomic survey revealed that majority of the households in both Butiaba (44.9%) and Buliisa (48.8%) Town Councils keep poultry. Goat rearing is more common in Buliisa (33.8%) than Butiaba (27.3%) whereas cattle rearing is more common in Butiaba (15.8%) than in Buliisa (13.0%). Other livestock reared in the project area include sheep and pigs as shown in Figure 4-48.

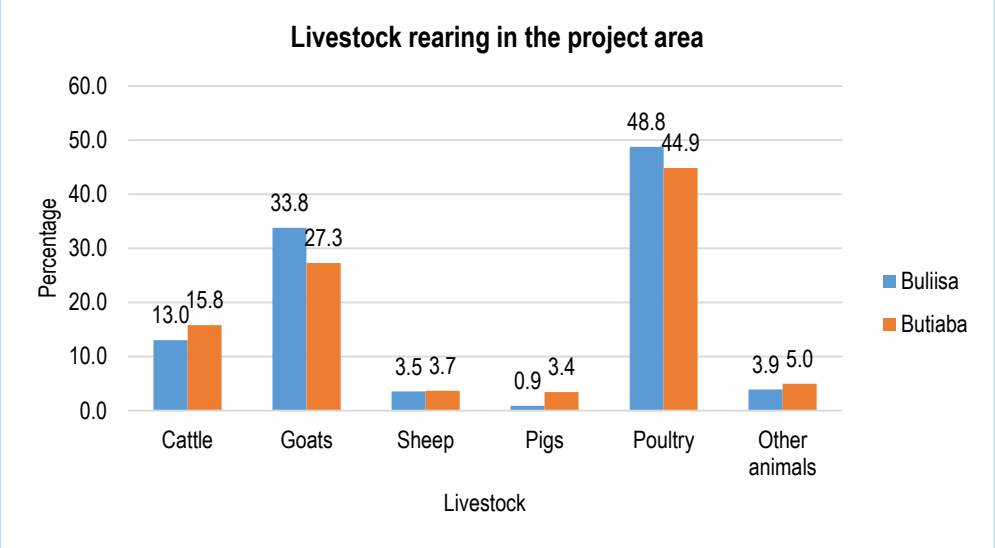


Figure 4-48: Livestock reared in the project area

Auction Market is the biggest livestock in the district that attracts traders from within and outside the district and as far as DRC. It happens every first Tuesday of the month. Although other commodities like food stuffs, clothes, and electronics are sold, livestock is the biggest commodity in this market.

Figure 4-49: Auction market in Kisiabi along Trading Center – Buliisa auction market

Figure 4-50: Watering animals in Auction market – Kakindo – Kilama

Challenges in livestock rearing include;

i. Drought that leaves the animals with no pastures
ii. Limited land for grazing
iii. Low milk productivity of local cattle
iv. Limited processing and storage facilities
v. Diseases e.g African Animal Trypanosomiasis, Fowl pox and Newcastle diseases

III. Fishing

Along the shores of Lake Albert, local livelihoods are mainly dependent on fisheries, with large sections of the population relying on fishing and fish mongering. According to the NaFIRRI Catch Assessment Survey (2012), Lake Albert is currently the second-most productive lake in Uganda after Lake Victoria. There is a total of 14 landing sites on Lake Albert in Buliisa district and these include Butiaba Fish landing site, Bugoigo, Sonsio, Karakaba and Kaweibanada among others. Fish species caught in the lake include; *Oreochromis niloticus* (Tilapia), *Protopterus aethiopicus* (Lung fish), *Alestes baremoze* (Angara), *Lates niloticus* (Nile Perch), *Hydrocynus forskahlii* (Ngasya), *Clarias gariepinus* (Munana) and pelagic species like *Neobola bredoi* (Silver fish – also called Muziri in Alur and Mukene by Bantu speaking people) and *Bracynus nus* (Ragogi) (Buliisa DEAP 2017/18-2019/20).

Findings of the socioeconomic survey revealed that fishing is done by households in both Buliisa and Butiaba Town councils. Since it has a landing site (Butiaba fish landing site), fishing activities are highest in Butiaba (Figure 4-43. Households in Buliisa Town council also engage in fishing at the lake especially during the peak seasons.

Engagements with the informal Landing site management committee of Butiaba Landing site revealed that Fishing activities have two peak seasons (between March to June and August to November), although the activity is generally practised throughout the year; catches are reported to be more abundant during the rainy season. Fishing is generally done once a day, except when the catch is very low, in which case fishermen might fish a second time. The informal "Butiaba landing site committee" revealed that fishermen usually leave in the evening (night fishing) or early morning to cast their nets and wait for the morning after to collect their catch. They usually sleep on their boats.

According to the National Frame Survey conducted on the Ugandan side of Lakes Edward And Albert in 2018 (NaFFRI), the number of landing sites remained fairly stable between 2007 and 2016 but substantially registered a 36% increase in 2018, from 78 to 107. The increase in landing sites is attributed to mainly two factors: an increase in human population particularly of the fisher-folks and the laxity in enforcement of fisheries regulation. Landing sites close to the project area include Bugoigo, Butiaba, Kalolo, Karakaba, Kaweibanda, Magali, Piida, Kabolwa, Walukuba and Wanseko. The total number of fishing crafts on the Uganda portion of Lake Albert including foot fishers and rafts increased by almost 70% from 5,764 in 2007 to 9,871 in 2018 (NaFFRI, 2018).

Table 4-37: Trends in the key indicators of fishing effort on the Uganda portion of Lake Albert for the period 2007 to 2018

Description	**2007**	**2012**	**2016**	**2018**
Fishing crafts				
Congo barque (CB)	5596	6037	8,377	7,605
Dugout (DO)	6	10	2	1
Foot fishers (FF)		18	20	41
Parachutes (PA)	4	151	59	2
Ssese flat at one end (SF)	146	175	202	2,127
School Kabarega (SK)		-		5
Ssese pointed at one end (SP)	11		12	
Rafts (RA)	1			
Total	**5764**	**6216**	**8,672**	**9,781**
Number of fishers	15, 364	15, 424	23,722	27,944
Boats by gears				
Basin	32	33		40
Beach seine	44	22	223	228

Description	2007	2012	2016	2018
Boat seine			94	329
Cast net	81	116	414	354
Gillnet	2192	2616	2026	2,232
Hand line/Hook and line	14	24	52	36
Longlines	1520	527	908	948
Monofilament	196	519	1349	2,123
Others			35	14
Small seine	1632	2303	3412	3,069
Traps	53	56	159	408
Total	**5,764**	**6,216**	**8,672**	**9,781**

Source; National Report of the Frame Survey 2018 on the ugandan side of Lakes Edward and Albert

The 2018 Frame Survey (NaFFRI) recorded 27,944 fishers on the Uganda sector of Lake Albert (Table 4-38). Buliisa district registered the second highest number of fishers (7156, 26%) after Kikuube District (7763, 28%).

Table 4-38: Summary of key indicators of fishing effort on the Ugandan side of Lake Albert in Buliisa district

SN.	Measure of effort	No.
	Fishing crafts	
1.	Congo barque (CB)	2296
2.	Dug out (DO)	-
3.	Foot fishers (FF)	2
4.	Parachutes (PA)	-
5.	Ssese Flat at one end (SF)	242
6.	School Kabarega (SK)	3
	Total	**2543**
7.	Average no. of crafts per landing site	73
8.	Number of fishers	7156
9.	Average no. of fishers per landing site	204
	Mode of Propulsion	
10.	Crafts using Outboard engine	411
11.	Crafts using Paddles	2130
12.	Crafts using Sails	-
13.	Crafts being Towed	-
	Number of fishing crafts by gear	
14.	Perforated basin (PB)	40
15.	Beach seines (BES)	64
16.	Boat seines (BOS)	103
17.	Cast nets (CN)	112
18.	Gillnets (GN)	601
19.	Hand line/Hook & line (HL)	2
20.	Longlines (LL)	218
21.	Monofilaments (MF)	890

SN.	Measure of effort	No.
22.	Others (OT)	
23.	Small seines (SS)	368
24.	Traps (TR)	145
	Total	**2543**

Source; National Report of the Frame Survey 2018 on the ugandan side of Lakes Edward and Albert

Regarding facilities and infrastructure, results of the 2018 Frame Survey (NaFFRI) indicated that there was a 50% improvement in accessibility to landing sites by all-weather roads from 15 in 2014 to 33 in 2018. The 33 landing sites accessible by all-weather roads represent about 30% of the total number of landing sites. Improvement in road infrastructure network is good for the fisheries sector as it improves fish marketing and reduces on the rate of fish spoilage that comes with economic losses. More efforts are however required to improve road networks leading to landing sites to facilitate fish marketing and improve incomes of fisher communities (NaFFRI, 2018).

Table 4-39: Landing site facilities recorded during the 2018 Frame Survey on the Ugandan side of Lake Albert

SN.	Parameters	No.
	Landing sites	
1.	Total number of landing sites	35
2.	**Landing site facilities**	
3.	Landing sites with bandas (Fish shed)	6
4.	Landing sites with working cold rooms	
5.	Landing sites with non-working cold rooms	2
6.	Landing sites with Plantoon/Jetties	1
7.	Landing sites with Fish Stores	7
8.	Landing sites with electricity supply	10
	Accessibility to electricity (km)	
9.	<1	14
10.	1-5	6
11.	6-10	5
12.	>10	
13.	Accessible by roads	29
14.	Landing sites accessible by all-weather roads	20
	Distance to the nearest all-weather road (km)	
15.	<1	2
16.	1-5	1
17.	6-10	2
18.	>10	1
19.	Landing sites with public toilets	7
20.	Landing sites with potable water	15
21.	Landing sites with net repair facilities	31
22.	Number of net repairers	328
23.	Landing sites with boat repair facilities	27
24.	Number of boat repairers	132
25.	Number of landing sites with Fisheries staff residence	
	Landing sites in operation for > 5 Months annually	35

Source; National Report of the Frame Survey 2018 on the ugandan side of Lakes Edward and Albert

Figure 4-51: Fishing boats on Butiaba fish landing site

Figure 4-52: Men preparing their equipment for fishing

Figure 4-53: Youths making fishing nets

Figure 4-54: Net used for fishing Mizuri/Mukene

Regarding fish processing, different techniques were observed to be used during the studies. The most common ones are salting, sun-drying and smoking. It was also observed that fish processing roles mainly fall on females especially the young ones. A KII with the informal "Butiaba landing site committee" also informed that women are not involved in active fishing in the lake but only deal in trading the fish.

Figure 4-55: Girl salting fishing in Kekeya

Figure 4-56: Sun drying Muziri/Mukene in Kekeya village

Figure 4-57: Sun drying Tilapia fish in Piida A village

Apart from fishing, fish-mongering livelihoods are also widespread. Small market stalls are often operated by women, although not exclusively. Similarly, activities related to the drying of fish on wooden racks near the landing sites are carried out by both men and women.

Much as the Beach Management Units were dissolved, fishermen at the various landing sites organized themselves into informal management committees to oversee activities on the landing sites. An FGD held with the committee On Butiaba landing site revealed that most of the fishermen are from local communities but also from Hoima, Masindi, Nebbi and also as far as DRC.

The major market for the fish is Panyimur, Masindi, Arua but also locally in Butiaba Daily market. Discussants also highlighted that reduction in fish population in the lake has consequently reduced the overall fish catch; an issue they attributed to poor fishing methods such as use of unstandardized nets, light bulbs installed at the landing site to attract silver fish yet scaring away other types e.g Tilapia fish.

Another threat faced in fishing activities was unknown people, who, the discussants said, attack fishermen in the lake especially at night raiding their fishing equipment, catch and occasionally killing them. This issue, they said, has been reported to the police and marine who are undertaking investigations.

IV. Other livelihood sources

Besides the activities discussed above, people in the project area engage in other activities, usually on small scale, to earn a living. As illustrated in Figure 4-43, 8.6% and 9.7% of the respondents in Buliisa and Butiaba Town councils respectively engage in other activities. These activities include Sea shell collection, firewood collection, grass harvesting and sand mining. Findings indicated that majority of the respondents (38.9% and 43.5% in Buliisa and Butiaba Town Councils respectively) engaged in other activities in Sea shell collection. Firewood collection is practised more in Buliisa (278) than Butiaba (17.4%) whereas grass harvesting is practised more than Butiaba (26.1%) than in Bulliisa (22.2%), as shown in Figure 4-58.

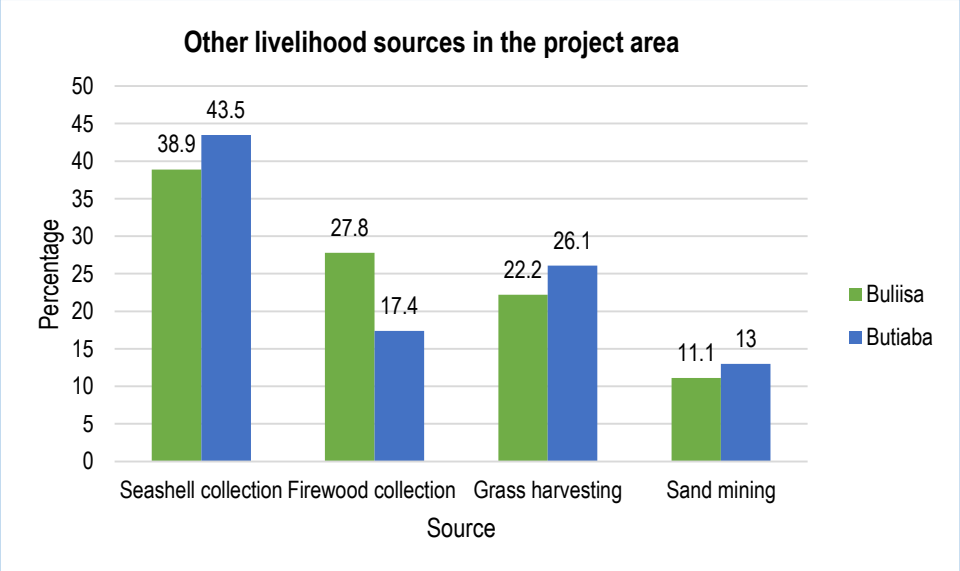


Figure 4-58: Other livelihood sources in the project area

These are discussed below;

- Sea shell collection; this is done on the shores of Lake Albert in areas of Karakaba and Kizongi among others. This activity is mainly done by women who sell the shells to the poultry farmers as chicken feeds. Some women also use the sea shells to make items such as jewellery and spoons which they sell to earn a living. In a discussion held with some seashell collectors, they mentioned that the activity has become quite challenging in the recent time because the lake has receded and so they have to move further in the lake looking for the shells and are as thus exposed to a number of risks such as drowning and diseases e.g Bilharzia.

- Firewood collection; this is mainly done by women far an alternative source of income. Firewood is collected from various sources; a KII with CDO of Butiaba Town Council informed the survey team that the National park management a designated day on which people enter the park and collect firewood from particular areas.

- Grass harvesting; this a major income supplementary activity in the project area that is done by all members of the household. Grass is harvested from especially rangelands where the common types; "abi" and "spear" usually grow in December and July respectively.

- Sand mining; this is carried out on the shores of Lake Albert by especially the men. These come from different parts of the district and neighbouring areas since sand sources in the district are limited.

Figure 4-59: Seashell collection in Karakaba

Figure 4-60: Sand mining in Tugombili village in Butiaba

Figure 4-61: Bundles of grass harvested in Butiaba

Figure 4-62: Cord of wood collected in Biiso

Employing local communities on the road construction project will offer an alternative source of income to households that have otherwise been depending on only one or limited sources. This will in turn enhance their livelihood.

4.3.14 Average household income and expenditure

Household earnings include income from subsistence farming, commercial farming, wage employment, income from non-agricultural enterprises, property incomes, transfers, remittances, and organizational support among others.

Findings of the socioeconomic survey show that there is no significant difference in the income levels of households in Butiaba and Buliisa. Majority of the members with access to income (326) persons earning income in both areas earn up to 100,000/= per month.

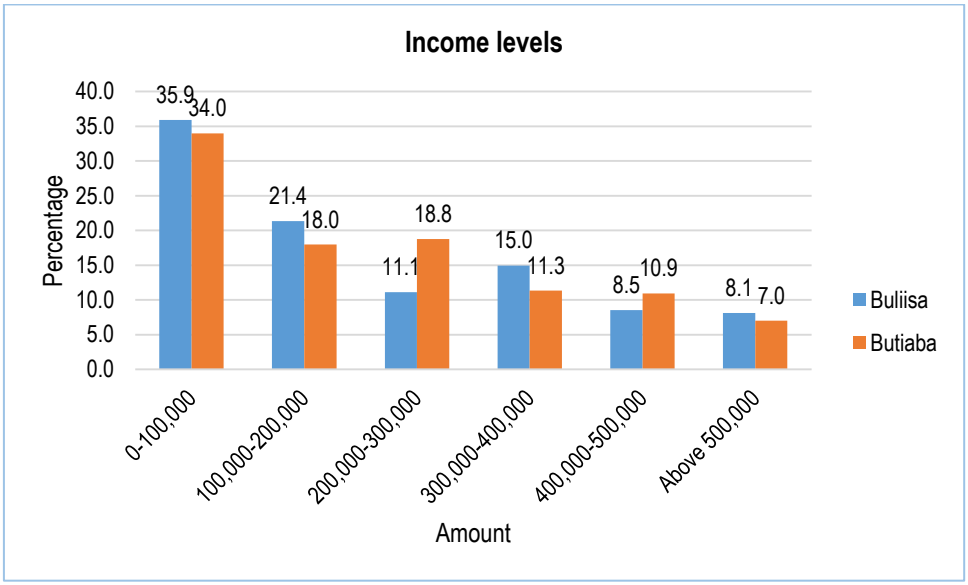


Figure 4-63: Household income levels

Employing local communities on the road construction project will increase the income of those households engaged in construction work. During consultations, community raised concerns of discrimination during job placement especially in the construction sector where jobs are usually classified as “men’s jobs”. The women mentioned that some of them are capable of doing casual work.

To achieve this, the contractor will;

- Announcement notices of equal employment opportunities are posted in visible and popular places in the local communities and that such notices also reach women and youth leaders.
- The construction contractor will involve local leaders in recruitment process to ensure full and fair participation of community members
- The contractor shall provide gender sensitive sanitary facilities that offer maximum privacy at all sites
- The contractor shall provide separate rooms at the campsite for lactating mothers.
- The contractor shall adopt flexible working workers to take into consideration the other roles of women
- The contractor shall make equal payment to men and women for the same work

Regarding expenditure patterns, results of the survey indicated that for majority of the households in both Buliisa and Butiaba, much of their income is spent on obtaining food and on education. Medical expenses and household assets also consume part of their monthly income.

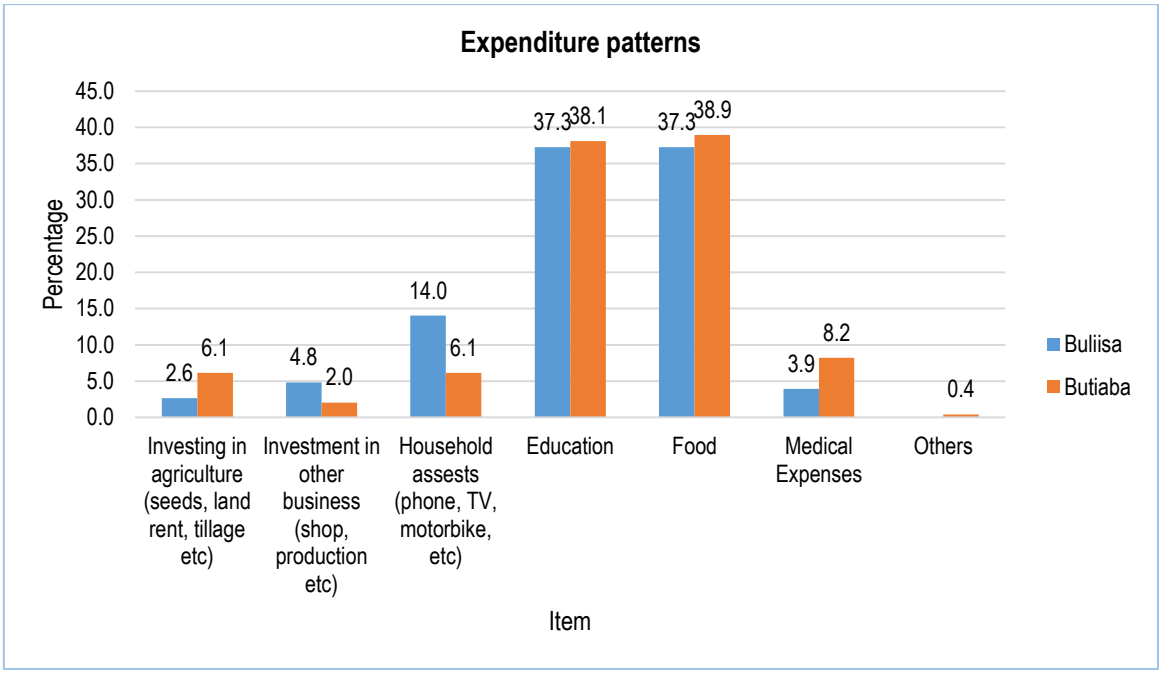


Figure 4-64: Household expenditure patterns

4.3.15 Health

Good heath is central to having a productive workforce, and healthcare provision is vital to the welfare of the community. The Uganda Health Sector Development Plan (HSDP) 2015/16-2019/20 is the medium-term plan driving the agenda of a healthy life for all Ugandans alongside the National Development Plan II (NDP II) and the National Health Policy (NHP II) 2011–2020. One of the fundamental goals for the HSDP is to contribute to the production of a healthy human capital for wealth creation through provision of equitable, safe and sustainable health services. In addition, among the guiding principles for the implementation of the NHP II is; being 'evidence-based' and 'forward-looking'. The sector development plan is in line with the Sustainable Development Goal (SDG) target 3.8 that advocates for achieving universal health coverage including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all. Table 4-40 below presents the number of health facilities within the district.

Table 4-40: Physical Health Infrastructure in the district

S/N	Health facility	Subcounty	Level	Ownership	Catchment population	Staffing level (%)
1	Buliisa General Hospital	Buliisa S/C	V	Govt	15,217	48.2%
2	Buliisa HC	Buliisa T/C	IV	Govt	21,153	87.5%
3	Biiso HC	Biiso	III	Govt	21,834	110.5%
4	Butiaba HC	Butiaba	II	Govt	17,606	78.9%
5	Avogera HC	Ngwedo	II	Govt	13,881	78.9%
6	Bugoigo HC	Butiaba	II	Govt	11,100	77,8%
7	Kigwera HC	Kigwera	II	Govt	11,516	100%
8	Kihungya HC	Kihungya	II	Govt	12,846	100%
DISTRICT						62.8%
10	Uganda Martyrs HC	Buliisa T/C	II	PNFP	762	NA
11	Paraa HC	Ngwedo	II	PNFP	3,996	NA
12	Marine HC	Butiaba	II	PNFP	4,988	NA
Total		12 facilities			142500	

Sources: HMIS

The Health centres in the two Town councils (Butiaba and Buliisa) where the proposed project roads traverse are presented in Table 4-41.

Table 4-41: Health facilities within the project area

No.	Name	GPS Coordinates		Type	Ownership	Authority	Status
		Easting	Northing				
Buliisa Town Council							
1	Buliisa Hospital	31.41245	2.11622	General Hospital	Government	(MoH)	Functional
2	Uganda Martyrs HCII	31.41683	2.10627	HC II	Private Not for Profit	Local Government	Functional
3	Buliisa HC IV	31.41245	2.11622	HC IV	Government	MOH	Functional
Butiaba Town Council							
1	Marine Military	317910.869	198376.0389	HC II	Private Not for Profit	Army	Functional
2	Bugoigo HC II	323007.930	210908.4135	HC II	Government	MOH	Functional
3	Butiaba HC II	314621.470	200361.8458	HC II	Government	MOH	Functional

Table 4-42: Health centres along the project roads and distance from the road

No.	Road	Name of Health center	Offset
1	Muhoojo	Buliisa Health Center IV	100 m
2	Part of Sseseko – Kawaibanda	Butiaba Health Center II	End of the road

According to Buliisa District General Health Status Report 2018, the top 5 Causes Of morbidity in the District are Pneumonia – Cough or Cold, Diarrhoea, Intestinal worms, Urinary Tract Infections and malaria taking the lead. Table 4-43 shows the disease burden and indicators in the district.

Table 4-43: Disease burden in the district

No.	Disease Burden	Indicator Definition	Indicator
G	Top 5 causes of morbidity in the district		Disease: Diagnosis (%) Malaria total: 33.8% Pneumonia cough or cold: 27.6% Acute diarrhoea: 4% Urinary tract infection: 2.7% Gastro intestinal disorder: 2.5% Others: 29.4%
G1	District Trachoma Prevalence Rate	Survey	5.84%
G2	Regional HIV Prevalence	HIV prevalence of the region in which the district is located	5.6 % (2017 burden tables)
G3	District HIV Prevalence	District HIV Prevalence	4% (2017 burden tables)
G4	HIV prevalence of specific key population groups in the district	Key population HIV prevalence by specific groups	FSW - 0.46% Fisherfolks-1.2% (source: IDI data)

G5	Expected HIV positive pregnancies	Number of expected pregnancies x district specific HIV prevalence	259
G6	Expected HIV positive children (<15 years)	Total population (<15 yrs) x HIV prevalence (<15 years)	301 (2017 burden tables)
G7	Reported number of maternal deaths in health facilities	Number of maternal deaths in health facilities reported in the previous year	2 (two)
G8	Number of orphans and vulnerable children (OVC)	Number of OVC (children below 18 years) registered in the district in the previous year	Total number of OVC: children <18 years
G9	Reported number of malaria cases	Number of malaria cases reported in the previous year	52,302
G10	Expected number of tb cases	Total population x 0.3%	389
G11	TB case detection rate	Numerator: number notified through DHIs Denominator: expected number of TB cases per year (according to the TB prevalence and the district population) x 100	26%

Source: DHO Report accessed in Feb 2020

Findings of the socioeconomic survey indicated that the out of 463 household heads that participated in the survey, majority of the households (194 in Buliisa TC and 200 in Butiaba TC) mentioned malaria as the common disease affecting their households. Other diseases common in the area included Diarrhea, Bilharzia and Typhoid which are more common in Butiaba, and eye infection and Flue/cough which are more common in Buliisa as shown in Figure 4-65.

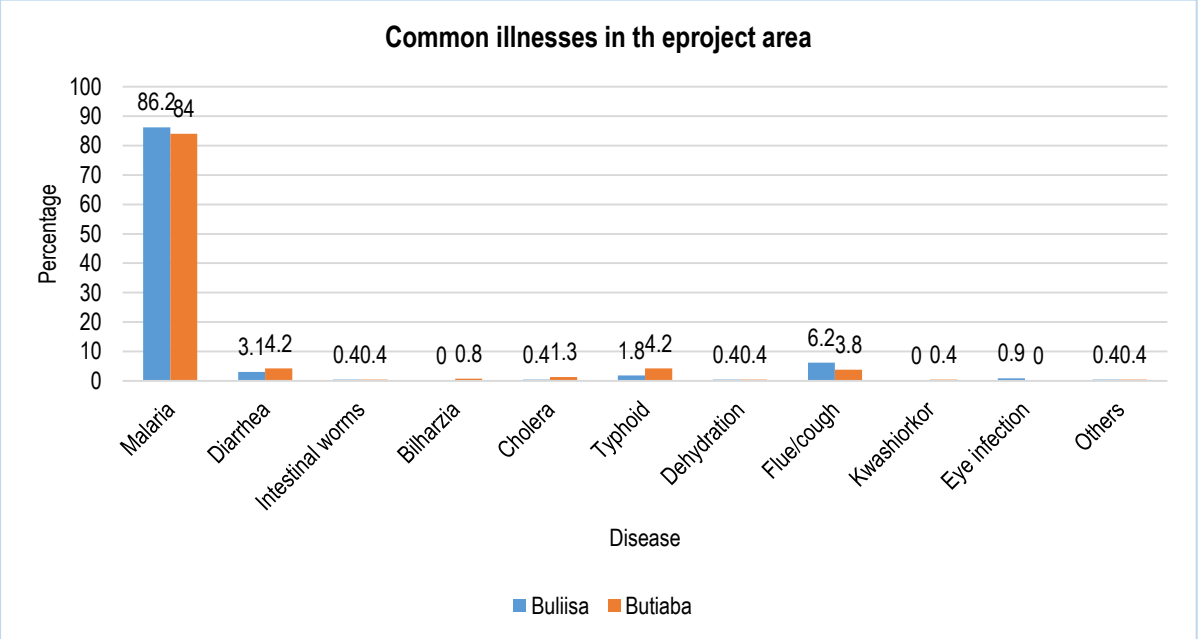


Figure 4-65: Common illnesses in the project area

This could be attributed to the wetlands and the flat nature of the area especially Buliisa town council that encourages stagnation of water hence offering breeding sites for mosquitoes. Following to intervention by the District health team and other partners through sensitization of communities on preventive measures and distribution of free Insecticide Treated Nets, majority of households in Buliisa Town council have mosquito nets. Discussions with some fishermen on Butiaba landing site revealed that in Butiaba, most of the free nets that were distributed to the locals were turned inti fishing gear on the lake.

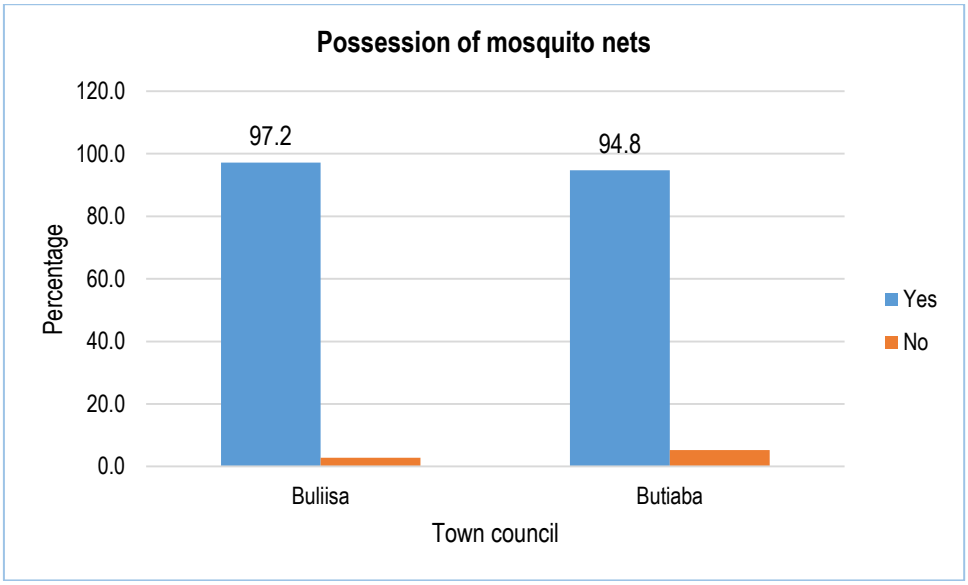


Figure 4-66: Mosquito nets distribution

During road upgrade, designs have proposed a number of culverts to be positioned across small rivers and streams. Hydraulic designs have proposed a total of 37 lines of cross-drainage culverts including 11 lines of 1200mm diameter culverts, 7 lines of 900mm culverts and 19 lines of 600mm diameter culverts. These will help drain away water to avoid stagnation of water that would otherwise offer breeding places for mosquitoes.

In addition to this, during construction, the contractor should establish a fully equipped and staffed site clinic preferably at the camp to reduce the spread of malaria and other diseases.

According to the Buliisa District Health Status Report 2018, the top three diseases diagnosed across the whole Project area are malaria, Pneumonia cough or cold, Acute diarrhoea, Urinary tract infection and Gastro intestinal disorder. Besides malaria, sexually transmitted diseases e.g HIV/AIDS in the area are likely to increase as a result of interaction of workers and the community.

Results of the 2016 Uganda Population HIV Impact Assessment (UPHIA) indicate that 6% of adults aged 15-49 years in Uganda are living with HIV. Among children under age five, HIV prevalence is 0.5%, while among those aged 5 – 14 years, it is also 0.5%. Results further indicate that the prevalence of HIV in the Mid-western region is lower than the national average (5.7% compared to 6.2%). It is thought that the relatively high HIV prevalence in the western region is at least in part due to the presence of the vibrant fishing industry along Lake Albert. A study conducted in 2019 on the Livelihood Risk, Culture, and the HIV Interface on Lakeshore Border Communities in Buliisa District indicated that the regular cash income, irregular working hours, and being away from family and spouses for prolonged periods of time made fishing a high-risk livelihood. The demands of the fishing livelihood encouraged the consumption of drugs and prostitution with women seeking income opportunities along landing sites to sell food, alcohol, and sex. During seasons of low catch, women tended to trade sex for fish. This put women at risk of

exploitation and constrained their ability to negotiate for condom use. These circumstances increased their exposure to HIV (Kwiringira, 2019).

Since some of the project roads in Butiaba Town Council are located near landing sites, workers and community sensitization campaigns should be conducted regularly against the increase in spread of HIV/AIDS as a result of project implementation.

According to the Buliisa District Health Status Report 2018, the challenges faced by the health sector in the area include;

i. Policy guide lines require each sub county should have Health Center III, but four sub counties have no health III's and yet have a big catchment population.
ii. Inadequate drugs for Epilepsy, Mental and Neglected Tropical Diseases in Kihungya and Biiso Health Centers despite over whelming cases.
iii. Lack of enough EPI fridges in Marine, Bugana and General Hospital
iv. Lack of Maternity Wards at two facilities of Kihungya and Kigwera HCII at sub county level.
v. Unequipped laboratories in all health facilities
vi. Sanitation status is still poor due to life style at landing sites and collapsible soils, lack of locally available materials, inadequate funds to construct Public Latrines mostly on Landing sites, inadequate funding for sanitation and Hygiene related activities.

4.3.16 Settlement and Housing Conditions along the proposed roads

In most parts of the project area, much of the population is concentrated along major and minor roads; most of the villages have a trading centre along the "main" road (or at cross roads), in which main businesses and social activities usually take place (retail shops, community meetings, etc.).
Within the project area, the settlement is mainly clustered around landing sites in Butiaba whereas in Buliisa Town Council, settlement is mainly linear close to the project roads and scattered as one moves away from the town.

While some villages are clearly organised according to clan structure especially along Buliisa town council roads, others have mixed settlement patterns (meaning that they are not spatially organised by clan), especially in at the landing sites in Butiaba Town Council where migrants come for fishing and reside in temporary or semi-temporary structures.


Figure 4-67: A typical homestead in Kekeya, Piida ward


Figure 4-68: Clustered settlement in piida village, piida ward

Overall, houses in both Town Councils remain largely traditional, made of grass-thatched roofs and (painted) mud walls, however, permanent brick houses are common in the urban areas of Buliisa town. Community consultations revealed that Iron-roof houses are progressively replacing grass-thatch roofs, influenced by compensations paid by oil and gas companies. Permanent brick houses are frequently

encountered in the urbanised areas between Buliisa T.C. and Wanseko T.C. They usually belong to rich owners such as business men or politicians.

Building material

Most of the material used in construction of mud houses are sourced locally, they include wood, grass, loam soil from anthills and mud. Depending on their incomes and geographical access to natural resources, households either buy these resources (especially grass and poles), grow them (e.g. acacia wood) or collect them in their surrounding environment. The construction can be done by the household members– women cut grass and tie it into small bundles ready for use, while men perform tasks such as pole cutting and transportation, soil mixing, thatching and making the foundation.

Apart from traditional huts, iron-roofed houses also exist in the project area. Permanent housings using iron roofs and brick walls are concentrated in Buliisa and Butiaba town.

Figure 4-69: Grass thatched house along Kalolo road

Figure 4-70: Iron roof house along Rif Valley road

Paving of the project roads is likely to attract investors that will set up permanent structures along these roads; both residential and economic. This should be enhanced by proper planning of developments along these roads by the respective town councils.

4.3.17 Existing transport, economic infrastructure use and conditions

Buliisa District currently has no tarmacked roads, however UNRA is currently undertaking the upgrading of Hoima–Butiaba– Wanseko and Buliisa-Paara; Wanseko-Kasenyi-Kirango-Bugungu camp Roads. MLHUD under ARSDP Batch 1 is undertaking of 3 gravel roads; Kisiabi – Kabolwa road (9.8km), (2) Buliisa – Bugana road (10.8Kms) and (3) Ngwedo -Ndandamire – Bikongoro (10.7 Km).

The District has about 160 km of track roads 85km of feeder roads and 130km of community access Roads. The district connects to Nebbi Districts across the River Nile, by use of ferry. Local communities use bicycles and boda boda to commute from one place to another within the Buliisa project.

Traffic into and around the project area is also likely to increase during road construction due to in-migration into the area, which will lead to an increase in overall numbers of road users, increased demand for transport services such as boda bodas and mini bus taxis, and increased numbers of vehicles transporting goods into and out of the area. Majority of the road users in the project area are pedestrians, followed by cyclists, boda boda drivers and cars. Cattle and goats are often seen along minor and the main road supervised by local herdsmen. Consultations with communities during the study revealed that speeding has recently increased following the ongoing road construction works. It is anticipated that speeding is likely to increase after road construction due to the “new road effect”.

Designs have provided for installation of humps and rumble strips to control speed; however, this should be reinforced with continuous safety campaigns that should start as early as the construction phase and continue all through to the operation.

4.3.18 Sanitation infrastructure

Sanitation is a critical component of human life and this is reaffirmed by the importance the SDGs and NDP II 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 the project area due to adverse collapsible soils and high-water table. This results in a lack of latrines in some households/communities, especially in water-logged and flood-prone areas at landing sites.

a) Types of Toilet facility used

Findings of the socioeconomic survey conducted revealed that pit latrines are the most common type (91.7) of excreta disposal in both Town Councils with 212 (44.1%) respondent households in Buliisa and 229 (53.2) in Butiaba.

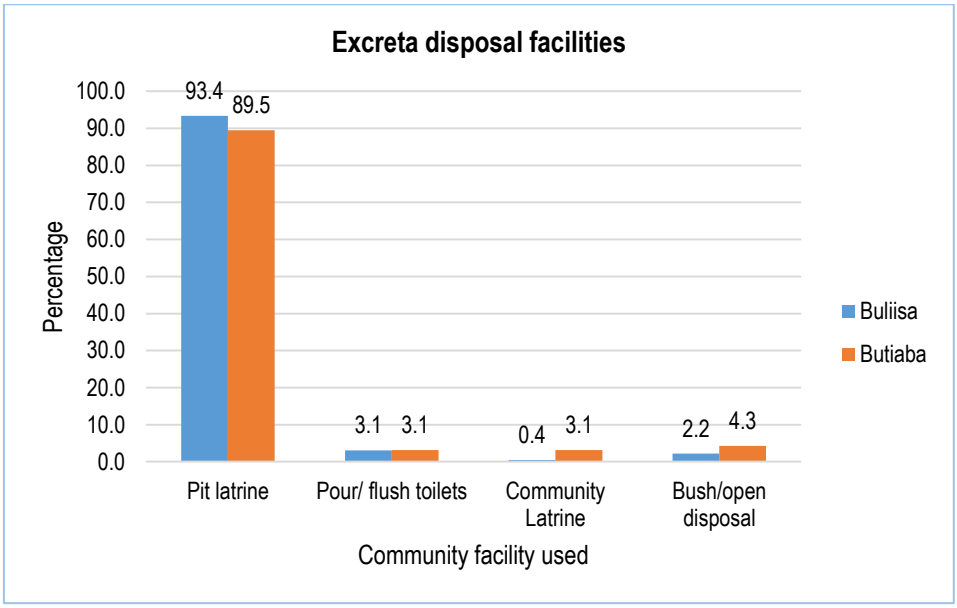


Figure 4-71: Distribution of human excreta facilities

According to the NHPC conducted in 2014, 18.3% (3,949) of the households in the district did not have any toilet facility. In the project area, latrines have been built in most villages but overall latrine coverage is low at landing sites in areas close to L. Albert e.g in Butiaba and Biiso thus increasing the risk of water borne diseases such as cholera, typhoid, dysentery, diarrhea etc. whenever it rains or floods.
In a FGD with the informal landing site committees, they revealed that one of the major problems faced at the landing sites is poor sanitation due to the high water table that makes toilet construction difficult. This in turn increases the outbreak and spread of diseases such as diarrhea.

Table 4-44: Latrine coverage in the district

Year	Latrine coverage	Hand washing coverage	Comment
2016/17	68%	23	More latrines and their usage being constructed.

2017/18	62%	21	Percentage reduced due to increase in population reserve home steads

Source: DHO Report accessed in Feb 2020

Figure 4-72: Latrines on Butiaba landing site

Figure 4-73: A VIP latrine in Butiaba market constructed by Biiso Subcounty

During community consultations, it was mentioned that if the contractor does not manage sanitation especially in Butiaba Town Council, the already poor sanitation at landing sites will be worsened. The contractor should provide adequate sanitary facilities for the workers at the campsite but also mobile toilets along project roads.

4.3.19 Water

The right to water is directly stipulated in the Constitution of the Republic of Uganda under the National Objectives and Directive Principles of State Policy. Objective XIV articulates social and economic rights, including the right to water, health and an adequate standard of living. According to SDG No.6, it is a commitment to achieve universal and equitable access to safe and affordable drinking water for all by 2030 which can only be achieved through piped water supplies.

b) Access to water

The source of water is an important determinant of the health status of household members. Safe and clean water is a prerequisite for reducing many common killer diseases of both adults and children such as diarrhoea, dysentery and cholera. In African households that collect water outside their residence, the burden reflects in the division of labor along gender lines within the households. In line with socially-constructed gender roles, the burden of water collection and storage usually falls on the women and girls of a given household (UNDP 2006).

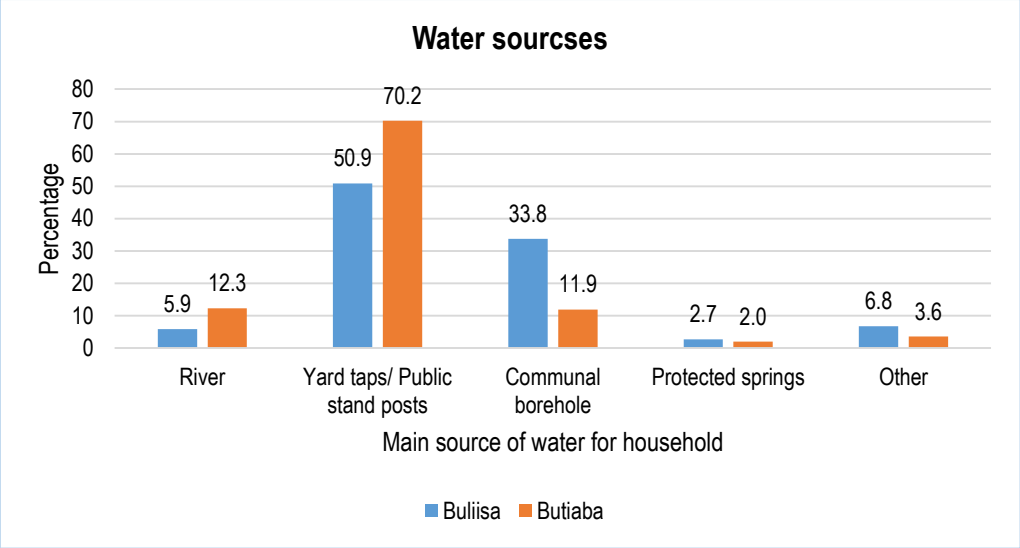


Figure 4-74: Distribution of water sources

Findings of the socioeconomic household survey indicated that majority of the households in both Butiaba and Buliisa get their water from public stand posts/yard taps (70.2% and 50.9% respectively), followed by community boreholes (33.8% in Buliisa and 11.9% in Butiaba)

A number of boreholes and tap stands do exist in the project area. During construction works, only one Public stand post along Magali road in Butiaba Town Council will be directly affected. there is need to consider slight shift of the road alignment from the borehole point to the RHS

Figure 4-75: Borehole in Buliisa Town Council

Figure 4-76: Public stand pipes in Tangala, Butiaba

4.3.20 Communication and stakeholders' engagements

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.

According to the NHPC 2014, the sources of information for majority (57.5) of the households in Buliisa district is radio and more than half (55.3) of the households in the districts had radios in their homes.

Commensurate to the above, findings of the socioeconomic survey conducted also indicated that information in the project area is best received through radios followed by community meetings. The most listened to radio in the project area is Biiso FM (97.6% in Butiaba and 94.5% in Buliisa Town councils) located in Biiso town. Other stations listened to include KBS, Kitara fm, Pakwach fm, Kings Fm, Paidha fm and BBS FM among others.

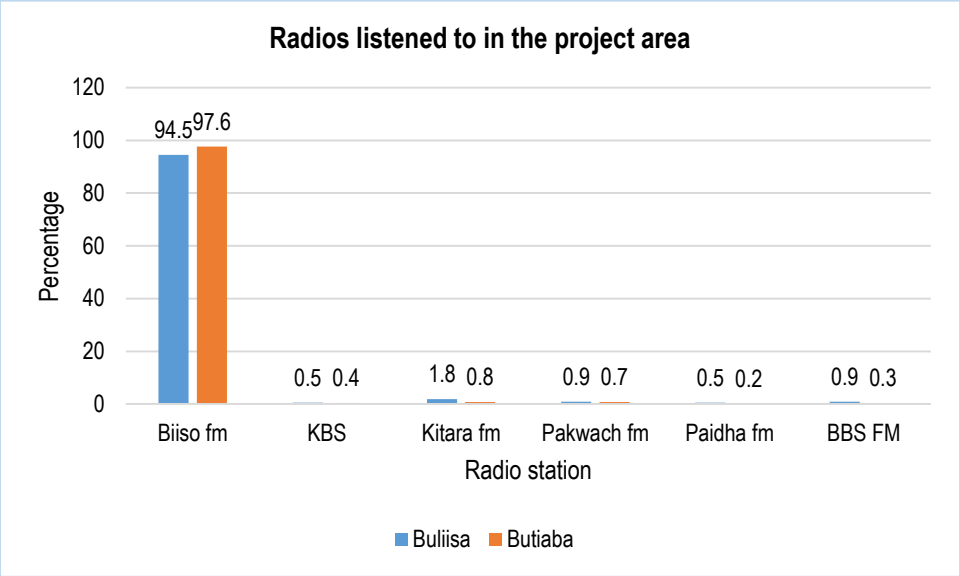


Figure 4-77: Radios listened to in the project area

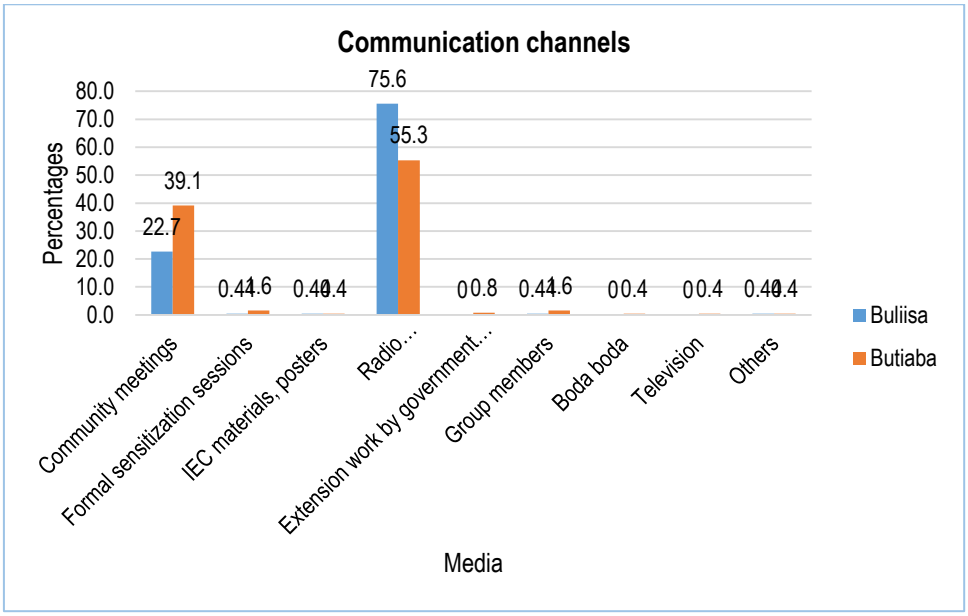


Figure 4-78: Channels of information dissemination

Out of these channels of information dissemination, the ESIA team used community meetings and Radios in mobilization and community mobilization. These, in addition to the other methods e.g IEC materials, posters, Televisions among others can thus be used for information dissemination throughout all project implementation phases.

Use of IEC materials and continuous stakeholder engagement throughout project life will increase awareness and interest of the community in the project. It will provide avenues for the contractor and all project implementers to receive feedback on the impact of the construction activities on the community and how best these challenges can be addressed with full participation of the community.

Other places of information sharing in the project area include, churches, mosques, drinking places, community play grounds and burial places.

4.4 Utilities and social infrastructure along the proposed roads

There are four schools, 5 five worship centeres (4 churches and 1 mosque), two markets, 1-night club, two town council offices and two health centers along the project roads.

Although there are no electricity crossings within the proposed roads to be affected, there are water utility crossings within the town. Hence the contractor shall work with NWSC and/or Water & Sanitation Umbrella Organizations to relocate these services before construction.

Table 4-45 shows the existing social infrastructure and utilities along the project roads.

Table 4-45: Existing social infrastructure and utilities along the roads

Sn	Road Name	Key Features / Characteristics	Side	Offset	Remark & implication on relocation
1	Gongo	Buliisa town church	RHS	100 m	No direct structural impact; no need to relocate or compensate
		CICO Campsite	LHS	10 m	No direct structural impact; no need to relocate or compensate
		Household structure (Kitchen)			01 Hut (grass-thatched) shall be affected and needs to be relocated.
2	Commercial	Divine secondary school	RHS	200 m	No direct structural impact; no need to relocate or compensate
		Central market	LHS	200 m	No direct structural impact; no need to relocate or compensate
3	Muhoojo	Water reservoir tank	RHS	40 m	No direct structural impact; no need to relocate or compensate
		Night clubs	LHS	30 m	No direct structural impact; no need to relocate or compensate
		Borehole	RHS	15 m	No direct structural impact; no need to relocate or compensate
		Buliisa Health Center IV	RHS	100 m	No direct structural impact; no need to relocate or compensate
5	White	Uganda Martyrs' primary school	LHS	500 m	No direct structural impact; no need to relocate or compensate
		Uganda Martyrs' comprehensive secondary school	LHS	500 m	No direct structural impact; no need to relocate or compensate
6	Galende	Buliisa town catholic church	RHS	80 m	No direct structural impact; no need to relocate or compensate

Sn	Road Name	Key Features / Characteristics	Side	Offset	Remark & implication on relocation
9	Kalolo	Buliisa primary school	LHS	50 m	No direct structural impact; no need to relocate or compensate
		Buliisa town mosque	LHS	50 m	No direct structural impact; no need to relocate or compensate
11	Mutiti	Itambiro church	LHS	100 m	No direct structural impact; no need to relocate or compensate
		Pentecostal church	LHS	50 m	No direct structural impact; no need to relocate or compensate
12	Rift valley	Buliisa Town Council Offices			No direct structural impact; no need to relocate or compensate
		Buliisa police station and accommodation units	LHS	80 m	No direct structural impact; no need to relocate or compensate
13	Siira	Water point; Community tap stand	LHS	30 m	No direct structural impact; no need to relocate or compensate
		Household within the road reserve	LHS	5 m	01 Hut (grass-thatched) shall be affected and needs to be relocated.
16	Magali	Butiaba daily market	Both sides	10 m	No direct structural impact to the make-shift structures; no need to relocate or compensate
		Public stand post	LHS	10 m	Structural impact iminent; need to consider slight shift of the road alignment from the borehole point to the RHS
		Recreation center	LHS	50 m	No direct structural impact; no need to relocate or compensate
17	Access to Marine and Butiaba fish landing site	Marine offices	RHS	20 m	No direct structural impact; no need to relocate or compensate

Sn	Road Name	Key Features / Characteristics	Side	Offset	Remark & implication on relocation
18	Part of Sseseko - Kawaibanda	Butiaba Subcounty/Town council offices	LHS		No direct structural impact; no need to relocate or compensate
19	Access to health center	Butiaba Health Center II	End of road		To avert any direct structural impact; civil works should taper at a point where impact of heavy machinery shall not be inflicted on the Health Center structures

4.4.1 Project Affected Persons in the Right of Way (RoW):

Both Buliisa and Butiaba Town Councils have adequate RoW for road construction. At the time of planning for Buliisa T/C, the existing and planned roads were incorporated into the Physical development Plan with RoW of 16 Metres on each side. The T/C authorities have also been ensuring that every structure (house) that is constructed is located off the RoW; all permanent structures constructed in Buliisa T/C have complied with this requirement which the T/C has been judiciously enforcing.

The Buliisa T/C authorities have been engaging the land/plot owners adjacent to the road to sign consent forms to confirm that they do not have any claim over the RoW (land between their plots and centre of the road); this exercise has been successfully done with support from MLHUD.

There are only 02 temporal structures (grass-thatched houses) in the RoW in Buliisa T/C. The owners of these structures have been engaged by the T/C authorities and have consented to move their structures off the RoW; the T/C is committed to providing logistical support to effect this voluntary movement. No compensation claims are being fronted by the members of the public.

Table 4-46: Persons with structures on RoW

No.	Name of Road	Name of affected person	Amenity affected	Remark
1.	Gongo	Rukenda John	Grass-thatched house (Kitchen)	Buliisa T/C engaging owner to relocate kitchen; T/C to support relocation
2.	Siira	Tumwesigye Langton (of Siira Family)	Grass-thatched house	Buliisa T/C engaging owner to relocate hut; T/C to support relocation.

In Butiaba T/C, all the planned roads do not have any impediments; the members of the public do not have any claim to land in the RoW. Butiba T/C authorities have been engaging the locals to ascertain no claim over land in the RoW. On completion, the Town council shall prepare a report on the process which shall be submitted to MLHUD. A sample of the consent form signed by persons with plots along the project roads and Buliisa Town Council has been included under Appendix XIV.

4.5 Physical Cultural Resources

4.5.1 Traditional Religion in Buliisa District

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

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

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

These Clan cultural sites are situated in many locations in Buliisa Districts and are usually marked by big trees where the prayers and sacrifice rituals are conducted but some are located at swamps.

4.5.2 Cultural heritage within the project area

Figure 4-79: Kimwiza Swamp

The study found that there was no community heritage resource directly affected by the upgrading of the proposed roads. However, findings revealed that in the project area exists Kimwiza swamp, a cultural heritage resource at coordinates (UTM 36N 0324628, 0237604), where cultural ceremonies by Local priests called Baramansi are conducted to bless the land for agriculture in accordance to the traditional religion of the Bagungu people. The location is known to the Buliisa District Community Development Officer who is in charge of Cultural activities in the District who confirmed it as cultural location.

The caretaker of the location (Elphaz Kaheru of the Basyabi clan) directs members of the Badogimo clan who conduct rituals at the location. The location is known in local terminology as a "Kihomgo". Sacrifices involving sheep, goats and chicken are performed as and when the traditional priests deem it necessary to pray for the area. This location is away from the roads to be upgraded at approximately 3.29 km from the nearest road (Gongo road). However, it must be protected from any activities of road construction such as waste Disposal or machinery parking.

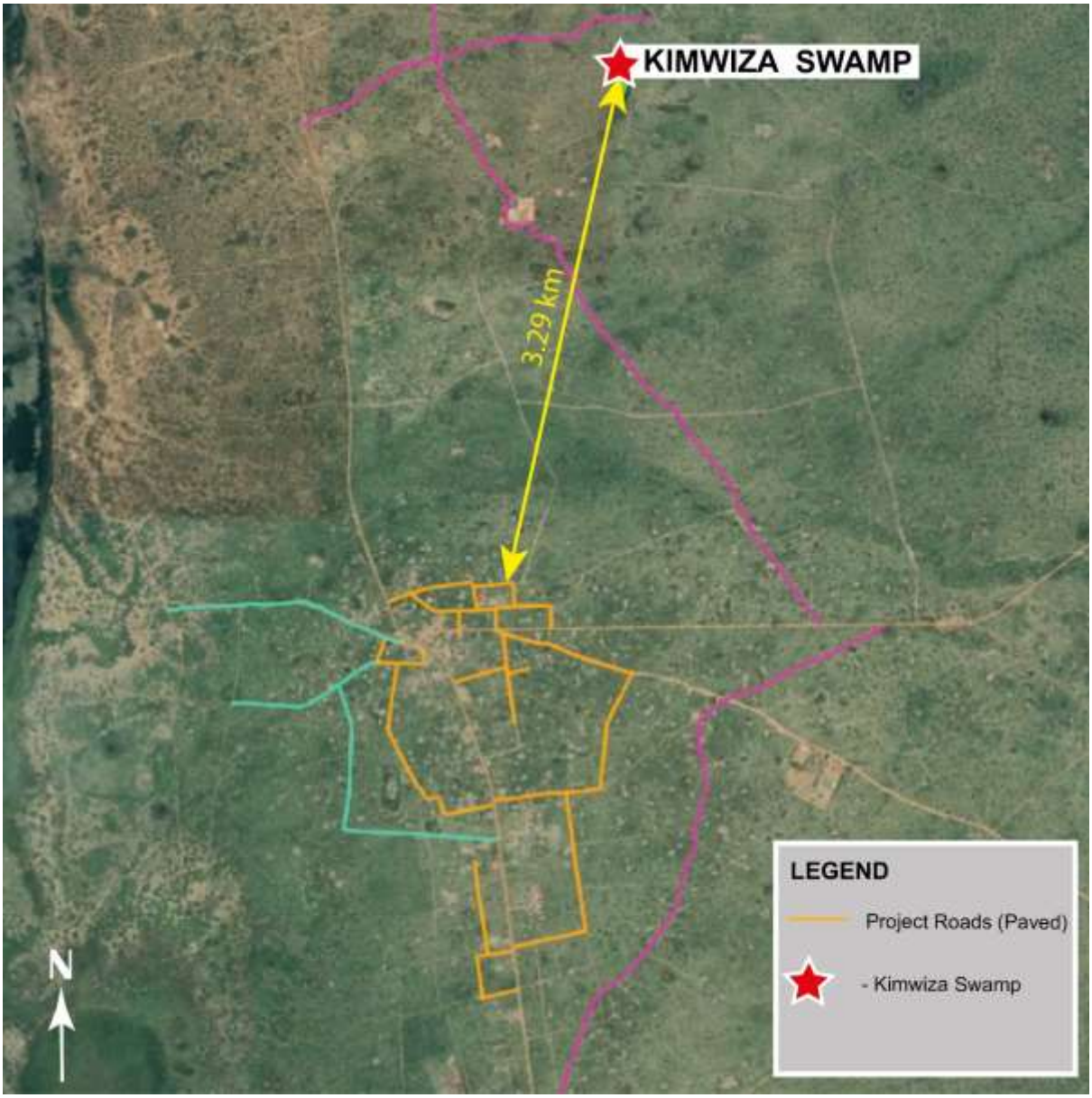


Figure 4-80: Location of Kimwiza swamp relative to the project roads

5. POLICY, LEGISLATION, REGULATION AND STANDARDS

5.1 Introduction

This chapter discusses the policy, legal and institutional framework within which the ESIA was conducted along with relevant international agreements and Conventions to which Uganda is a party. The integration of international agreements and conventions allows for synergy and gap filling for any variation between Ugandan and international laws.
Whereas many of the impacts of road construction and the resulting disturbance of ecological and social systems can be managed through avoidance, minimisation and mitigation, clarity of legal framework is also necessary. Environmental and social effects must be managed within a legal framework.

5.2 Policy Framework

5.2.1 The National Environment Management Policy, 1994

This policy aims to promote sustainable economic and social development mindful of the needs of future generations and EIA is one of the vital tools it considers necessary to ensure environmental quality and resource productivity on long-term basis.
It calls for;

i. Integration of environmental concerns into development policies plans and projects at national, district and local levels, with full participation of the people;
ii. Conservation, preservation and restoration of ecosystems and maintenance of ecological processes and life support systems, especially conservation of national biological diversity;
iii. Raising of public awareness to understand and appreciate linkages between environment and development; and Ensure individual and community participation in environmental improvement activities.
iv. Enhancement of the health and quality of life of all people in Uganda and promote long-term, sustainable socio-economic development through sound environmental and natural resource management and use;
v. Optimization of resource use and achievement of a sustainable level of resource consumption;

Relevance: The policy provides guidance on how projects (such as the proposed road development) likely to have significant adverse ecological or social impacts should undertake an ESIA before their implementation. It is against this background that this ESIA has been undertaken for the proposed project.

5.2.2 National Environmental Health Policy, 2005

The main objective of this policy is to create an enabling environment for the achievement and maintenance of healthy living conditions in rural and urban areas. It actively promotes and supports the adoption of a national sanitation, ensure that an environmental health community at national and local government level is suitably skilled and equipped to meet current environmental health challenges.

Relevance: Significant adverse sanitation challenges especially during construction of the roads close to landing sites in Butiaba Town Council are likely to rise due to construction works. The proposed project involves construction of roads, disposal of waste and pollutants hence the requirement for observation of this policy.

5.2.3 Uganda Gender Policy, 2007

The overall goal of this policy is to achieve gender equality and women's empowerment as an integral part of Uganda's socio-economic development.
Its main purpose is to establish a clear framework for identification, implementation and coordination of interventions designed to achieve gender equality and women's empowerment in Uganda. The policy is a guide to all stakeholders in planning, resource allocation, implementation and monitoring and evaluation of programmes with a gender perspective.
The main Objectives of this policy include;

i. 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;
ii. To 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;
iii. To strengthen women's presence and capacities in decision making for their meaningful participation in administrative and political processes;
iv. To address gender inequalities and ensure inclusion of gender analysis in macro-economic policy formulation, implementation, monitoring and evaluation

Relevance: Planning for gender equality shall be integrated into pre-construction, construction and post construction activities. The project developer shall ensure that gender specific needs are well articulated and implemented to avoid and minimize socio-economic impacts.

5.2.4 National Water Policy, 1999

The objective of this policy is to provide guidance on development and management of the water resources in Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs, with full participation of all stakeholders and mindful of the needs of future generations.

Relevance: some of the roads to be upgraded provide connection to the landing sites on L. Albert; a prominent water body of National importance. Sound measures shall be devised to avoid/minimise/mitigate the impact of road construction on this lake.

5.2.5 National Wetlands Policy, 1995

The policy aims at curtailing the rampant loss of wetland resources and ensuring that benefits from wetlands are sustainable and equitably distributed to all people of Uganda. In this respect, therefore, the wetlands policy calls for;

i. No drainage of wetlands unless more important environmental management requirements supersede
ii. Sustainable use to ensure that benefits of wetlands are maintained for the foreseeable future;
iii. Environmentally sound management of wetlands to ensure that other aspects of the environment are not adversely affected;
iv. Equitable distribution of wetland benefits;

v. The application of environmental impact assessment procedures on all activities to be carried out in a wetland to ensure that wetland development is well planned and managed.

Relevance: some of the roads to be upgraded especially Butiaba Town Council e.g. Magali, Access to Marine and Butiaba landing site and Part of Sseseko Kawaibanda traverse flood plains and lead to L. Albert. Sound measures shall be devised to avoid/minimise/mitigate the impact of road construction on this lake.

5.2.6 Uganda National Land Policy, 2013

The overall goal of the Policy is to ensure an efficient, equitable and optimal utilization and management of Uganda's land resources for poverty reduction, wealth creation and overall socio-economic development. One of the guiding principles of the Land Policy is effective regulation of land use and land development. Objectives vii of this policy is to ensure planned, environmentally- friendly, affordable and orderly development of human settlements for both rural and urban areas, including infrastructure development.

Relevance: Section 74 (i) states that where it is necessary to execute public works on any land (e.g. construction of water works), an authorized undertaker shall enter into mutual agreement with occupier or owner of the land in accordance with this act hence the need for consent forms from all directly affected people and a relocation procedure.

5.2.7 Uganda National Culture Policy, 2016

The Policy provides a framework for the promotion of culture for development and complies with international and regional instruments on culture. The core principles underlying the Policy are; Promoting Unity in Diversity, respecting one another's' culture, ensuring social inclusion (Children, youth, women, PWDs, elderly, People living with HIV/AIDS and indigenous minorities), promoting cultural change, promoting environmental protection and strengthening partnerships.

Relevance: The project shall ensure harmony with efforts to promote and enhance the contribution of culture to community empowerment.

5.2.8 Wildlife Policy, 2014

The main objective of this Policy is to conserve wildlife resources of Uganda in a manner that contributes to the sustainable development of the nation and the well-being of its people. With specific objectives of:

i. Promoting sustainable management of Uganda's wildlife Protected Areas, sustainably manage wildlife populations in and outside Protected Areas.
ii. Promoting sustainable and equitable utilization of wildlife resources as a viable form of land use for national economic development.
iii. Effectively mitigate human wildlife conflicts.
iv. Promoting wildlife research and training.
v. Promoting conservation education and awareness across the nation.
vi. To ensure net positive impacts of exploration and development of extractive industries and other forms of development in wildlife conservation areas.
vii. To effectively combat wildlife related crime and to promote and support local, regional and global partnerships for conservation of wildlife.

Relevance: The project area neighbors Murchison Falls National Park and Bugungu Wildlife Reserve. As much as none of the project roads go through the park and the reserve, some of the construction material might be sources from areas neighboring the park and reserve. The project should promote sustainable management of wildlife habitats as well as avoid/minimise/mitigate impacts, if any, on protected area.

5.2.9 National Policy on Elimination of Gender Based violence, 2016

The policy seeks to promote, prevent and respond and end impunity of gender-based violation in the country. The highest prevalence of gender-based violence is among women aged between 15 and 45; and generally, involves sexual violence.

Relevance: The proposed project shall have specific guidelines on eliminating of gender-based violence throughout project phases. In addition, the project will be required to work with community members, police, teachers, parents and all stakeholders to specifically address gender issues.

5.2.10 National Policy on Disability, 2006

The vision of the policy is a society where people with disabilities (PWDs) fully participate in all spheres of development. The mission is to provide a framework to the empowerment of PWDs in the development process.

Relevance: The project shall ensure participation of PWDs in the planning, implementation, monitoring and evaluation for all the project phases.

5.2.11 National Youth Policy, 2001

The goal is to provide an appropriate framework for enabling youth to develop social, economic, cultural and political skills so as to enhance their participation in the overall development process and improve their quality of life.
The objectives of the policy are;

i. To initiate, strengthen and streamline all programmes and services targeting the youth.
ii. To promote social and economic empowerment of the youth.
iii. To build capacity and provide relevant training and information to the stakeholders.
iv. To promote growth in the development of the youth through actions that protect empower and prepare them for adulthood.
v. To provide psycho-social support and other services to youth in conflict situations, difficult circumstances and to the disadvantaged groups.
vi. To increase youth involvement in decision--making, leadership, community based and other development programmes.
vii. To mobilise resources for youth programmes and projects at all levels.

Relevance: Road project should include all youth in all phases of the project execution, including planning, construction and operations. Priority for employment should be given to youth from the project area.

5.2.12 National Child Labour Policy, 2007

The overall objective of the policy is to guide and promote sustainable actions aimed at the progressive elimination of child labour starting with the worst forms. The vision of the policy is a society free of exploitative child labour in which all working children enjoy their right to childhood, education, dignity and the full development of their potential

Relevance: The project shall actively participate in efforts to eliminate child labour during pre-construction, construction and post construction. The contractor shall ensure involvement of LC1 leaders in recruitment of local labour to ensure underage children are not employed in project works.

5.2.13 National Equal Opportunities Policy, 2006

The National Equal Opportunities Policy provides a framework for re-dressing imbalances, which exist against marginalized groups while promoting equality and fairness for all, with a goal of. Providing avenues where individuals and groups' potentials are put to maximum use by availing equal opportunities and affirmative action.

Relevance: Road construction comes along with a lot of opportunities including service delivery, trainings and employment. The project will avail equal opportunities and affirmative action.

5.2.14 National AIDS Policy (2004) and National Strategic Framework for HIV/AIDS activities in Uganda

This provides overall policy framework for national HIV/AIDS response. The National Policy on HIV/AIDS recognizes special groups, which include migrant workers. The Policy recommends the need to identify strategies to address migrant workers in view of the challenges posed by mobility and vulnerability to HIV. This is in line with the Constitution of the Republic of Uganda, 1995 Article 39. This Article creates the right to a clean and healthy environment, implying that workplace safety and health (including prevention of HIV infection), is a basic right of every citizen. Under its General Objective XIV, the State is committed to fulfilling the fundamental rights of all Ugandans to, among others, social justice and economic development and shall, in particular, ensure that all developmental efforts are directed at ensuring the maximum social and cultural well-being of the people.

A number of workers will be expected to come to the project area during construction and these are likely to be exposed to an environment that encourages the spread of HIV /AIDS and other STDs. The strategies to fulfill the objective of this policy will need to be incorporated in project during the planning process.

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:

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

Relevance: it is anticipated that the road upgrade project will employ people from different parts of the country indiscriminate of their HIV/AIDS status. Interaction with the community may result into increase of spread of the disease. Measures shall therefore be instituted by the contractor and supervising agencies to ensure that the spread of HIV/AIDs is controlled through activities like sensitization of the workers and communities and providing free counselling and testing services among other measures.

5.2.15 Uganda Road Sector Policy Statements, Guidelines

a) MoWT Guidelines for Mainstreaming Cross-Cutting Issues, 2008

Ministry of Works & Transport (MoWT) has in place guidelines for mainstreaming concerns and interventions for cross-cutting issues into its activities, plans and programmes. The sub-sector cross-cutting issues include: Gender, Occupational Health and Safety, People with Disabilities and the Elderly concerns and HIV/AIDS. The guidelines provide guidance on strategies, methods and responsibilities for mainstreaming crosscutting issues in road infrastructure projects.

b) MoWT General Specifications for Road and Bridge Works, 2005

MoWT developed general specifications for Road and bridge works which detail how contractors undertaking road and bridge works ought to address, amongst others, cross-cutting issues (gender, environment HIV/AIDS and OSH). The guidelines give practical mitigation measures to be integrated into road designs and implemented during construction and operation. The project will ensure that guidance is planned for and implemented.

c) EIA Guidelines for Road Sub-Sector, 2008

EIA Guidelines for the road sector were finalized by MoWT in 2008 and outline sector-specific socio-environmental assessment requirements for road project. They categorize various road projects and levels of EIA to be undertaken depending on scale of the road project. Under the project categorization of the Sub-Sector EIA Guidelines, the planned upgrading road project falls under Category IV entailing projects that require full and mandatory EIA to be conducted before they are implemented, hence the need to conduct this ESIA.

5.3 The Legislative Framework

5.3.1 Constitution of the Republic of Uganda, 1995

The Constitution in its National Objectives and Directive Principles of State Policy according to; Article XIII: "the obligation of protecting important natural resources on behalf of the people of Uganda" is vested with the state. Article XXVII stipulates the need for sustainable management of land, air and water resources, Article 237 on Land ownership provides that Land in Uganda belongs to the citizens of Uganda and shall vest in them in accordance with the land tenure systems provided for in this Constitution. Article 242 highlights land use in which Government may, under laws made by Parliament and policies made from time to time, regulate the use of land while Article 245 among others concerns protection and preservation of the environment from abuse, pollution and degradation as well as managing the environment for sustainable development and promoting environmental awareness. Furthermore, under article 26 on protection from deprivation of property, the Constitution gives a right to every person to own property either individually or in association with others (1). Section 2 of this article stipulates that no "person shall be compulsorily deprived of property or any interest in or right over property of any description except where the following conditions are satisfied- taking of possession or acquisition in necessary for public use or in the interest of defence,

public safety, public order, public morality or public health; and the compulsory taking of possession or acquisition of property is made under a law which makes provision for- prompt payment of fair and adequate compensation, prior to the taking of possession or acquisition of the property; and a right of access to a court of law by any person who has an interest or right over the property.

In regard to labour issues, the Constitution of Uganda, Section 40 recognizes the right to equal pay for work of equal value. The Constitution Article 21 also states that all human beings are equal before the law and no person can be discriminated against on any ground including sex, race, colour, ethnic origin, tribe, birth, creed or religion, social or economic standing, political opinion or disability.

The Constitution of Uganda Article 40 further notes that women can work in the same industries as men. No restrictions could be located in laws as quoted "every person in Uganda has the right to practise his or her profession and to carry on any lawful occupation, trade or business".

The construction activities of the different roads will require labor force. The Contractor will be required to comply with the above regulations to avoid any kind of discrimination at the work place.

Under Article 39, the Constitution guarantees the right of every Ugandan to a clean and healthy environment. *The constitution therefore, requires that the project to be implemented without endangering human health and the environment.*

5.3.2 National Environment Act, 2019

The specific legislation that deals with Environmental Impact Assessments (EIA) in Uganda is the revised National Environment Act 2019 from NEA-Cap 153, 1995. The National Environment Management Authority (NEMA) was created under the NEA, 1995 and mandated with the responsibility to oversee, coordinate and supervise environmental management activities in Uganda.
According to Schedule 5 of the National Environmental Act No. 5 of 2019, Section (1); Transport, transportation equipment and related infrastructure, Sub section (a) Construction of public roads not being community access roads, including— (i) Enlargement or upgrade of existing public roads, lists such projects for which environmental and social impact assessments are mandatory. The ESIA will review all laws, polices, regulations and standards relevant to the proposed project analysing linkage(s) with the project where applicable.

The Act provides for various strategies and tools for environment management, which also include EIA for projects likely to have significant impacts on the environment.

Relevance: This Environmental and Social Impact Assessment has been conducted in conformity with this Act.

5.3.3 Water Act, Cap 152

The objective of the Act is to enable equitable and sustainable management, use, and protection of water resources of Uganda through supervision and coordination of public and private activities that may impact water quantity and quality.

Section 18 requires that before constructing or operation of any water works, a person should obtain a permit from Directorate of Water Resources Management (DWRM). Construction is herein defined to include alteration, improvement, maintenance and repair of water systems. The Act also aims to control pollution of water resources (Sections 28 and 31).

Relevance: This Act is specifically applicable to the project in two aspects of the proposed project:

i. *Water abstraction for road construction and camp use; the contractor shall apply to DWRM for a permit to abstract surface and ground water;*
ii. *Activities associated with construction of culverts across swamp crossings.*

5.3.4 Land Act, Cap 227

The Act addresses four issues namely, holding, control, management and dispute resolution related to land ownership. As regards tenure, the Act repeats in Section 3 provisions of Article 237 of the Constitution which vests all land in the citizens of Uganda, to be held under customary, freehold, mailo and leasehold tenure systems. It then defines the incidence of each tenure regime (section 4); provides mechanisms of acquisition of certificates of customary ownership (sections 5-9); the conversion of customary tenure to freehold (sections 10-15), or collective management of land held under customary law (sections 16-27); the protection of the rights of women, children and persons with disability (sections 28); the conversion of leasehold into freehold (section 29) and the security of tenure for 'tenants by occupancy' (sections 3039).
Provisions regarding land administration (referred to in the Act as "management") are adequately detailed in the Act which also creates a series of land administration institutions consisting of Parish Land Committees, District Land Boards and Uganda Land Commission. Each of these entities is largely autonomous of one another and is entrusted with functions that range from the holding of lands not subject to private ownership. (Sections 47-74). The Land Act provides for a decentralized system to resolve land disputes in Uganda (sections 75-90) through establishment of Land Tribunals at all levels of local government and that they should first arbitrate land disputes before resorting to legal courts of law.

5.3.5 Land Acquisition Act, 1965

The Act requires that adequate, fair and prompt compensation is paid before taking possession of land and property. Dispute arising from the compensation to be paid should be referred to the court for decision if the Land Tribunal cannot handle.

Relevance; the key consideration regarding this Act in the project is to ensure land owners affected by the project are adequately and timely compensated. All land acquisitions, if any, regarding this road project will be guided by this Act.

5.3.6 Local Government Act, Cap 243

Local Governments Act, 1997 establishes a form of government based on district as the main unit of administration. Districts are given legislative and planning powers under this Act. (Sections 36- 45) They are also enjoined to plan for conservation of the environment within their local areas. District Environmental Committees established under section 27-28 of the National Environment Act 2019 have pertinent mandates to guide district authorities in environmental matters

Relevance: In line with this act, all the roads to be upgraded fall under the jurisdiction of Buliisa District local government. The district is mandated to oversee all activities of Lower Local Government including Environment, Social, Health and Safety in the District and will thus play an important role to ensure successful implementation of the project.

5.3.7 Employment Act, 2006

Employment Act, 2006 repeals Employment Act (Cap 219) enacted in 2000 and it is the principal legislation that seeks to harmonise relationships between employees and employers of the contracted company to upgrade the proposed road, protect workers interests and welfare and safeguard their occupational health and safety through:

- Prohibiting forced labour, discrimination and sexual harassment at workplaces (Part II; Part IV).
- Prohibiting employment of persons under the apparent age of eighteen years, otherwise than as provided in this Act. (Part VI)
- Providing for labour inspection by the relevant ministry (Part III).
- Stipulating rights and duties in employment (weekly rest, working hours, annual leave, maternity and paternity leaves, sick pay, etc. (Part VI).
- Continuity of employment (continuous service, seasonal employment, etc. (Part VIII).

Relevance: The project will employ a sizeable work force from within the project area and beyond. It will be the responsibility of the contractor to ensure that working conditions of the labour force are in compliance to the requirements of this Act.

5.3.8 Occupational Safety and Health Act, 2006

The Occupation Safety and Health Act, Section 13, puts the responsibility of protection of the worker and the general environment to the employer and he or she must take all measures to protect the worker and the general public from the dangerous aspects of his or her undertaking. In section 18, he or she also has the responsibility of monitoring the environment under the influence of his or her undertaking. In section 95, it requires the employer to take all preventive measure including administrative and technical measures to prevent or reduce contamination of the working environment to the level of exposure limits specified by the commissioner.

It also pleas in section 14 (1) that the contractor with more than 20 workers should;

a) Prepare, and as often as may be appropriate, revise a written statement of policy with respect to the safety and health of employees while at work;
b) Make arrangements for carrying out the statement policy
c) Bring the statement of policy and any revision of it to the notice of all the employees.

Section 19 (2) skeletons that it is the duty of contractor to ensure that personal protective equipment provided under subsection (1) is used whenever it is required. Section 25, mandates that the contractor under; subsection (a) to display or provide guide safety precautions to any persons who may be affected by the manner in which the project work scope and activities are undertaken, whether or not that person is his or her worker; subsection (b) to display all information in his or her possession or control concerning the way in which he or she conducts the undertaking, which may affect workers health or safety.

Occupation Safety and Health Act also requires that the project construction area should be registered under section 41 (1) and upon receipts of notice in accordance with section 40, the commissioner will cause, after the appropriate fee is paid, a workplace to be registered and will to an occupier a certificate of registration, in his or her name, in a form prescribed in schedule 4. However, section 49; emphasizes gender sensitivity as per sanitary facilities accentuating that where persons of both sexes are to be employed;

i. Proper, separate accommodation for persons of each sex;
ii. Separate approaches for each sex; and
iii. The convenience for each sex will be indicated by a suitable notice

Relevance to this Project: This Project will require a sizeable workforce during the construction phase hence the Act requires the contractor to ensure that workers have a safe working environment at all times and that their health is not at risk as a result of the working environment. The contractor therefore is obliged to provide employers with washing facilities, First Aid, facilities for meals and safe access to workplaces. In duty to create a safe working environment and reduced health risk during construction phase, the contractor will be required by to formulate an ESHS plan.

5.3.9 Workers' Compensation Act, Cap 225

This Act shall apply to all employment within Uganda. and shall apply to workers employed by or under the Government of Uganda in the same way and to the same extent as if the employer were a private person, but the Act shall not apply to active members of the armed forces of Uganda. If personal injury by accident arises out of and in the course of a worker's employment, the injured worker's employer shall be liable to pay compensation in accordance with this Act. The employer shall not be liable in respect of an injury which does not either result in permanent incapacity or incapacitate the worker for at least three consecutive days from earning full wages at the work at which he or she was employed.

Relevance: considering that road construction activities are associated with occurrence of various accidents, this law should be applied in case of any injuries arising to any of the workers in the due course of construction activities.

5.3.10 NSSF Act, Cap 222

The National Social Security Fund is a mandatory pure defined contribution provident fund which pays lump sums at retirement. The contribution rate to NSSF is 15% shared at 5% and 10% between the employee and employer respectively. The scheme was created by the National Social Security Fund Act (Cap 222) Laws of Uganda and its core objective is to protect formal employees against uncertainties of social and economic life.

Relevance: The contractor shall ensure that all permanent and eligible employees should be subject to NSSF registration and their contributions promptly remitted.

5.3.11 Labour Disputes (Arbitration and Settlement Act) 2006

This Act provides for matters relating to the management of industrial relations and settlement of labour related disputes. Under section 3 and 4, the act establishes the office of the Labour Officer and requires referral of labour disputes to the Labour Officer who should ensure timely reaction. Under section 7, the Act

establishes an Industrial Court to arbitrate on labour disputes and adjudicate upon questions of law and fact arising for references to Industrial court by any other law.

Relevance: The construction of the roads shall employ several employees and may also employ subcontractors providing various services. Any dispute settlement between the contractor, subcontractors and employees will be managed in accordance with this Act.

5.3.12 Physical Planning Act, 2010

The roads developments are aimed at increasing rural accessibility to markets and services, prepare selected key urban centres for growth and provide economic infrastructure targeting key sectors in the region. The infrastructural developments are likely to traverse areas of special characteristics. The areas have special physical, social economic and development potential and considerations. Section 3 of the Physical Planning Act 2010 declares the whole country a planning area and brings it under the planning control.

Relevance: Provisions under the Act will have to be invoked by the mandated institutions to control developments in urban and rural areas to control unplanned developments. Buliisa district local government was engaged in the studies to ensure that the roads construction project aligns with the physical plans of the district.

5.3.13 Public Health Act, cap 281

This Act aims at avoiding pollution of environmental resources that support health and livelihoods of communities. The Act gives local administrative units (Section 103) mandate to prevent pollution of watercourses in interest of public good.

Relevance: This Act will not only be relevant in regard to the watercourses along or in the vicinity of the roads but also land where workers camps, equipment yards will be located.

5.3.14 Road Act, Cap 358

The Road Act (Cap 358 of the Laws of Uganda) provides for the establishment of road reserves and for the maintenance of roads by empowering the responsible Minister of Works and Transport to declare road reserves by Statutory Instrument.
Section 2 and 3 provisions are provided below;

2. Declaration of road reserve.

The Minister may by statutory instrument declare an area bounded by imaginary lines parallel to and distant not more than fifty feet from the centre line of any road to be a road reserve.

3. Road reserves to be kept clear.

Subject to any order which may be made under section 4, no person shall, except with the written permission of the road authority, erect any building or plant any tree or permanent crops within a road reserve.

Relevance: the need for Government (Uganda National Roads Authority) to maintain basic control over developments along the road is to ensure that basic necessities of maintaining road geometry and engineering needs such as sight lines, horizontal curvatures, sight distances and road safety considerations. Also, it is in road reserves that utilities (electricity transmission lines and water mains) are installed. However,

this control is exercised with flexibility in order to minimise social-economic consequences arising from use of road reserves for cultivation by rural communities.

5.3.15 Traffic and Road Safety Act Cap 361, 1998

The Act provides for administration, registration and licensing of motor vehicles, driving permits, licenses for public service, private omnibus and goods vehicles, use of motor vehicles, control of traffic, enforcement, and information on the national roads and safety council
This Act gives guidance to management of safety during implementation and use of the proposed roads.

Relevance: Construction of the roads shall involve operation of various equipment and vehicles. The relevant licenses shall be obtained for the contractor vehicles that will be used on the road.

5.3.16 The Children's Act, Cap 59

The Children's Act was enacted; to reform and consolidate the law relating to children; to provide for the care, protection and maintenance of children; to provide for local authority support for children; to establish a family and children court; to make provision for children charged with offences and for other connected purposes.
In particular, Section 8 of this Act provides that no child will be employed or engaged in any activity that may be harmful to his or her health, education or mental, physical or moral development.

Relevance to this Project: The project will require workers during construction phase and there will not be any employment or engagement of children as per restrictions of the Employment Act to ensure that risks to children are either eliminated or reduced to as low as reasonably practicable as prescribed under the Children's Act, cap 59. In addition, the contractor will confirm age of potential local labourers prior to hiring through National Identity Card, birth certificate or confirming with Local Authority.

5.3.17 The Domestic Violence Act 2010

This Act provides for the protection and relief of victims of domestic violence; punishment of perpetrators of domestic violence and empowerment of the family and children court towards handling domestic violence cases and related matters.

Relevance; construction activities will involve interaction of workers recruited from different parts of the country with different behaviours. Construction workers earn disposable income and usually do not move to project areas with their partners. As such, they may engage in sexual relations with married men/women in the communities and give rose to domestic violence in such homes. Violent acts are also possible among workers themselves and these may manifest in terms of sexual abuse and harassment and physical assault among others. The contactor shall implement all measures possible to minimize domestic violence in accordance to this Act.

5.3.18 Historical Monuments Act, Cap 46

This Act provides for the preservation and protection of historical monuments and objects of archaeological pale-ontological ethnographical and traditional interests. Under this Act, the Minister has wide ranging powers to protect any of the above objects and under Section 8, no person whether owner or not shall cultivate or plough the soil so as to effect to its detriment any object declared to be protected or preserved, and no

alteration is permitted on any object declared to be protected or preserved. And under Section 11, any person who discovers any object which may reasonably be considered to be a historical monument or an object of archaeological, pale-ontological, ethnographical, and traditional interests is required to report it to the Conservator of Antiquities within 14 days of the discovery.

Relevance: All cultural sites within the project area should be preserved during execution of the road project. The Act shall also be applied in cases of "chance finds" that could be encountered during earthworks on the project roads and sites for ancillary facilities.

5.3.19 The Penal Code Act, Cap 120 (as Amended, 2007)

The Penal Code Act, 1950 was amended in 2007 and only a few sections were replaced, amended and/or repealed. The following is relevant to this project: the principal Act was amended by substituting for section 129 a section for "Defilement of persons under eighteen years of age. Section 129 (1) spells out the punishment for defilement; Any person who performs a sexual act with another person who is below the age of eighteen years, commits a felony known as defilement and is on conviction liable to life imprisonment.

Relevance: The project will fetch a lot of workers from different regions. There being a number of schools along the roads, this will pose a risk on the school going children. The penal code defines all crimes and their respective penalties. Therefore, any worker or sub-contractor shall have to abide by the existing laws and any one that breaks the law shall be dealt with according to the Act. The Local Councils and Uganda Police shall be involved in project operations and the contractor shall be required to cooperate with these entities to ensure crime control in regards to project operations.

5.3.20 Uganda National Meteorological Authority (UNMA) Act 2012

Among other functions, this Act provides for the control and development of technically sound and scientific meteorological services; and to give effect to the convention on the World meteorological Organization; The United Nations Framework Convention on Climate Change, protocols and Memoranda of understanding to which Uganda is a party.
It also provides for the establishment of the Uganda National Meteorological Authority; an institution responsible for establishing and maintaining weather and climate observing stations network, collection, analysis and production of weather and climate information, (including warnings/advisories) to support social and economic development
On the other hand, Weather conditions in turn also severely affect all rigging operations. Therefore, the contractor thoroughly needs to consider weather conditions while planning and executing their operations. Heavy wind, dust or fog can cause serious injuries to the workers and also heavily damage rigging hardware. Weather conditions affect the stability, design and performance of the structure. The contractor needs to make note of such conditions as most of its operations are performed in the open and subject to all kinds of weather. This means there is a far bigger risk involved for the rigging equipment and the workers using it.

Relevance; the Act will be relevant to the road development efforts, for prediction of the appropriate weather for various construction activities. The Act will as well guide on appropriate mitigation measures for impacts that are likely to cause changes in the weather and consequently the climate of the project area.

5.3.21 Mining Act, 9/2003

Several auxiliary activities are associated with Road construction. These include stone quarrying and borrow materials extraction. Such activities especially stone quarrying involves excavations or working where any operations are connected with mining including erections and appliance used in connection with such operations. These activities, therefore, are a subject of this Act.
Requirements under Part XI for the Protection of the Environment under the Act are therefore, relevant. Such requirements include Environmental Impact Assessment and Audits and Environmental standards for the prevention and minimization of pollution of the environment and waste management. Under section 110 (2b) gives guidance on restoration activities.
It provides that the environmental restoration plan shall include a detailed timetable for accomplishment of each major step to be carried out under the restoration plan which may include reinstatement, levelling, re-vegetation, reforesting and contouring of disturbed land, the filling in, sealing, or fencing off of excavations, shafts and tunnels.

Relevance: The project should ensure that relevant assessment/ studies are conducted for all auxiliary sites especially quarries and borrow pits and will be restored basing on the guidance on restoration activities.

5.4 Regulatory Framework

5.4.1 Environmental Impact Assessment Regulations, 1998

The Environmental Impact Assessment Regulations, 1998 under the National Environment Act, Cap 153 provides guidance on EIAs preparation and approval process. Of specific relevance to future potential development projects in the area, which could be considered for ESIA, regulation 14 of the EIA Regulations gives guidance on the contents to be included in the ESIA.

5.4.2 National Environment (Noise Standards and Control) Regulations, 2003

Part III Section 8 (1) requires machinery operators, to use the best practicable means to ensure that the emission of noise does not exceed the permissible noise levels. The regulations require that persons to be exposed to occupational noise exceeding 85 dBA for 8 hours should be provided with requisite ear protection. This regulation would be specifically important at stone quarry sites and in regard to protection of road construction crews from occupational noise.

Table 5-1: Regulatory noise limits (Uganda)

Facility	Noise limits dB (A) (Leq)	
	Day*	Night*
Construction sites	75	65
Any building used as hospital, convalescence home, home for the aged, sanatorium and institutes of higher learning, conference rooms, public library, environmental or recreational sites.	45	35
Residential buildings	50	35
Mixed residential (with some commercial and entertainment)	55	45
Residential + industry or small-scale production + commerce	60	50

*Time frame: Day 6.00a.m -10.00 p.m.; Night 10.00 p.m. - 6.00 a.m.

Source: The National Environment (Noise Standards and Control) Regulations, 2003.

Relevance; Road construction woks should ensure that noise levels generated will not exceed the above noise level limits.

5.4.3 National Environment (Waste Management) Regulations, 1999

These regulations require waste disposal in a way that would not contaminate water, soil, and air or impact public health. Road construction projects are characterised with a diversity of wastes ranging from hazardous wastes to simple domestic wastes. Some of these hazardous wastes include; oil filters, used oils, spoil bitumen, oil drums to mention but a few. Management of these hazardous wastes has been provided for in this law. This is in relation to onsite storage, haulage and final disposal. According to the regulations, waste haulage and disposal should be done by licensed entities.

Relevance: the regulations promote cleaner production methods that enable the recovery and reuse of wastes, reclamation and recycling. Further the regulations would influence management of solid waste at workers camps, equipment yards and road construction site.

5.4.4 National Environment (Wetlands, River Banks & Lakeshores management) Regulations, 2000

These regulations provide principles for sustainable use and conservation of wetlands, and riverbanks. The relevance of these regulations to the ESIA study is embedded in the following requirements:

- ESIA is mandatory for all major activities on riverbanks and lakeshores (e.g. culverts in swamp crossings),
- Measures such as preventing soil erosion, siltation and water pollution, should be put in place for protection of riverbanks and wetlands (swamps).

Relevance; these regulations are important considering that the roads in Butiaba Town Council lead to landing sites on L. Albert.

5.4.5 Draft National Air Quality Standards, 2006

Considering that drilling operations are powered by diesel electricity generators, pollutants such as CO_x, NO_x, SO_x, VOC and particulates are expected to be emitted. The draft national air quality standards provide the following regulatory limits for these emissions Table below.

Table 5-2: Regulatory air quality standards for selected pollutants

Pollutant	Average time for ambient air	Standard for ambient air
Carbon dioxide (CO_2)	8 hr	9.0 ppm
Carbon monoxide (CO)	8 hr	9.0 ppm
Hydrocarbons	24 hr	5 mgm^{-3}
Nitrogen oxides (NO_x)	24 hr 1-year arithmetic mean	0.10 ppm

Pollutant	Average time for ambient air	Standard for ambient air
Smoke	Not to exceed 5 minutes in any one hour	Ringlemann scale No.2 or 40% observed at 6m or more
Soot	24 hr	500 µg/Nm^{-3}
Sulphur dioxide (SO_2)	24 hr	0.15 ppm
Sulphur trioxide (SO_3)	24 hr	200 µg/Nm^{-3}

Note: ppm = parts per million; "N" in µg/Nm^{-3} connotes normal atmospheric conditions of pressure and temperature (25^{o}C and 1 atmosphere).

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

Section 6 (2) provides for the maximum permissible limits for 54 regulated contaminants, which must not be exceeded before effluent is discharged into water or on land. The national discharge limits for selected contaminants are given in Table 5-3. Through limits on over 54 parameters, these regulations control discharges in surface watercourses.

Table 5-3: National discharge standards for selected pollutants

Parameter	National discharge standards
BOD_5 (mg/l)	50
Suspended solids (mg/l)	100
Faucal coliforms	10,000 counts/ 100ml
Chlorine residual (mg/l)	1 mg/l
pH	6-8
Phenols (µg/l)	0.2 mg/l
Oil and grease (mg/l)	10 mg/l
Total Phosphorus (mg/l)	10 mg/l
Temperature	20-35^{o}C

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

Relevance; some of the roads to be upgraded in Butiaba Town Council lead to landing sites on L. Albert. Section 4 of this regulation requires facilities to install pollution control equipment for onsite management of waste, effluent and emissions. These regulations will influence management of effluent generated at workers camps and equipment yards to prevent discharge of effluent into the lake.

5.4.7 National Environment (Audit) Regulations, 2006

Regulation 8 provides that the owner /operator of facility whose activities are likely to have a significant impact on the environment shall establish an environment management system.

Relevance: The road construction contractor should develop an Environmental Management System, as a contractual obligation and a basis for regular environmental audits. Furthermore, a comprehensive audit needs to be instituted for the project operations.

5.4.8 National Environment (Control of Smoking in Public Places) Regulations, 2004

Second hand smoke (SHS) is a complex mixture of more than 4,800 chemical compounds, including 69 known carcinogens. WHO indicates “scientific evidence has unequivocally established that exposure to tobacco smoke causes death, disease and disability”. According WHO, SHS is a human carcinogen for which there is no “safe” exposure level1.
To avoid public health risk from SHS, Uganda enacted a law: National Environment (Control of Smoking in Public Places) Regulations 2004 to regulate smoking in public places. Under this law, a public place is defined as, "any place to which members of the general public or segments of the general public ordinarily have access by express or implied invitation and includes any indoor part of a place specified in this schedule" and these places include, office buildings, work places, eating areas, toilets and public service vehicles. The regulations task owners of such places to designate "NO SMOKING" and "SMOKING AREAS" in premises.

Relevance; these regulations should apply to areas communally used by construction workers such as site offices, eating areas in camps and workers transport vehicles. Requirements of these regulations should be fulfilled to avoid exposure of workers to tobacco SHS and associated health risks.

5.5 International Conventions and/or Agreements to which Uganda is Party

Uganda is a signatory to a number of International Agreements which are relevant to supporting the National efforts in environmental management and the welfare of communities. They are relevant to the road construction sector / efforts provided they support or are in consonance with the applicable Laws and Regulations in Uganda. The sections below describe some of these agreements/conventions.

5.5.1 The Convention on Biological Diversity (CBD)

The aim of the CBD is to effect international cooperation in the conservation of biological diversity and to promote the sustainable use of living natural resources worldwide. It also aims to bring about the sharing of the benefits arising from the utilization of natural resources. Parties to this convention are required to undertake EIA for projects likely to have significant adverse effects on biodiversity and develop national plans and programs for conservation and sustainable use of bio diversity.

5.5.2 UNESCO World Heritage Convention, 1972:

In the International arena, the legal regime regarding Cultural Heritage basically emanates from the UNESCO World Heritage Convention, 1972. The convention is concerned with the protection of the World Cultural and Natural Heritage. This convention gives the basis of recommendations developed by experts to conserve Cultural Heritage. Uganda, the country within which this road project is to be constructed, is a member of UNESCO and as such is bound by the recommendations made by the convention in the protection of Cultural Heritage. This regulation covers all chance findings on the project.

5.5.3 The Ramsar Convention on Wetlands, 1971

The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Uganda is a Contracting Party to the Ramsar Convention.

The Murchison Falls-Albert Delta Wetland System covering 17,293 Ha was designated a Ramsar site (Ramsar site no. 1640). The Ramsar site stretches from the top of Murchison Falls, where the Victoria Nile flows through a rock cleft 6 m wide, to the delta at its confluence with Lake Albert. The convergence between Lake Albert and the delta forms a shallow area important for water birds, especially the shoebill, pelicans, darters and various heron species.
As part of the decision-making process, the ESIA outcomes giving impact ratings and mitigation measures relevant to the Ramsar site will need to be considered in the context of the Ugandan government's responsibilities to the Ramsar Convention as a contracting party.

5.5.4 The African Convention on the Conservation of Nature and Natural Resources, 1968

The contracting states to this Convention are required to undertake / to adopt measures to ensure conservation, utilization and development of soil, water, flora and fauna resources in accordance with scientific principles and with due regard to the best interest of the people. The States are also required to ensure that the conservation and management of natural resources are treated as an integral part of National and /or Regional Development Plans. In addition, during the formulation of all development plans, full consideration is required to be given to ecological, as well as to economic and social factors.

5.5.5 The Convention for the Safeguarding of the Intangible Cultural Heritage, 2003

The Convention calls on States that have ratified it to Safeguard Living Heritage on their own territories and in cooperation with others. It seeks to celebrate and safeguard the intangible heritage distinctive for particular communities. It affirms that the intangible heritage of all communities – whether they are large or small, dominant or non-dominant – deserve respect.
The Convention defines "intangible Cultural heritage" as the practices, representations, expressions, knowledge, skills as well as the instruments, objects, artifacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their Cultural Heritage. This Intangible Cultural Heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.
The Road Project therefore will be required not to disrupt the Living Heritage but will be expected to safeguard it so as to ensure that the heritage where it exists continues to be practiced and transmitted within the community or group concerned. Communities should be actively involved in safeguarding and managing their Living Heritage, since it is only them who can consolidate its present and ensure its future.

5.5.6 The United Nations Framework Convention on Climate change (UNFCCC), 1992

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty negotiated at the Earth Summit in Rio de Janeiro from 3 to 14 June 1992, then entered into force on 21 March 1994. UNFCCC has 197 parties as of December 2015 of which Uganda is a member. Its sister Rio Conventions are the UN Convention on Biological Diversity and the Convention to Combat Desertification. Preventing "dangerous" human interference with the climate system is the ultimate aim of the UNFCCC.
Therefore, all road works should maintain the ecological integrity of the habitat by avoiding activities that could enhance climate change especially massive tree cutting.

5.5.7 The Stockholm Convention

The Convention seeks to protect human health and the environment from persistent organic pollutants (POPs). Uganda acceded to the Convention on 20th July 2004. Among the pollutants, controlled under the Convention are unintentionally released persistent organic pollutants. The National Implementation Plan (NIP) developed under the Convention in December 2008, to eliminate and minimize the impacts of (twelve) 12 of the most harmful hazardous chemicals in the world, identifies over 70% of the unintentionally released POPs to be a result of uncontrolled open burning of waste. The Plan, therefore, recommends reduction of unintentionally released POPs through emission at source by promoting cleaner production methods and Best Available Techniques and Best Environmental Practices. Management of waste under the project will have to be undertaken in line with this requirement by avoiding burning of waste, among others.

5.5.8 The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal

The Basel Convention is a global treaty aimed at protecting human health and the environment from risks posed by hazardous wastes and their transboundary movement. The treaty was adopted in 1989, came into force in 1992 and Uganda acceded to it on 11th March 1999. The overall goal of the Basel Convention is to protect, by strictly controlling, human health and the environment against the adverse effects which may result from the generation, transboundary movement and management of hazardous and other wastes. When hazardous wastes are dumped indiscriminately, spilled accidentally or managed improperly, they can cause severe health problems, or even death, and poison water and land for decades. All chemicals used in Road constructions will be managed in accordance to this convention.

5.5.9 The UN Conventions on the Rights of Persons with Disabilities, 2008

The Convention on the Rights of Persons with Disabilities is an international human rights treaty of the United Nations intended to protect the rights and dignity of persons with disabilities. Parties to the Convention are required to promote, protect, and ensure the full enjoyment of human rights by persons with disabilities and ensure that they enjoy full equality under the law. The Convention has served as the major catalyst in the global movement from viewing persons with disabilities as objects of charity, medical treatment and social protection towards viewing them as full and equal members of society, with human rights. It is also the only UN human rights instrument with an explicit sustainable development dimension. The Convention was the first human rights treaty of the third millennium.

5.5.10 International Convention on Economical Social and Cultural Rights

The International Covenant on Economic, Social and Cultural Rights is a multilateral treaty (of which Uganda is a member) adopted by the United Nations General Assembly on 16 December 1966, and in force from 3 January 1976. It commits its parties to work toward the granting of economic, social, and cultural rights (ESCR) to the Non-Self-Governing and Trust Territories and individuals, including labour rights and the right to health, the right to education, and the right to an adequate standard of living. As of 2015, the Covenant has 164 parties.

5.5.11 Convention on Elimination of All Forms of Discrimination against Women

The Convention on the Elimination of all Forms of Discrimination against Women is an international treaty adopted in 1979 by the United Nations General Assembly. Described as an international bill of rights for women, it was instituted on 3 September 1981 and has been ratified by 189 states including Uganda. Article 1 defines discrimination against women as; any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field. Therefore, all forms of discrimination against women during implementation of all road project activities shall be condemned.

5.5.12 Convention on Protection of Migrant Workers

The International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families is a United Nations multilateral treaty governing the protection of migrant workers and families. Signed on 18 December 1990, it entered into force on 1 July 2003 after the threshold of 20 ratifying States was reached in March 2003. The Committee on Migrant Workers monitors implementation of the convention, and is one of the seven UN-linked human rights treaty bodies.
Implementing Contractors of this road project may have foreign workers whose rights need to be protected.

5.5.13 United Nations Conventions on the Rights of the Child and its Optional Protocols and Declarations on Children

The United Nations Convention on the Rights of the Child (commonly abbreviated as the CRC or UNCRC) is a human rights treaty which sets out the civil, political, economic, social, health and cultural rights of children. The Convention defines a child as any human being under the age of eighteen, unless the age of majority is attained earlier under national legislation.
Two optional protocols were adopted on 25 May 2000. The First Optional Protocol restricts the involvement of children in military conflicts, and the Second Optional Protocol prohibits the sale of children, child prostitution and child pornography. Both protocols have been ratified by more than 160 states including Uganda.

5.6 World Bank Operational Policies

World Bank being the financer, its Environmental and Social Safeguard Policies were referenced as per project planning, implementation on grounds of best practices for the success of the project. The objective of the World Bank's environmental and social safeguard policies is to prevent and mitigate undue harm to people and their environment during the development process. These policies provide guidelines for bank and borrower staff in the identification, preparation, and implementation of programs and projects. Safeguard policies provide a platform for the participation of stakeholders in project design, and are an important instrument for building ownership among local populations (World Bank, 2006). Table 5-4 presents the triggered World Bank policies.

Table 5-4: Identified project triggered World Bank Operational Policies

Triggered WB-OPs	Description/ Relevance
OP 4.01, Environmental Assessment	This policy states that all projects proposed for WB financing require and environmental assessment to ensure that they are environmentally and socially sound and sustainable and support integration of environmental and social aspects of projects into the decision-making process. The Policy categorizes WB Projects as 'A', 'B', 'C' or 'FI' depending on the potential project impacts and implementation modalities. *Relevance: The project will entail civil works related to upgrading of roads with associated environmental and social impacts from the construction and operation of these roads. The proposed project is categorised under category B because the impacts on human populations or environmentally important areas are few and less adverse; site-specific; and mitigatory measures are available. An Environmental and Social Impact Assessment has been undertaken by the Proponent to establish a detailed Environmental and Social Management Plan that will provide guidelines for environmental stewardship of the construction and operational phases of the Project.*
OP 4.04, Natural Habitats	This policy affirms WB's commitment to promote and support natural habitat conservation and improved land use, and the protection, maintenance, and rehabilitation of natural habitats and their functions in its project financing. *Relevance:* There were no sensitive ecological receptors along the proposed road corridors, except the marginal wetland areas at the pier in Butiaba, and some marshes along the access to the Health Centre III, in Butiaba Town Council as per *project ecological studies. However, project activities such as; site clearance is anticipated to lead to loss of vegetation along the routes hence the need for developing appropriate conservation and mitigation measures that minimize ecological habitat loss during the construction phase especially in the cited wetlands.*
OP 4.11 Physical Cultural Resources	This policy aims to assist in preserving physical cultural resources and avoiding their destruction or damage. PCR includes resources of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic, or other cultural significance. *Relevance: It prompted identification of all PCR and various cultures in the project area through archaeological studies and Social- cultural baseline studies in the project area during the ESIA.* The *civil/earth works will involve excavations, which is likely to occasion accidental discoveries of PCRs. Therefore, a Chance Finds Procedure has been prepared as part of this ESIA to provide guidance on their handling and management.*
OP 4.12 Involuntary Resettlement	This Policy is applied wherever land, housing or other resources are taken involuntarily from people. It sets out the objectives to be met and procedures to be followed for carrying out baseline studies, impact analyses, and mitigation plans when affected people move or lose part of their livelihoods. This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by (a) the involuntary taking of land resulting in (i) relocation or loss of shelter. *Relevance: The Buliisa T/C authorities have been engaging the land/plot owners adjacent to the road to confirm that they do not have any claim over the RoW (land between their plots and centre of the road); this exercise has been successfully done with support from MLHUD. There are only 02 temporal structures (grass-thatched houses) in the RoW in Buliisa T/C. The owners of these structures have been engaged by the T/C authorities and have consented to move their structures off the RoW; the T/C is committed to providing logistical support to effect this voluntary movement. No compensation claims are being*

Triggered WB-OPs	Description/ Relevance
	fronted by the members of the public. The T/C will also draft a relocation procedure which shall be submitted to MLHUD.

5.6.1 World Bank Group EHS General Guidelines

The World Bank Group EHS General Guidelines (Table 5-5), dated April 2007, contain the performance levels and measures generally considered to be achievable at reasonable costs by existing technology. The EHS General Guideline's is a technical reference document with general and industry-specific examples of Good International Industry Practice.

Table 5-5: Organization of General EHS Guidelines

General EHS Guidelines	Applicability
Environmental	
Air Emissions and Ambient Air Quality	WHO Ambient Air Quality Guidelines will be referenced during monitoring of construction activity generated air emissions/dust visa via the draft National Air Quality Standards, 2006
Energy Conservation	These guidelines apply to projects that consume energy in process heating and cooling; process and auxiliary systems, such as motors, pumps, and fans; ventilation and air conditioning systems (HVAC); and lighting systems. Mainly at the construction camp site and construction equipment.
Wastewater and Ambient Water Quality	Will guide development of a water quality monitoring program for the sited wetlands along the proposed route. This will be enforced through acquisition of a Water abstraction permit from DWRM
Water Conservation	
Hazardous Materials Management	These guidelines apply to projects that use, store, or handle any quantity of hazardous materials, such as flammable liquids (fuel), used oils. These will guide the contractor in development of oil spill contingency plan and acquisition of a Storage of Hazardous License from NEMA.
Waste Management	These guidelines apply to projects that generate, store, or handle any quantity of waste such as anticipated waste from workers camps, equipment yards and road construction site. The guidelines call for waste management to be addressed through a Waste management system that addresses issues linked to waste minimization, generation, transport, disposal, and monitoring, hence the need for a contractors Waste management plan.
Noise	Noise Level Guidelines will be referenced during monitoring of construction activity generated noise visa via the National Environment (Noise Standards and Control) Regulations, 2003.
Contaminated Land	These guidelines provide management approaches for land contamination due to anthropogenic releases of hazardous materials, wastes, or oil from the construction project. These will guide the contractor in development of oil spill contingency plan and acquisition of a Storage of Hazardous License from NEMA.
Occupational Health and Safety	
General Facility Design and Operation	These guidelines call for integration of appropriate protection against the climate, and have acceptable light and noise conditions for structure safety such as the camp site.

General EHS Guidelines	Applicability
Communication and Training	These guidelines call for OHS Training, Visitor Orientation, New Task Employee and Contractor Training, Communicate Hazard Codes, Area Signage to be included in the Occupational Health and Safety management Plan for the project.
Physical Hazards	Physical hazards represent potential for accident or injury or illness due to repetitive exposure to construction mechanical action or work activity. Occupational Health and Safety management Plan for the project will have to have a procedure for identification, assessment, mitigation, and monitoring of project related physical hazards such from; Rotating and Moving Equipment, Noise, Vibration, Welding Work
Chemical Hazards	Chemical hazards represent potential for illness or injury due to single acute exposure or chronic repetitive exposure to toxic, corrosive, sensitizing or oxidative substances. Occupational Health and Safety management Plan for the project will have to follow the hierarchical approach in preventing chemical hazards.
Biological Hazards	Biological agents represent potential for illness or injury due to single acute exposure or chronic repetitive exposure. These guidelines call the project to have a preparedness and response plan for various disease, mainly related to sanitization and other contagious diseases such as COVID19.
Personal Protective Equipment	These guidelines will be referred to in acquisition of recommended Personal Protective Equipment according to hazard.
Monitoring	These guidelines call for project Occupational health and safety monitoring programs that verify the effectiveness of prevention and control strategies with selected indicators representative of the most significant occupational, health, and safety hazards.
Community Health and Safety	
Water Quality and Availability	Drinking water sources, such as the identified Community borehole along Magali Road should at all times be protected so that they meet or exceed applicable national acceptability standards or in their absence the current edition of WHO Guidelines for Drinking-Water Quality.
Structural Safety and Project Infrastructure	The guidelines where adopted during design phase; road structural design, layout and site modifications aimed at reduction of potential hazards. They will also guide in development of Occupational Health and Safety management Plan for the project with consideration of Hazards posed to the public while accessing project site
Life and Fire Safety	The guidelines call for the project campsite buildings to be designed, constructed, and operated in full compliance with local building codes and in accordance with an internationally accepted life and fire safety (L&FS) standard. They will also guide in development of Emergency Response and Preparedness Plan for the project with consideration of fire hazards.
Traffic Safety	The guidelines call for promotion of traffic safety by all project personnel during displacement to and from the workplace, and during operation of project equipment on private or public roads. They will also guide in development of Traffic Management Plan.
Transport of Hazardous Materials	The guidelines call for projects to have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials. It is therefore imperative that the contractor procures services of a NEMA

General EHS Guidelines	Applicability
	registered hazardous waste handler to undertake Collection, transportation and disposal any project generated Hazardous waste such as; used oils.
Disease Prevention	The guidelines recommended preventive interventions for communicable diseases, such as STDs (HIV/AIDs) and vector-borne disease that will be integrated at the project level through various plans, such as; HIV and other STIs Prevention and Management Plan, COVID19 preparedness and response plan.
Emergency Preparedness and Response	The guidelines recommend the project to bear an Emergency Preparedness and Response Plan that is commensurate with the risks of the project activities and that includes the following basic elements; Administration, Organization of emergency areas, Roles and responsibilities, Communication systems, Emergency response procedures, Emergency resources, Training and updating, Checklists, Business Continuity and Contingency.
Construction and Decommissioning	
Environment	The guidelines provide additional, specific guidance on prevention and control of project impacts on the environment such as; Noise and Vibration, Soil erosion, Air Quality, Solid Waste that may occur at the end of the project life-cycle,
Occupational Health and Safety	The guidelines provide additional, specific guidance on prevention and control of Occupational Health and Safety related impact such as; Over-exertion, and ergonomic injuries and illnesses, Slips and Falls, Work in Heights, Moving Machinery, dust that may occur at the end of the project life-cycle,
Community Health and Safety	The guidelines recommend that the project should implement risk management strategies, such; Disease prevention and Traffic safety as to protect the community from physical, chemical, or other hazards associated with sites under construction and decommissioning

5.6.2 World Bank Group EHS Guidelines for Construction Materials Extraction

The World Bank Group EHS Guidelines for Construction Materials Extraction, dated April 2007, include information relevant to construction materials extraction activities such as aggregates, sand, and gravel. It addresses stand-alone projects and extraction activities supporting construction and civil works projects. These Guidelines include the following specific topics:

i) Industry-Specific Impacts and Management
   - *Environment*; Air Emissions, Noise and Vibrations, Water, Waste, Land Conversion
   - *Occupational Health and Safety*; Respiratory hazards, Noise, Physical hazards
   - *Community Health and Safety*; Land instability, Water, Explosives safety, Decommissioning

ii) Performance Indicators and Monitoring
   - *Environment;* Emission and Effluent Guidelines, Environmental Monitoring
   - *Occupational Health and Safety*; Occupational Health and Safety Guidelines, Accident and Fatality Rates, Occupational Health and Safety Monitoring

Relevance: The guidelines will be benchmarked on during material extraction, stone quarry dimensioning and relevant assessment studies for quarries and borrow pits for the proposed project.

5.7 Institutional Framework

5.7.1 Ministry of Lands, Housing and Urban Development (MLHUD)

Through its three directorates (Directorate of Land Management, Directorate of Physical Planning and Urban Development, and Directorate of Housing), MLHUD is mandated to ensure a rational: sustainable and effective use and management of land and orderly development of urban and rural areas as well as safe, planned and adequate housing for socio-economic development.

The Ministry of Lands, Housing and Urban Development (MLHUD) is the implementing agency for component 2 of ARSDP in collaboration with Buliisa and Hoima Districts, And shall therefore ensure effective project implementation, value for money and consistency of the implemented roads with local and national frameworks including ensuring proper implementation of safeguards and overall procurement of competent contractors and strict contract management.

As a developer on the other hand, MLHUD is required to comply with national environmental laws including undertaking EIA for the project roads.

5.7.2 Ministry of Local Government

The Ministry of Local Government (MOLG) is responsible for the creation, supervision and guidance of sustainable, efficient and effective service delivery in the decentralized system of governance. The ministry is responsible for the harmonization and support of all local government functions, to cause positive socio-economic transformation of Uganda".

The ministry is responsible for ensuring proper administrative and technical operational capacity of Local Governments including adequate staffing to monitor and implement the required road construction and safeguards requirements. The ministry will therefore provide support to Buliisa District during the maintenance of these roads.

5.7.3 Ministry of Water and Environment

Through its technical arms (Directorate of Water Resources Management - DWRM), and the Directorate of Water Development, MoWE has a responsibility to regulate quality and quantity of water resources in the country. The Directorate is responsible for the full range of integrated water resources management activities including monitoring, assessing, planning, allocating and regulating water resources. Specifically, the Water Resources Planning Department is responsible for water regulation through issuance of permits for water abstraction and wastewater discharge.
The Directorate of Environmental Affairs (especially the Wetlands Management Department) is responsible for monitoring of wetland conservation in Uganda including projects through wetlands of conservation value.

5.7.4 National Environmental Management Authority (NEMA)

The National Environmental Act provides for the establishment of NEMA as the principal agency responsible for coordination, monitoring and supervision of environmental conservation activities. NEMA is under the Ministry of Water and Environment (MoWE) but has a cross-sectoral mandate to oversee the conduct of ESIAs through issuance of ESIA guidelines, regulations and registration of practitioners. It reviews and

approves environmental impact statements (EIS) in consultation with any relevant lead agencies like for such a project. NEMA works with District Environment Officers and local environment committees at local government levels who also undertake inspection, monitoring and enforce compliance on its behalf. In Government ministries, NEMA works with Environmental Liaison Units to ensure that they effectively incorporate environmental issues in their activities, policies and programs.

5.7.5 Ministry of Gender Labour & Social Development

The Ministry is enjoined to operationalize Chapter 4 of the Constitution (Articles 31-42), which focus on affirmative action and promotion of fundamental human rights of the people of Uganda. The Department of Occupational Safety and Health in the Ministry is responsible for inspection of workplace environment to safeguard occupational safety, rights of workers and gender equity. The Ministry will issue worker place registration certificates and also undertake monitoring of compliance to the conditions of the certificates to contractors.

5.7.6 Ministry of Tourism, Wildlife and Antiquities

Ministry of Tourism, Wildlife and Antiquities is a Government Ministry with a responsibility to sustain tourism, wildlife and cultural heritage. This is aimed at contributing to transforming Uganda into a prosperous country. Ministry of Tourism, Wildlife and Antiquities is mandated to formulate, Implement Policies of Tourism, Wildlife and Cultural heritage, Sustain and manage wildlife and cultural heritage conservation areas, Diversify Tourism Product as well as Promoting and marketing Uganda as a preferred tourism destination. Archaeologists from the department responsible for museums and monuments in this Ministry would be useful in monitoring road project construction activities, especially excavations at borrow sites and general road earthworks to ensure that chance finds or artifacts of cultural significance are not destroyed.

5.7.7 Ministry of Energy and Mineral Development

The Ministry is responsible for the energy sector, dealing specifically with policy formulation, policy implementation and monitoring. The mandate of the Ministry is "To Establish, promote the Development, Strategically Manage and Safeguard the Rational and Sustainable Exploitation and Utilization of Energy and Mineral Resources for Social and Economic Development. Through the Directorate of Geological Survey and Mines - whose mandate is to control all forms of mining in Uganda through the Mining Act, stone quarrying, a mandatory necessity during road construction is considered a mining activity. After identification of potential quarry sites, the contractor shall process all necessary permits from the Directorate.

5.7.8 Petroleum Authority of Uganda (PAU)

The Uganda National Petroleum Authority is governmental organisation that regulates the petroleum industry in Uganda, the third-largest economy in the East African Community. Its responsibilities include licensing, regulation, supervision of exploration, harvesting, refining, marketing, and disposal of petroleum products in the country. The authority is overseeing the ongoing oil and gas prospecting in the Albertine region, among which activities involve infrastructure development, including auxiliary roads. Coordination with the authority will help create a synergy of implementation of environmental and social safeguards during construction and operation of the project.

5.7.9 World Bank

The World Bank as a funding agency shall provide overall technical guidance in the implementation of the project in regards to the financing agreement, proper documentation of the ESIA, inclusion of ESIA recommendations in the procurement and contracts as well as enforcement of safeguards in accordance with World Bank and Uganda country safeguards system. The World Bank country team shall undertake implementation support missions, orientation of implementation teams, safeguards clinic and support Ministry's capacity in monitoring and reporting requirements.

5.7.10 Buliisa District Local Government

The proposed roads are community roads that are supposed to be managed by the district and so Buliisa district authorities will be vital in implementation of the project by mobilising political goodwill and sensitizing communities. The District signed a participation agreement with the Ministry of Lands specifying the obligations of the local governments in project implementation. District Environmental Officers (DEO) and District Community Development Officers to play pivotal role during environmental and social safeguards monitoring associated with line construction as well as ensuring that the roads are free of any encumbrances and the District to manage any emerging RAP and grievance management

5.7.11 Buliisa and Butiaba Town Councils

Buliisa and Butiaba Town Councils will also play a direct role in supervising and enforcing the proper implementation of the ESMP. Key departments at the Town Council level include Community development office, Town planner, Town Engineer and political leadership among others. The town councils will take on effective monitoring and enforce implementation of the ESMP during construction phase and will oversee the implementation of the same during the operation and Maintenance of these roads.

5.7.12 Uganda National Roads Authority

Uganda National Roads Authority (UNRA) was established by the Uganda National Authority Act, No. 15 of 2006 and became operational on 1st July 2008. The mandate of UNRA is to develop and maintain national road system, advise Government on general roads policy and contribute to addressing transport concerns. The proposed roads are community roads that are managed by Buliisa District local government, but, provide linkage to national roads managed by UNRA. Therefore UNRA is a key stakeholder in the project. UNRA also is implementing component 1 or ARSDP with a lot of experience in implementation and enforcement of environmental and social safeguards in road cosntruction.

5.7.13 Uganda Road Fund

Uganda Road Fund (URF) was established by an Act of Parliament in 2008 to operate as a 2G (Second Generation) Fund with the objective of financing routine and periodic maintenance of public roads in Uganda. The Fund shall be the lead funder during the operation and maintenance phase of the proposed roads.

5.8 Acquisition of Requisite Permits for the Project

Implementation of the project will require the acquisition of necessary permits and licences (Table 5-7) in line with the laws of Uganda.

Table 5-6: Preliminary permits and licenses expected to be required by the project

Permit Required	Issuing Authority	Legal Framework	Relevance	Responsible party
Project NEMA approval certificate	NEMA	National Environment Management Act, 2019	Environmental and Social Impact Assessment for proposed upgrade of 11.63 km roads to tarmac in Buliisa Town Council and Butiaba Town Council under ARSDP Batch 2 projects.	MLHUD
			Environmental and Social Impact Assessment for proposed Contractors camp site	Contractor
Approval certificate	NEMA/Buliisa District		Environmental and Social Impact Assessment for proposed Borrow areas.	Contractor
Work place registration	MGLSD/OHS	OHS Act, 2006	The Road designs, axillary sites and activities on site must comply with Occupational Health and safety standards for the benefit of the community. Construction equipment's will have to be inspected.	Contractor
Storage of Hazardous waste	NEMA	National Environment Act 2019; National Environment (Waste Management) Regulation	During construction phase, Hazardous and Non-Hazardous waste will be generated and needs proper storage systems	Contractor
Waste Transportation License			Under project waste management, waste will have to be sorted, collected, and transported off site for disposal.	Contractor
Surface Water abstraction permit	DWRM	Water Act, cap 152	Water abstraction for construction works.	Contractor

5.9 Required agreements

On commencement of the project, various agreements (Table 5-7) are required to be filed and checked by the monitoring party.

Table 5-7: Agreements to be required by the project

Agreements Required	Acquiring party	Monitoring party
Filled consent forms from all directly affected people by the project	Buliisa TC	MLHUD-ARSDP
Aggregate material acquisition memorandum of understanding with existing quarry site operators	Contractor	Supervising Consultant MLHUD-ARSDP
Lease agreement for the Camp site	Contractor	
Lease agreement for the Borrow site	Contractor	
Memorandum of Understanding with NEMA registered hazardous waste handler	Contractor	Supervising Consultant MLHUD-ARSDP NEMA
Memorandum of Understanding with domestic waste handler/ Municipal	Contractor	

6. ANALYSIS OF PROJECT ALTERNATIVES

6.1 Introduction

The analysis of alternatives is part of the ESIA process and is done to ensure that the best among all possible options is selected. In this road project, the concept of project alternatives has been considered in line with the feasibility study and the opinions of the stakeholders considered from national to villages level. Analysis of alternatives has focused on implementation modalities of the road project taking into account, a combination of environmental, social and economic factors. In addition, it is important to note that this is already an existing gravel road which now requires paving. Based on the above, the following alternatives were considered:

6.2 Option 1: 'No project' scenario

The "no Action option" alternative here means that the proposed upgrading of the project roads in Buliisa and Butiaba Town Councils from gravel to bituminous standard would not be undertaken hence leaving them in their current state.

These roads are currently existing and provide viable but poor routes for diverting traffic from markets and services. If the 'no project' option is adopted, from the socio-economic standpoint and motor traffic considerations, the following benefits will be foregone:

i. Increased accessibility to markets and services;
ii. Boost in economic activities in the area;
iii. Enhanced development and improvement in housing and other amenities;
iv. Improvement in drainage and aesthetics;
v. Reduced flooding; and
vi. Improvement in the value of property and higher-class status of the communities and surroundings.

6.3 Option 1: Re-graveling the roads to 1st class gravel

From the economic point of view, this may seem as a cheaper option than upgrading the roads to bituminous standards. However, this option is expensive in the long run due to huge recurrent maintenance cost especially during or after rainy seasons. Re-gravelling is sustained by opening up of borrow pits which increase the foot print left by un-restored borrow pits, loss of aesthetic value, landscape degradation, erosion and siltation of water bodies among others. These environmental costs can be avoided if the roads are upgraded wherein environmental restoration costs are factored.

6.4 Development of alternative Alignments compared to the existing one

This would mean developing new roads in entirely new areas within the same project area. This option was considered the most expensive alternative in terms of compensation and also it would have major environmental implications. Most of the impacts under this option would be irreversible especially along the sensitive ecosystems. For this reason, development of alternative alignments is not a tenable option.

6.5 Option 2: Upgrading the proposed project roads to class II paved

Although initially high costs are incurred in road upgrade, this alternative is sustainable in that major maintenance interventions are expected after a long period of time, making this option cheaper in the

long run. Additionally, the upgraded roads will boost economic development in the Town Councils as the value of land along these roads will increase attracting large investments, travel time will reduce, economic activities will sprout along the road side and vehicle maintenance costs are anticipated to go down. Technically, the upgraded roads will provide better and motorable vertical and horizontal road alignment with better geometric characteristics.

From the Environmental view, upgrading works will involve a lot of earthworks and landscape destabilization among others. However, all these environmental impacts are temporarily since they only happen during the construction phase. Additionally, a plan with financial resources for environmental restoration is always incorporated in the project to ensure that the disturbed areas are rehabilitated to as near as possible the initial situation.

7. PUBLIC CONSULTATIONS AND DISCLOSURE

7.1 Introduction

This section of the report presents the objectives, process and the outcomes of the stakeholder involvement in the process of this ESIA.
Emphasis has been placed on a fully-inclusive, open and transparent public participation process and the transfer of information regarding the proposed upgrading of the road to interested and affected persons (I&APs). The provision of sufficient and useful information on an on-going basis to I&APs to allow them to participate in the project and offer comments is a cornerstone of this Environmental Assessment process.

The ESIA process started with a scoping exercise aimed identifying relevant issues to form focus of the ESIA study and refine the terms of reference provided by the project proponent. These terms of reference are presented in Appendix I. This chapter presents the results of stakeholder engagement activities undertaken during January and February 2020, during the scoping stage and for the final ESIA

7.2 Objectives of consultation and disclosure

Stakeholder consultation aimed to achieve the following:

i. Generate a good understanding of the project.
ii. Understand people and agency expectations about the project (from construction through to road use).
iii. Understand and characterize potential environmental, socio-economic impacts of the project.
iv. Developing effective mitigation measures and management plans.
v. Enhance local benefits from the road project.
vi. Enable affected communities to provide views hence participating in or refining project design, where applicable.

7.3 Standards for consultation

The public consultation was guided by Ugandan guidelines summarized in Box 7-1.

Box 7-1: Uganda Guidelines Relating to Public Consultation.

Although no regulations exist for public consultation, national guidelines for EIA in Uganda require that the public is given full opportunity for involvement and participation throughout the EIA process. People including individuals, or groups of local communities who may be directly affected by a proposed project should be a focus for public involvement.
Since identification of the "public" likely to be indirectly affected by the proposed activity is often more difficult, it is required to exercise care in deciding who participates to ensure that a fair and balanced representation of views is obtained and views of minority groups are not overshadowed by more influential members of the public.

The public may appropriately be involved in the EIA process through:

i. Informing them about the proposed project;
ii. Participation in scoping exercise;
iii. Open public meetings/hearings on the projects;
iv. Inviting written comments on proposed project;
v. Use of community representatives;
vi. Comment and review of the Environmental Impact Statements; and,
vii. Making relevant documents available to any interested members of the public in specified places or at the cost of reproduction.

Three stages for public involvement in the EIA process are spelt out:

a) **Public consultation before EIA is done**

If after receiving and screening/reviewing the developer's project brief, the Authority (NEMA), in consultation with the Lead Agency, decides that it is necessary to consult and seek public comment, it shall, within four weeks from submission of the project brief and/or notice of intent to develop, publish the developer's notification and other supporting documents or their summary in a public media. It is required that objections and comments from the public and other stakeholders shall be submitted to the Authority and to the Lead Agency within 21 days from the publication of notice.

b) **Public consultation during the EIA**

The team conducting the EIA shall consult and seek public opinion/views on social and environmental aspects of the project. Such public involvement shall be during scoping and any other appropriate stages during the conduct of the study.

c) **Public consultation after EIA (EIA Review)**

The EIS shall be a public document and may be inspected at any reasonable time by any person. Considering the scale and level of influences likely to result from the operation of a project, the Authority, in consultation with the Lead agency, shall decide regions where it is necessary to display the EIA report to the general public.

7.4 Stakeholder Identification

In order to develop an effective consultation programme it was necessary to determine exactly who the stakeholders were, basing on the definition that a stakeholder is "any individual or group who is potentially affected by a project or can themselves affect a project". A list of stakeholders that were consulted during the ESIA process is given in **Table 7-1**.

Table 7-1: Stakeholder Categories

No.	Stakeholder	Reason for Engagement	Approach
1	Ministry of Lands Housing and Urban Development ARSDP staff	Client and bears project conception knowledge On grounds that they are the project implementing agency, bear project conception knowledge and have to establish mechanisms for compliance to ESHS requirements.	Formal Meetings
2	Ministry of Local Government	It is responsible for the "creation (for example upgrade of Butiaba town board to a Town Council), supervision and guidance of sustainable, efficient and effective service delivery in the decentralized system of governance	Formal Meetings
3	Buliisa District Local Government Buliisa Town Council Butiaba Town Council	Mandated agency to oversee all activities of Lower Local Government including Road Works, Environment, Social, Health and Safety in the District	Formal Meetings
4	Cultural Institutions Bugungu Heritage information center Bunyoro Kitara Kingdom	Protection of physical cultural resources during road construction	Formal Meetings

5	Civil Society Organizations World Vision BUPACD	Obtain key concerns of the community in specific areas e.g. disability, gender-based violence, child protection etc. Can undertake mobilization of the community in support of the project	Formal Meetings
6	School Management Committees	Ensure that construction of roads do not affect learning processes and that children are protected throughout the project life	Formal Meetings
7	Community members	Provide ownership of the project, report safeguard issues, provide information for grievances management	Formal Meetings

Table 7-2: Communities consulted

Roads	No. of people attending		Total	Date
	Male	Female		
Gongo	18	12	30	13th and 14th
Commercial	18	12	30	13th and 14th
Muhoojo	22	9	31	17/02/2020
Speke	27	7	34	17/02/2020
White	27	7	34	17/02/2020
Galende	18	5	23	17/02/2020
Mukitale	18	5	23	17/02/2020
Kalolo	18	5	23	17/02/2020
Kyamurwa	18	6	24	17/02/2020
Mutiti	20	6	26	17/02/2020
Rift Valley	18	9	27	17/02/2020
Siira	17	9	26	17/02/2020
Baker	19	8	27	17/02/2020
Wangalia	23	10	33	17/02/2020
Magali	21	8	29	15/02/2020
Access to the Marine & Butiaba Fish	26	23	49	16/02/2020
Part of Sseseko - Kawaibanda	40	12	52	15/02/2020
Access to Health Centre	40	12	52	15/02/2020

Summary of Local Institutions Consulted (Churches, Schools, Mosques, Health centers)

Table 7-3; Local institutions consulted

Institution	No of Respondents by Gender		Dates
	Male	Female	
Butiaba Primary School Management	1		14.02.2020
Biiso Health Center III		1	15.02.2020

7.5 Approach for consultation

The following methods were used to conduct consultations:

i. Individual interviews with stakeholders.
ii. Focus group discussions
iii. Public/village meetings in villages and trading centres along the road.

7.6 Emerging issues from stakeholder consultations

7.6.1 Emerging Issues from National Stakeholders

Table 7-4: Emerging issues from National stakeholders

No.	Emerging issue	Description	Response from Consultant
1.	Role of Local Councils in project implementation	Local councils play a major role in successful implementation of projects since they are the point of entry into the community. These should be actively involved in the project at all stages since they are key in lobbying support of the community, mobilizing and are effective at information dissemination at the grassroot. It is therefore important that they are updated on project progress, and that the contractor's workers are registered with LC1s in every village traversed by the roads.	During the ESIA study, Local Council leaders (LCI, II and III) were consulted and their contribution was key in understanding the Socio-economic baseline of the study area. They guided on community consultation approach and played a major role in mobilization. The contractor shall involve local council leaders in recruitment of workers to ensure that the local community is given opportunities especially for unskilled labour. The contractor shall also ensure that all workers, especially those residing within the communities, are given identification cards and are registered with LC1 offices of the respective villages. This will be useful identifying workers that commit crimes in community, as well as community members that commit crime, disguising as project workers.
2.	Mobilization of the community economic development	The project should work as a mobilization strategy to community development. In order to gain community support and project ownership, information dissemination during project implementation should point the community to the bigger picture of local economic development.	During community consultation, the consultant emphasised that the project is aimed at increasing rural accessibility to markets and services, prepare the project area for growth and provide economic infrastructure targeting various sectors that will eventually lead to development of the area. Continuous engagements of the community shall be conducted throughout project implementation period by MLHUD, Buliisa District and the respective Town councils to gain community support.

3.	Skills development and continuity	Road construction will employ a number of workers from various parts of the country but also the local labour from areas traversed by the project roads. For continuity, the project should consider awarding certificates at the end of construction, to local laborers that participate in the construction projects and excel in various works to enable them transfer the skills acquired to other projects.	This shall be highlighted in the Labour force management plan and recommendation letters issued to local labourers shall be used as monitoring indicators, as required in the ESMP.
4.	Waste management	Road construction activities will generate waste that needs to be disposed off in a sanitary manner. The contractor should work together with the respective town councils to disseminate IEC material on waste management during construction. Post-construction, the town councils and District environment office should take this role and consider procuring waste bins that should be placed along the project roads with messages such as "Keep Buliisa Town clean" to ensure that the new roads are not littered.	The contractor shall develop and implement a Waste Management Plan to ensure that measures for handling all project-generated waste are in place. Additionally, an oil spill management plan will be designed and implemented to manage oil waste. Oil spill kits will be procured to manage the oil spills from construction equipment. With support from the district, the respective Town Councils shall institute measures to manage waste during road operation such as installing waste collection bins along the project roads and sensitizing the community especially roadside businesses about proper waste management to ensure the roads are kept free off litter
5.	Climate change	Road construction has the potential of clearing trees along the roads. It is important that the project incorporates tree planting especially ornamental trees that can withstand the climatic conditions of the area	MLHUD, supervising consultant, Buliisa District and the respective Town Councils shall ensure that the contractor develops and implements a vegetation restoration plan which incorporates planting of trees and ornamentals in the project area. Buliisa District and the respective Town Councils will ensure post-project management of trees planted under the project.
6.	Obscene language	Construction workers are fond of using obscene and vulgar language during construction activities. The	The contractor shall implement a strict code of conduct against use of obscene language by workers. In

		proposed roads traverse urban centers that have relatively high populations, in addition, these roads traverse both primary and secondary schools. It is possible that if obscene language is used by workers, it can be easily adopted by school going children and infiltrate the community thus deteriorating moral values of the society.	addition, Site Disciplinary Committees will be formed to follow up and ensure that appropriate punishment is given to workers who engage in use of vulgar language. A contractor's Code of Conduct is presented under Appendix XI of this report.
7.	Compensation issues	As a result of the ongoing oil and gas prospects in the Albertine region, communities in the area have high expectations from all development projects regarding compensation. Communities should be sensitised extensively to make them understand and appreciate that projects are aimed at local economic development and so the community should focus on the long-term benefit.	This has formed part of the ongoing stakeholder engagement and will continue throughout project implementation. The ESMP incorporates frequency of stakeholder engagement and responsible parties.
8.	Employment opportunities to the locals	With development activities such as road construction in the area, the community is always expectant for job opportunities as it is the main way of directly benefit from the construction phase, in addition to business opportunities to local suppliers. It is important that recruitment puts into consideration the locals that have the required skills. This creates a good relationship between the community and contractor and wins support of the project by the community.	MLHUD and Buliisa District shall ensure that the contractor develops and implements a Labour Force Management Plan and conducts sensitization of communities regarding the opportunities available during road construction. During recruitment of local labour, the contractor shall involve the Local council leaders to ensure that criminals and underage children are sieved out.

7.6.2 Emerging Issues from District Stakeholders

Table 7-5: Emerging issues from District stakeholders

No.	Emerging issue	Description	Response from Consultant
1.	Compliance Monitoring	During the ESIA studies, a lot of engagements have been done with various stakeholders and their views have been picked. However, it is common that these are not incorporated during the construction phase. There is therefore need for all	MLHUD, Buliisa district and the Town Councils shall appoint respective project focal persons to oversee the day to day implementation of the environmental and socio-economic mitigation measures as well as

		stakeholders, led by the Ministry of Lands, Housing and Urban Development to regularly monitor the contractor to ensure that the views and measures proposed by stakeholders are implemented during road construction.	compliance with all relevant legislation. Routine joint stakeholder site supervision shall be undertaken by MLHUD, BDLG, Buliisa and Butiaba Town Councils and other stakeholders, to determine state of environmental and social compliance. Roles of various stakeholders in compliance monitoring have been included under section 9.7.
2.	Employment expectations & Local content	More often than not, contractors bring in workers from other parts of the country and only offer to recruit very few people from the community. It is therefore important that the contractor gives first priority to the able persons from the local communities when recruiting especially for casual labour. This will promote project ownership in the community and overall improved cooperation between the contractor and the community.	MLHUD and Buliisa District shall ensure that the contractor develops and implements a Labour Force Management Plan and conducts sensitization of communities regarding the opportunities available during road construction. During recruitment of local labour, the contractor shall involve the Local council leaders to ensure that criminals and underage children are sieved out.
3.	Road safety	The road users in the district especially cyclists lack awareness of road safety. It is important that road safety campaigns are incorporated in project implementation to reduce risks of accidents during construction and those after construction due to excitement caused by the new road.	Buliisa District, Town Councils and the contractor shall, with support from Traffic police, conduct road safety campaigns in communities traversed by the project roads and sensitize workers on road safety. The contractor will work in close collaborations with Traffic Police to enforce traffic rules and regulations along the roads under construction.
4.	Waste management	The district has no gazette site for waste disposal. It is important that the contractor puts in place a system of management of his waste, including the procurement of services of licensed waste handlers to manage waste generated at the camp and all construction sites.	The contractor shall develop and implement a Waste Management Plan to ensure that measures for handling all project-generated waste are in place. Collection of waste shall be done by a licensed waste handler who shall dispose it off to a licensed area/ landfill.
5.	Timing	The country is currently in a political period and in such times, some leaders tend to “own” such projects and use them to either solicit for	During the study, the team shall be accompanied by the district project focal person especially during stakeholder engagements to avoid

		votes. In so doing, they may pass on faulty information. A stakeholder engagement plan should thus be developed and information dissemination should be done carefully throughout all project phases.	opportunistic leaders from providing misleading information. During construction, the contractor shall develop and implement a Stakeholder Engagement Plan, in consultation with the District and Town Council Community Development Officer, to ensure that progress and changes are shared with relevant stakeholders. MLHUD shall also develop and implement a Stakeholder Engagement Plan throughout the implementation phase share with stakeholders the project progress as well as challenges and opportunities from project implementation activities.
6.	Soil and water contamination	Proper drainage around workshops and all construction sites that pose a risk of contaminating soils and water ways.	The contractor shall provide adequate drainage and silt traps around workshops and sites to avoid soil and water contamination.
7.	Stakeholder engagements	There is need for the contractor to continuously engage the community and all the other stakeholders during the construction phase to update them about progress, give community prior communication when they intend to start work in sensitive areas, diversions and other works that may interfere with community activities.	The contractor shall develop and implement a Stakeholder Engagement Plan, in consultation with the District and Town Council Community Development Officer, to ensure that progress and changes are shared with relevant stakeholders.
8.	HIV/AIDS	There is need to incorporate HIV/AIDS sensitization, counselling and testing of the workers and communities along the roads into project activities.	The contractor shall, through facilitation of medical centers along project roads conduct counselling and testing services as well as Antiretroviral Therapy to both the community and project workers.
9.	Drainage	Since most parts of the district are generally flat, there is need to pay close attention to drainage of the roads during construction	To cater for drainage, project designs have proposed a number of culverts (total of 37) to be proposed across small rivers and streams.

7.6.3 Emerging issues from Town Councils stakeholders (Bullisa and Butiaba)

Table 7-6: Emerging issues from Town Council stakeholders

No.	Emerging issue	Description	Response from Consultant

1.	Security concerns	There is need for all Contractor's workers to have project identification and to register with the respective local authorities.	The supervising consultant will ensure that the contractor issues all workers with project identification and make known to the respective local councils, all workers, including those not accommodated within the project camp.
2.	Injurious damages	There is need for the contractor to compensate for injurious damages caused on property especially structures and crops during construction works.	In case of any damages caused to property during construction works, the property owners will be engaged and losses will be compensated for.
3.	Employment	During recruitment of workers, first priority should be given to the local communities traversed by these roads. In so doing, the contractor should seek local guidance to limit issues of child labour and recruiting persons with criminal history.	MLHUD and Buliisa District shall ensure that the contractor develops and implements a Labour Force Management Plan and conducts sensitization of communities regarding the opportunities available during road construction. During recruitment of local labour, the contractor shall involve the Local council leaders to ensure that criminals and underage children are sieved out.
4.	Noise and Dust	There is need to suppress dust and limit noise especially in the towns and around schools, health centers and other places of social gathering.	The Contractor will institute measures to suppress dust during earthworks and specific actions will include watering dusty roads with a water bowser especially in areas around schools, markets, health centers and trading centers. The supervising consultant and MLHUD will ensure that the contractor's workers on site are made aware of, and adhere to, the regulatory noise limits for a construction site in commercial and residential areas as provided for by the National Environment (Noise Standards & Control) Regulations, 2003. The contractor shall be required to limit construction activities to daytime in addition to turned off project machines when not in use in reduce noise.

5.	Environmental contamination	There is need to protect water sources along the roads from pollution during construction.	The Supervising Consultant, MLHUD and Buliisa DLG shall ensure that the contractor develops and implements a spill contingency plan that guides on the procedure for spill containment. The supervising consultant shall ensure that only serviced construction equipment is allowed to operate on sites to avoid oil or fuel leakages that might contaminate water resources.
6.	Labour force management	There is need for the contractor to develop and give contracts to workers as required by the Employment Act and adhere to all provisions therein. From past experience, the area has registered a number of crimes some of which they attribute to foreign workers that are dismissed from work but do not return to their areas of origin.	MLHUD, the supervising consultant and Buliisa District shall ensure that the contractor develops and implements a Labour Force Management Plan; and also enforce employment of persons from the communities traversed by the project roads to reduce cases redundant foreign workers that may become a menace to community. Number of contracts signed with locals will be a monitoring indicator as stated in the ESMP.
7.	Visual intrusion	There is need to fence off schools with iron sheets to avoid disruption of learning processes since pupils' attention is usually attracted by earth moving equipment especially excavators.	The study shall identify all schools along the proposed roads. The supervising consultant, Buliisa DLG and MLHUD shall enforce hoarding off such schools to avoid disruption of learning process.
8.	Restoration of disturbed areas	It should be a contractual obligation to restore all sites that have been opened up in setting up auxiliary facilities especially campsite and borrow pits	The Supervising consultant and Buliisa DLG shall ensure that the contractor restores all sites temporarily opened up during construction works. The agreements signed by the contractor with the land owners shall contain clauses on restoration.

7.6.4 Emerging Issues from Community level stakeholders

Table 7-7: Emerging issues from community level stakeholders

No.	Emerging issue	Description	Response from Consultant
1.	Noise and dust	Need to frequently suppress dust by sprinkling of water especially during the dry season in trading	The supervising consultant shall ensure that the contractor sprinkles water on dusty roads using water

		centres/Towns and close to social amenities e.g. schools.	bowsers; especially in areas close to trading centers, schools, health centers and markets among others as guided by the ESMP.
2.	Land acquisition and compensation issues	The area has had previous projects that compensated the community members for the land taken for development and community members are expectant for the same for this project.	All the proposed roads have been designed to follow existing alignments and so no land take is expected. However, in case of any damages caused to property during construction works, the property owners will be engaged and losses will be compensated for. In case of any relocation, a relocation procedure will be followed.
3.	Employment	First priority should be given to the local communities traversed by these roads especially for casual work	The contractor shall develop a Labour force management plan and will provide the community with information regarding jobs available. This will be enforced by the supervising consultant, Buliisa District and MLHUD.
4.	Damage to construction material haulage routes	There is need for the contractor to maintain, in a motorable state, the roads damaged by the heavy trucks used in haulage of construction material from their sources to the project roads. These roads are usually damaged by the heavy trucks.	The supervising consultant will ensure that the contractor maintains roads used for transportation of materials or any other uses for construction purposes of the project roads.
5.	Road user committees	There is need for the contractor to collaborate with the elected committees. In past experience, these committees have been elected and trained but when construction works begins, they are left redundant as the contractor does not cooperate with them or acknowledge their roles.	The composition of the community grievance management committee includes the chairperson of the road user committee.
6.	Culvert construction	Experience from past and ongoing projects in the area shows that installation of culverts leaves high elevations of the area impairing visibility of road users from either side thus causing accidents of humans and animals. There is need for the contractor to implement all measures possible to reduce these impacts.	The supervising consultant shall ensure that that the contractor installs appropriate signage toward the culverts at either sides to warn road users of the change in road levels.
7.	Accidents	There is need to control speed on the project roads and material haulage	The contractor shall install humps on project roads during construction and

		routes to avoid accidents of humans and animals.	on material haulage routes. In addition, he/she will sensitize workers on speed control and penalties will be put in place for those that do not adhere.
8.	Injurious damage	There is need to compensate for damage to property especially trees that are cut during construction activities.	Any damages caused to property during construction works will be compensated for in accordance with the Land Acquisition Act Cap 226.
9.	Family breakages, rape and defilement	The influx of workers from other parts of the country may cause tension in the communities since they usually do not move with their families. This may push them into engaging in sexual relations with married people hence breaking their marriages or escalating domestic violence, sexual abuse of school children hence increasing the number of school dropouts and early and unwanted pregnancies. There is need for the contractor to develop strict rules for workers against such interactions in addition to continuous sensitization of both the community and workers.	The contractor shall implement a strict Code of Conduct against workers that engage in illicit behaviour. He/she will work with Buliisa Police station to apprehend Perpetrators for appropriate action. Buliisa District and MLHUD will conduct periodic community sensitization to raise awareness on domestic violence, child rights abuse and HIV/AIDS among others.
10	Community views	The views raised by community during consultations should be incorporated in project implementation otherwise the consultations become meaningless.	Views raised by community have been included in this report under Appendix II for reference during project implementation. Recommendations made by community informed the mitigation measures proposed and consequently the ESMP. MLHUD, the supervising and Buliisa district will enforce compliance of the contractor with all environmental and socio-economic mitigation measures specified in the ESMP.

A detailed record of stakeholder consultations is presented in Appendix II.

7.7 Comments from Key Informant Interviews and Focus Group Discussions

Table 7-8: Findings from Key Informants and Focus Group Discussions

Aspect	Existing situation	Challenges/ Gaps	Existing interventions	Expected effects from project implementation	Recommendations
Gender Relations	***Access to and ownership of property and resources;*** - In the project area, it was mentioned that men are the main owners and controllers of property. Women gain access to assets through inheritance or after the death of their husbands, as a way of protecting the property for the benefit of the children - In some communities, it was mentioned that women have limited control of money that they earn. When women earn from agriculture and other livelihood activities, some men require that the income generated is given to them, to apportion it for the expenditure, since they are the heads of the family. ***Women participation in public activities***	Awareness of rights and the importance of gender inclusiveness is still a challenge at all levels of management and the community as a whole. In Butiaba Town council where fishing is the main income generating activity, the reduced fish catch in the lake have left men with reduced incomes. This has turned many women into bread winners carrying the responsibility of providing for families. However, women empowerment in income generating activities is still a challenge. These lack the necessary skills and training to tap into existing resources in order to improve their livelihood.	The district has a policy that for each livelihood group, it should have a minimum number of women members in order to qualify for any economic support e.g. funding or loans. Women positions in the political spheres at all levels from lower local council to promote women participation in political affairs. The district, with support from organizations like World Vision undertakes sensitizations of the community focusing on women empowering Town councils and sub counties have enacted byelaws against domestic violence. The interventions by organizations as World Vision have seen a decrease in the	Domestic violence especially due to suspicion of their women being engaged in sexual relationship with construction workers Family neglect by men who accumulate a lot of money and feel they can afford any women of their choice or even commercial sex workers Polygamy due to increase in disposable income by men Employment of women of the project will improve their livelihood increasing their ability to provide for their families.	MHUD, Buliisa District local government and the contractor should collaborate with CSOs in the area e.g. World Vision to conduct sensitization of workers and community members on against sexual harassment and gender-based discrimination A grievance management committee should be put in place to handle gender concerns related to the project. MHUD and Buliisa District should ensure that during recruitment of workers, the contractor gives equal opportunities to women and PWDs to participate in construction activities and service provision such as food supply

Aspect	Existing situation	Challenges/ Gaps	Existing interventions	Expected effects from project implementation	Recommendations
	In some communities in the project area, women involvement in public activities is still low. Overall, women attendance in meetings was low as compared to men. Some attributed this to the belief that women are supposed to be in the garden while men take forefront in discussing matters of national importance. Where women attended, they didn't feel worth to sit at the front and were even afraid to ask questions. Domestic violence is still a challenge in the families, women fear to report the cases because they fear the men will send them away or even abandon them and their children.		domestic violence cases reported. Women have been sensitized about their rights and the need to report such cases.		The contractor should implement a strict code of conduct with penalties on workers that involve themselves in relationships that have the potential to cause family breakages and domestic violence.
HIV and AIDS	During various stakeholder engagements, it was mentioned that the trend of HIV/AIDS is increasing and was reported at 4.6% (Butiaba CDO). A number of factors were attribute to its increase and these included the increase of sex workers at	There is limited financing of the CBOs e.g. LACWADO (Lake Albert Children and Women Advocacy for Development Organization) that	Organizations such as LACWADO, Baylor Uganda a and IDI in conjunction with the Health centeres organize free counselling and testing Sensitization of community on HIV/AIDS control has been	Interaction of workers from other parts of the region with the community will increase the spread of HIV/AIDS. Increase in disposable income in the community will promote promiscuous	MLHUD, Buliisa District local government and the contractor should conduct sensitization of workers and community to raise awareness of HIV/AIDS

Aspect	Existing situation	Challenges/ Gaps	Existing interventions	Expected effects from project implementation	Recommendations
	landing sites in Butiaba, some of which come from DRC. The reduced fish catch in the lake has rendered many people idle giving them a lot of time to indulge in promiscuous activities. The fishing community is mobile as it moves from one landing site to another making it hard to monitor those living with HIV/AIDS. Low turn up of the community for counselling and testing campaigns. Hot spots in Batch 2 communities include; Landing sites especially Butiaba and Kaweibanda landing site for Butiaba town council roads. Muhoojo is also a hot spot are due to presence of a night club along the road. Most affected persons are fishermen, bar operators and boda riders. In terms of age group, the youth were pointed out as the highest risk group.	organize free counselling and testing campaigns Lack of incentives for health workers to conduct continuous community sensitization Poor follow up mechanisms for example of the mobile fishing communities Men in the community tend to access HCT and ART without their wives	taken up by the religious sect; during prayers in churches and mosques, religious leaders have dedicated time within the program to sensitize the congregation on the disease. Buliisa Health Center IV and Butiaba Health Center II undertake free condom distribution in public toilets. Butiaba town council has a dedicated committee on managing HIV/AIDS called SAC (Subcounty AIDS Committee). It comprises of health center in-charge and health assistants among others and sits on a quarterly basis to review the status and of HIV/AIDS and to evaluate management strategies. All government health center IIIs, Iv and Buliisa hospital provide Prevention of Mother to Child Transmission (PMCT), to enable mothers with HIV to give birth to HIV free child.	behavior among the works and community members thus, if not sensitize, will increase the speared However, incorporation of sensitization and awareness campaigns in project activities will reduce the spread of HIV/AIDS	As part of project activities, MLHUD and Buliisa district local government should facilitate medical centers along project roads e.g. Butiaba Health centre II and Buliisa health center IV with medical supplies like testing kits to deliver services to the community Project should incorporate training of health workers and VHTs from health centeres along the project roads. District should facilitate HCT/ART outreaches in the communities

Aspect	Existing situation	Challenges/ Gaps	Existing interventions	Expected effects from project implementation	Recommendations
Disability	Common forms of disability in the area include physical and mental. Physical disabilities are reportedly as a result of accidents and diseases such as polio in adults whose parents were reluctant to take their children for immunization. The black fly in Biiso subcounty close to R. Waaki and Budongo forest is said to be responsible for epilepsy cases. However, due to government interventions cases have reduced	Community attitude towards PWDs is still poor. The disabled persons or families living with PWDs are still scared to come out and ask for help for fear of being publicly discriminated against. Limited access to water; in the project area, common sources of water are public stand pipes and boreholes. Pumping boreholes requires energy and most PWDs find it difficult to pump water. Much as there are development partners that are implementing empowerment programs, the number of persons in need still outweigh the services available.	A number of development partners are providing support and empowerment t PWDs in the project area, these include; Uganda Society for Disabled Children that empowered parents of disabled children to support their children through projects such as poultry in addition to treating disability that could be corrected at no charge and sight savers that empowers PWDs with skills such as tailoring, welding and carpentry.	Blockage of access along social infrastructure e.g. schools, health centers, worship centers etc will affect accessibility of PWDs to these facilities Provision of employment opportunities in road construction shall improve their livelihood and empower them to support their families.	The contractor should involve PWDs in project activities by giving them employment opportunities according to their capabilities. The district should support the CBOs financially to be able to reach out to the needy PWD community in skill empowerment Sensitization and awareness creation of the community to end discrimination against PWDs should be conducted by Buliisa district local government and MLHUD.

Aspect	Existing situation	Challenges/ Gaps	Existing interventions	Expected effects from project implementation	Recommendations
Children's Rights & Protection	Stakeholders revealed that the major child abuse common in the rea include; - Child labour where young boys are engaged in making fishing nets at the landing sites - Child marriages especially around the landing sites in Butiaba which has been greatly influenced by the culture of DRC where girls below 18 years are married off - Child neglect where parents do not provide the basic necessities like food, clothing and scholastic materials among others. Cases are usually reported to the CDO and the department of child protection at the police station.	Community awareness on children's rights and their protection is still a challenge in the community Advocacy organizations lack enough incentives to reach out to all communities in the district	Advocacy for children rights by organizations such as LACWADO	Since there are schools along some of the project roads, the construction works might engage in sexual relationships with the pupils leading to school dropout, early pregnancies and associated effects Some children in the community might be tempted to seek employment in the construction works to earn a living yet employment of persons below 18 years is prohibited.	MLHUD and Buliisa district local government and the contractor should conduct community and workers sensitization on child protection MLHUD and Buliisa district local government should cooperate with local leaders and police to enforce child protection and handle child abuse cases District should support the CBOs to enable them reach out to more communities

8. POTENTIAL IMPACTS AND PROPOSED ENHANCEMENT/MITIGATION MEASURES

This section of the report presents an assessment of the potential impacts during all phases of the project. Enhancement measures for the positive impacts have been presented while mitigation measures are presented to avoid, minimize/reduce, or offset the identified negative impacts.

8.1 Positive Impacts

8.1.1 Employment

Upgrade of the proposed roads presents income opportunity for contractors, the local communities and tax revenue for government. It is estimated that over 100 people will be employed during construction, some of which will be sourced from local communities. Priority will be given to local residents wherever casual work is needed. The majority of this number will be low-skilled labour, which will be hired from local communities. This presents a positive but short-term economic benefit for the local youths. However, it is common for the largest proportion if not all of this labour to comprise male workers only but for equitable benefit and gender equity, able women should also be hired wherever they meet job requirements.

During the post construction phase, people will be employed in routine maintenance of the roads. Although this will be short term, it will improve the economic wellbeing of the community

	Construction	Operation (Post Construction)
Project phase impacted	√	√

Impact Enhancement:

i. The contractor to use locally available labour for the unskilled labour requirements and where the required skills are available locally, the local people will be given first priority commensurate to their level of training. This will have the advantage of enabling the local community take responsibility in owning up the project.
ii. The construction contractor will involve local leaders in recruitment process to ensure full and fair participation of local communities and screening out of lawbreakers;
iii. To the extent possible, equal employment opportunity will be available for women.
iv. The construction contractor will be obligated to work with District Labour Officer to ensure that Uganda's labour laws (*Employment Act*) are complied with.

8.1.2 Benefit to local retail businesses

This project will have construction works on-going for a period of 1 year. The local communities will gain through the sale of items like food stuffs, drinks and other consumable products. They will also benefit indirectly from the increased spending of the workforce. The increase in demand of products will lead to increased supply and creation of market for products thereby improving the incomes and general welfare of the local communities and their families. Though short term, this will positively impact women (and their households) who would be involved in such businesses.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact Enhancement

i. During the project progress meetings with local community, the local residents will be informed about the project and how their businesses can benefit from the project.
ii. Agreements will be designed for local suppliers
iii. Sensitization of the construction contractor and his staff about public health aspects mainly based on consumption of such food stuffs bought at the construction site from the locals.
iv. The contractor shall ensure adequate, fair, and prompt payments to local suppliers

8.1.3 Income to material / equipment suppliers and contractors

Construction of the roads will require supply of various materials and/ or equipment. For example, construction will require gravel (murram) and aggregate (stone), etc some of which can be sourced locally. Other materials are lime, bitumen, water, cement, stones and steel. Some of these materials required for the project will be sourced nationally and internationally to ensure that the desired quality is achieved. Procurement of these resources connotes income to suppliers and owners of land where borrow pits and quarry sites will be located.

	Construction	Operation (Post Construction)
Project phase impacted	√	√

Impact Enhancement

i. Earth materials needed for construction, for example, murram, aggregate (stones and sand) should be largely obtained from the project affected villages, if present in the required quantities and quality.
ii. The contractor and supervising consultant will ensure laboratory testing of materials
iii. The contractor shall enter into agreements with local suppliers and shall ensure adherence to the conditions therein
iv. The contractor shall hire a NEMA registered sub consultant to undertake ESIA for material sources like gravel and quarries. The contractor shall ensure compliance to the conditions of approval of these ESIA certificates.
v. The contractor shall adequately restore all used up material sources to ensure that these sites continue to be productive to their owners. The agreements entered by the contractor and land owners shall include clauses on restoration.
vi. The contractor shall ensure fair, adequate and timely payment to the land owners.

However conscious or unwitting purchase of these materials from unlicensed operators would indirectly support, encourage or promote environmental degradation and possibly causing medium- to long-term negative impacts. It will therefore be a contractual obligation for the contractor to procure construction materials from sources that are legitimate or licensed by the project District Local Government.

8.1.4 Rental income for workers camp and equipment yard site owners

Land will be required on which to set up temporary contractors' camp and equipment yard. Owners of land on which these facilities will be erected will earn a rental income negotiated with contractors. This is a positive but short-term and reversible benefit ceasing with project completion or whenever such facilities are no longer required in a given location.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact enhancement

i. As a contractual obligation, contractors should clean up and restore sites where temporary facilities had been erected, when their use ceases. All waste thereon should be removed and responsibly disposed off. Any contaminated areas on site should be remediated as part of site restoration.
ii. The contractor shall enter into agreements with the land owner and shall ensure adherence to the conditions therein
iii. The contractor shall hire a NEMA registered sub consultant to undertake ESIA for the identified sites. The contractor shall ensure compliance to the conditions of approval of these ESIA certificates.
iv. The contractor shall adequately restore the site used as a camp and parking yard in order to ensure that these sites continue to be productive to their owners. The agreements entered by the contractor and land owners shall include clauses on restoration.
v. The contractor shall obtain workplace registration certificate from department of Occupational Health and Safety, Ministry of Gender, Labour and Social Development.
vi. The contractor shall ensure fair, adequate and timely payment to the land owners.
vii. The contractor shall design site lay out and architectural drawings for the campsite and equipment yards for approval by the respective Town council and Buliisa District. The contractor shall also apply and obtain development permit from the town council and district.
viii. The contractor shall ensure that all structures within the camp and equipment yard are maintained in a state of cleanliness
ix. The contractor shall prepare a decommissioning plan for approval by MLHUD, respective town councils and Buliisa district. He/she shall further ensure that after construction activities, the site is cleaned and restored to near its original state such that the land owners can use it productively.

8.1.5 Improved access to social Facilities

The social effects of the rehabilitated roads are likely to improve access to socio-community facilities, including, in particular, access to health centres, schools etc. There are four (4) schools, five (5) worship centres (4 churches and 1 mosque), two (2) markets, 1-night club, two town council offices and two health centers along the project roads (Table 4-45).

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As a result of good roads, private investors might be attracted to invest in the area to improve health services, schools etc. Local residents may be attracted to construct good houses due to increase in land value.

	Construction	Operation (Post Construction)
Project phase impacted		√

Impact enhancement

i. Access should be provided to the schools, health centers, worship centers and markets identified along the roads
ii. Positioning of the street lights should consider the location of these social facilities

8.1.6 Increased income from agricultural production, fishing and trade

The project will boost farmer and traders' incomes (especially in Biiso, Kihungya and Ngwedo) and accelerate development at village level. The proposed roads upgrading will allow free marketing of

produce and farmers will be able to access bigger markets while the trading centres will become more active.

Besides agriculture, three of the roads to be upgraded provide linkage to landing sites e.g. Butiaba fish landing site and Kawaibanda landing site. Upgrading these roads is likely to stimulate fishing activities in Butiaba, due to better and faster access to markets. Moreover, there will be higher chances for development of local transport facilities. This impact will be post construction and will be long term leading to improvement in the livelihoods of the fishing community.

The main marketing areas currently are local weekly markets such as Auction Market and Bugoigo Daily market among others which are likely to become more active.

	Construction	Operation (Post Construction)
Project phase impacted		√

Impact enhancement

i. The areas along the proposed roads at the Markets should be designed with bays to accommodate vehicles that will be transporting merchandise to bigger markets
ii. Traders, farmers and fishermen should form transport associations

8.1.7 Increased value of land

The price of land and property including rental houses along these roads will rise after road improvement. This will provide monetary benefits to the owners of the property. This impact will be post construction and will be long term. However, it will only benefit the property owners while tenants and buyers will pay higher prices.

	Construction	Operation (Post Construction)
Project phase impacted		√

Impact enhancement

i. Regulation of prices by the district land board to ensure that they are not over raised by property owners as this can discourage people from buying such land hence limiting development.

8.1.8 Spur development in the area

The upgrading of the roads will ease movement in the area and thus attract investors to set up businesses along these roads. This will in turn boost economic activity and lead to development of the area. This will also benefit the Town Council and the district as a whole through the revenue collected from these establishments.

	Construction	Operation (Post Construction)
Project phase impacted		√

Impact enhancement

i. The respective Town Councils should institute measures to maintain the aesthetic beauty brought about by these roads for example ensuring waste management through installing waste collection bins along the project roads and sensitizing the community especially roadside businesses about proper waste management to ensure the roads are kept free off litter

8.1.9 Improved security in the area

The roadside solar lights along the proposed roads will increase visibility on the road at night hence reducing crime in the area. This impact will be long term and will benefit all road users and roadside businesses and residentials

	Construction	Operation (Post Construction)
Project phase impacted		√

Impact enhancement

i. Continuous community awareness on community policing to safeguard the street lights.

8.1.10 Aesthetic value

The tarmac roads shall contribute to the improvement of scenery in the urban areas. Paved roads with good landscaping, street lighting and good drainage will improve the beauty of the area. In addition, there will be a reduction in the levels of dust generated after construction leading to cleaner buildings on the road side. The impact will be long term but will require constant efforts from the respective Town Councils and behavioural change from the people to maintain the beauty.

	Construction	Operation (Post Construction)
Project phase impacted		√

Impact enhancement

i. The respective Town Councils should institute measures to maintain the aesthetic beauty brought abought by these roads for example ensuring waste management through installing waste collection bins along the project roads and sensitizing the community especially roadside businesses about proper waste management to ensure the roads are kept free off litter

8.2 Negative Impacts

8.2.1 Improper management of cut to spoil during construction

Earthworks associated with site preparation may generate considerable quantities of cut to spoil. Management of large volumes of cut to spoil can constitute a major disposal challenge when improperly planned. Care must be taken to avoid this occurring during the upgrading of the roads.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact characterisation

If waste material is improperly managed and disposed of during construction of the roads, the impact duration would be short to medium term. The extent of the impact would be local and limited to the immediate neighbourhood of disposal sites on land, but might also have considerable spatial extent downstream of deposition site in a wetland. Impact magnitude can therefore be considered major and receptor (wetlands) sensitivity high. Therefore, impact significance is major.

Impact Significance

	Sensitivity of receptor

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

Impact receptors: Communities and watercourses.

***Mitigation measures**:*

i. The contractor shall, in consultation with the District Environment Officer and the supervising engineer identify suitable sites for temporary stockpiling of the cut to spoil material which shall later be used in restoration of borrow pits and quarries. Some of the parameters to be considered in site selection shall include;
   - Access to the site;
   - Drainage of the area;
   - Zoning or physical development planning of the area by the local authority;
   - Settlement patterns in the area;
   - Consent from the land owner
   - Security of the area; and
   - Sensitivity of the environment and its neighboring areas (Materials must be stored away from surface watercourses, flood zones and groundwater recharge areas to prevent environmental harm to water), among others.

ii. The contractor shall develop and implement a Stockpile management plan to guide in proper handling and management of these temporary stockpile sites. Components of the plan should include;
   - Procedure for stockpile site selection (including environment and social screening)
   - Stockpile site risk analysis and impact management
   - Materials flow and management
   - Materials inventory and Record keeping
   - Onsite inspection checklist
   - Site restoration plan

iii. Under no circumstances must the Contractor accept request from persons who wish to use cut-to spoil (stripped overburden) to illegally reclaim wetlands.

8.2.2 Mismanagement of generated waste

The construction phase is usually accompanied by generation of a number of wastes that ranges from construction wastes, hazardous wastes to domestic wastes. Wastes which will be generated during the construction phase include the following:

- Vegetation waste from site clearance;
- Excavated materials from earthworks (e.g. cuttings, re-grading works);
- General construction waste (e.g. wood, scrap metal, concrete, empty cement bags);
- Domestic wastes generated by site workers (plastic bottles (mostly drink/ water bottles), paper, cloths, food scraps, sewage)

These waste if not properly managed will have the following negative impacts:

- Heaps of collected rubbish pose a nuisance;
- Associated with bad odour;

- Harbour disease causing vectors like flies;
- Contaminate the soil or the environment on which it seats, and this can pose a long-lasting negative impact.

Therefore, management of all this waste is crucial to the health and safety of the workers and host community.

During ESIA studies, it was established that Buliisa and Butiaba Town Councils do not have gazetted areas for the disposal of waste and so it will be the responsibility of the contractor to procure services of a waste handler with approval of the District Environment Officer to undertake regular collection and disposal of this waste in designated sites in the neighbouring areas, preferably Hoima. For hazardous wastes, the waste handler should be registered by NEMA.

	Construction	**Operation (Post Construction)**
Project phase impacted	√	√

Impact Evaluation: Such wastes generated do not only contaminate the environment but also cause diseases among the community and render some soils infertile. Excavated materials and residual wastes may give rise to impacts during their handling, temporary stockpiling or storage on site, transportation and final disposal. Heaping of debris affects the aesthetics of the area and leads to accidents like cuts from sharp objects.

Impact significance: The likelihood of occurrence of this impact is **medium** given that some of these waste materials especially the plastic/polythene is not biodegradable may cause long term injurious effects to the environment. The impact Intensity is rated **low,** because the impact will be a short-term impact, localised in spatial extent since its occurrence will be limited to the construction phase in a particular section of the project extent hence the significance of the impact before Mitigation is rated **moderate.**

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

Receptors: Construction contractor staff, and the neighbouring local community.

General Mitigation Measures

i. A waste management plan will be developed by the contractor, to ensure that measures for handling all project-generated waste are in place; the plan should include the following;
   - Waste sources and streams (Nature and Type of Waste Materials);
   - Waste Management Hierarchy (Reduce, Reuse, Recycle, disposal);
   - Storage and disposal (Location and type of waste storage bins, Collection and Transportation, Waste storage and transportation permits, storage of hazardous waste;
   - Training and Awareness;
   - Waste inventory and record keeping; and
   - Waste management checklist, among others

ii. All materials will be re-used or transported off site as soon as possible to minimize the potential for adverse environmental impacts. It is recognized that some stockpiling of materials will be required in some instances although these will be segregated in terms of material type as far as practical to facilitate material re-use (i.e. top soil for landscaping, suitable fill for engineering works).
iii. All excavated material will be handled in a manner that minimizes the release of fugitive dust (especially during hot and dry weather) e.g. by covering the haulage trucks with tarpaulin and where possible the movement of material will be kept to a minimum.
iv. The contractor will be obligated to ensure responsible waste management, for example identification and engagement of an approved waste contractor, in consultation with the District Environment Officer, who will dispose of waste to a licensed area/ landfill;
v. Waste will be collected, sorted and temporarily stockpiled in a designated area before haulage off site.
vi. Waste minimization will be emphasized and implemented throughout this stage of the project;
vii. Avoiding and/or minimize waste generation where practical by improvements or changes in the project design or site procedures;
viii. The principles of an integrated solid waste management system will be implemented i.e. reduction at source, reuse and recycle. This will be implemented by use of accurate estimates of dimensions and quantities of materials required, use of durable materials that will not require replacement often, providing proper facilities for handling and storage of construction materials to minimize waste by damage;
ix. Waste will be removed from the site in a manner consistent with national regulations (for example, transporters will be licensed). While transporting waste, care will be taken to prevent waste spreading to areas outside the site boundary;
x. Construction workers will be provided with appropriate protective gear during handling of waste;
xi. Consider maximizing the re-use of excavated materials for example, within landscape mounds;
xii. Provide an area within the construction site to allow for sorting and segregation of materials
xiii. Material will be covered during heavy rainfall;
xiv. Using dust suppression techniques (such as dampening with fine water spray and covering with tarpaulin);
xv. Locating stockpiles to minimize potential visual impacts;

Impact Mitigation Enhancement

Before the commencement of civil works, the contractor will develop a Waste Management Plan (WMP) to be implemented during civil works. The WMP will be consistent with the waste legislation of Uganda and other national and international best practices. The WMP will be a conclusive approach to manage all waste components in accordance with the best health, environmental, economic and engineering practices (and responsive to public attitudes). The WMP will be developed on the basis of the Waste Management Hierarchy,

8.2.3 Loss of vegetation along project roads and access routes to quarry/ borrow sites

During the road upgrading the existing alignment of the road will be retained as much as possible.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact severity: The likelihood of the impact occurring is medium since the existing road alignment has been maintained for all the roads. Duration of the impact will be medium-term since land take, if it happens, would be permanent. It will, however, only be restricted to a few areas and consent will be sought from adjacent plot owners on the existence of 30-meter corridor for roads, since the land in the area is not fully surveyed. Without mitigation, severity of this impact would be medium since the existing road is wide enough in most areas resulting in an overall significance level of moderate.

Impact significance:

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

Impact receptors; Landowners adjoining the project roads

Mitigation measures:

i. Contractors should have a contractual obligation to restore areas of temporary land take after construction.
ii. Tree planting should be incorporated as a restoration activity at the end of the construction phase in areas where trees are cut down during construction activities.
iii. The contractor should sensitize workers about ecological sensitivity and advise them against irresponsible or excessive vegetation clearance. Unnecessary vegetation stripping and damage to crops and plantations should also be avoided.
iv. Develop and implement a vegetation restoration plan which incorporates planting of trees and ornamentals in the project area.
v. Liaison with the local government authorities for post-project management of trees planted under the project.
vi. Confine vegetation clearance only to the road sections planned for civil works and sections where trees may pause safety risk to road users and traffic.
vii. Conduct awareness creation (amongst the public and contractor's workers) focusing on vegetation conservation prior to and during road construction.

8.2.4 Impact on Air quality

Higher traffic volume plying the roads might lead to deterioration of local air shed. Exhaust emissions from construction equipment might elevate local levels of exhaust particulates (soot), oxides of sulphur (SOx), oxides of nitrogen (NOX), ground level ozone and unburnt fuel emissions or volatile organic carbons (VOCs), all of which can exacerbate various respiratory ailments especially in elderly people and children. Activities likely to affect air quality include earthworks (excavation, grading, shaping), haulage and dumping of construction material such as gravel, aggregate and sand from their various sources to the sites.

Findings from field baseline air quality measurements indicated that at most locations where monitoring was conducted, TSP levels conformed to the draft national limit of 0.300 µg/m3. Gas monitoring

equipment did not detect CO, NO, NO2, Cl2, ClO2, H2S and combustible gases as well indicating a clean environment with respect to air quality.

However, Gongo Road, (covering points at GPS 0323218, 0234452 and GPS 0323698, 0234526) was found to exhibit the highest dust concentrations during monitoring, above the minimum standards. This was due to the location's proximity to the CICO company camp. This road and the junction leading to it also experienced major vehicular traffic from the road works trucks moving in and out of the camp. Relatively high levels of dust at Speke road (GPS 0323942, 0232419) were also encountered due to the proximity to the main road, capturing dust from moving trucks ferrying material along the main road.

Therefore, increase in traffic from construction project construction equipment and vehicular movement is expected to increase dust levels in areas where they were below the minimum standards and worsen the situation along Gongo and Speke roads where levels are already above standard.

	Construction	**Operation (Post Construction)**
Project phase impacted	√	

Impact characterization:
Dust will degrade local air quality and possibly lead to short-term respiratory health effects. The dust will also cause a nuisance to households located besides the roads constructed. Although never compensated, staining of trade commodities in shops (especially foodstuffs: salt, sugar, flour, etc) with dust translates into a financial loss for local business owners. Excessive dust in dwellings poses a short-term health impact. The magnitude of this impact is expected to be moderate. Impact significance is therefore predicted to be Moderate.

Impact significance:

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

Impact receptors: Settlements and social amenities close to the project roads e.g. schools, hospitals.
Mitigation measures:

i. The Contractor will make all reasonable effort to suppress dust during earthworks and specific actions will include continually watering dusty construction areas with a water bowser.
ii. Installation of humps along the project roads as well as haulage routes to reduce the speed of trucks
iii. During transportation, material should be covered with tarpaulin to prevent loose particles from flying off into the atmosphere thus affecting air quality
iv. The contractor shall institute measures to control emission of gases from vehicles and equipment, this can be done by frequent and timely servicing of these vehicles
v. Burning of garbage in the workers' camp and along the roads shall be prohibited.
vi. The contractor shall provide appropriate PPE to workers engaged in dusty settings for example nose masks;
vii. The contractor shall undertake continuous awareness creation to the public regarding the scheduled works in order to minimise submission of complaints from the public

8.2.5 Impact on Ambient Noise

During road construction, it is anticipated that various activities will lead to increment in existing noise levels in the project area. Activities such as movement of construction vehicles and machinery including: trucks, concrete mixer, earth works, offloading and loading of equipment and material at site among others will generally contribute to the increase in noise levels.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Findings from baseline noise level measurements indicated that some of the noise levels were above the National regulation threshold for noise in residential and commercial establishments, (i.e. above 55 dB (L_{Aeq}). This indicates non-conforming baseline noise levels at certain road sections in Buliisa Town Council and this can be attributed to the high vehicular-traffic.

Five (5) of the eighteen (18) roads in Buliisa Town Council indicated higher than average noise levels. These include

- Baker Road (GPS 0323717, 0232366),
- Muhoojo Road Segment 1 (GPS 0323279, 0234064)
- Muhoojo Road Segment 2 (GPS 0323234, 0233574)
- Rift Valley Road (GPS 0323820, 0232146)
- Commercial Road Segment 3 (GPS 0323790, 0234384)

There were measured noise levels above the National regulation threshold for noise in residential and commercial establishments, (i.e. above 55 dB (L_{Aeq}). This indicates non-conforming baseline noise levels at certain road sections in Butiaba Town Council.

Magali road in Butiaba Town Council also registered higher than limit average noise levels due to the market day activities. Auxiliary market activities like announcements over loud speakers also contributed to the recorded levels along the road. The road is also very busy with vehicle and motorcycle traffic as well as foot traffic.

Factors that lead to increased noise levels include but are not limited to:

- Increase in traffic (vehicles passing per day);
- Increase in the percentage of heavy vehicles as a fraction of the total number of vehicles passing per day; and,
- Road curves lead to increased noise levels on the concave (inward) side of the road.

Impact characterization:
Impact magnitude is expected to be moderate and sensitivity medium considering the already elevated noise levels along some of the project roads. Therefore, impact significance is Moderate

Impact significance:

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

Impact receptors: Dwellings and social amenities along the project roads e.g. schools, health centers.

Mitigation measures:

i. The contractor's workers on site will be made aware of, and adhere to, the regulatory noise limits for a construction site in a commercial area (75 dBA) and that in a residential area (60 dBA) as provided for by the National Environment (Noise Standards & Control) Regulations, 2003;
ii. Construction activities will be limited to daytime;
iii. Regular care and maintenance of vehicles and equipment will be undertaken to ensure they run smoothly so as to minimize emissions of noise;
iv. Project machines will be turned off when not in use;
v. Workers' campsites and equipment yard will be located at least 1km away from any dwelling
vi. The contractor shall provide workers engaged in noise generating activities with appropriate PPE; Specifically ear muffs

8.2.6 Disrupted traffic and access

During construction activities may disrupt traffic flow and impede access to social infrastructure e.g. schools, health services, markets and worship centre

Table 4-45) and roadside businesses. This may result into considerable disruption of economic and social activities in the project area and may cause stress and resentment of project activities.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact severity: Blockage of access to social amenities and property may lead to loss of income of traders who fail to access their shops or markets. In cases where access to health facilities is blocked, it could lead to loss of lives. People are also at risk of accidents as they try to manoeuvre around blocked facilities. Likelihood of impact occurrence is medium but severity high where there is loss of income and in accident cases. Impact significance is therefore major.

Impact significance:

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

Impact receptors; Community, school going children and teachers, business persons.

Mitigation measures:

i. The Contractor should provide alternative routes and provide adequate and appropriate signs warning road users about traffic detours.
ii. The contractor should notify the community of the detours in advance through community meetings, radio and other measures.
iii. Contractor should employ flag persons at detours to guide/ control traffic.
iv. In locations where the diversions are located outside the ROW, areas with agricultural lands with crops will be avoided, and the Contractor will have to construct half the road width at a time.
v. In some cases, traffic may have to be diverted temporarily across private land. In such cases, permission will be obtained from the land owners, as well as from community leaders.
vi. All diversions will be planned and their routes approved by the Supervising Engineer,
vii. Diversions will take into consideration the location of homesteads, settlements, villages, PCRs, trees as well as infrastructure such as power lines, water pipelines, etc.
viii. As a condition of contract, diversions that cease to be of use when the road works are complete will be restored to as near as possible their original state, through landscaping and rehabilitation.
ix. During cut and fill operations, the contractor should phase activities in such a way as to provide temporary access in sections around settlements and socio-economic facilities

8.2.7 Soil Erosion and Drainage Impacts

Soil erosion is most likely to occur during the construction period due to excavation, dredging, cutting and filling, removal of vegetation cover and unplanned temporary storage of gravel and overburden on the roadsides. During roadworks, culverts may be replaced along some sections of the bypass and this could alter surface water hydrology especially during rainy seasons, leading to localised floods or ponding

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact severity; this negative impact is temporary and can be reversible with proper erosion control practices. Impact magnitude is expected to be moderate and receptor sensitivity medium because drainage impacts have been prevalent especially in areas of Butiaba even before the project. Therefore, impact significance is Moderate.

Impact significance:

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

Impact receptors: Wetlands and buildings close to the project roads.

Mitigation measures:

i. Where necessary, alternative drainage shall be created to avoid localised floods;
ii. Unnecessary vegetation clearance will be avoided;
iii. For civil works undertaken during rainy periods, silt traps and interceptor drains shall be provided on site;
iv. Overburden or other construction materials shall not be stored or dumped near marshes;
v. When construction is undertaken during rainy periods, the free flow of water shall be maintained using sludge pumps or flexible hoses to bypass the construction site without stagnating and contaminating the water; and,
vi. Appropriate engineering designs and standards shall be adopted to maintain

8.2.8 Formation of bumps (protuberance on the road level) from construction of culverts

During road upgrade, a number of culverts have to be positioned across small rivers and streams. Buliisa being a flat area, the roads will have to be raised and this may necessitate use of wider culverts which will range from 600mm to 1200mm. Hydraulic designs has proposed a total of 37 lines of cross-drainage culverts including 11 lines of 1200mm diameter culverts, 7 lines of 900mm culverts and 19 lines of 600mm diameter culverts. The proposed number of culverts and diameter of each road are presented in **Figure 3-20**. In the process of installing culverts on an existing road in low lying areas, there is an inevitable formation of a bump (protuberance on the road level). This is brought about by the fact that the elevations of the new road are usually higher than those of the existing road.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact evaluation: experience from past and ongoing projects in the area shows that installation of culverts leaves high elevations of the area impairing visibility of road users from either side thus causing accidents of humans and animals.

Impact severity: Impact is negative but temporary and reversible. Likelihood of this impact occurring is high because at least one culvert has been proposed for each road. Impact severity will be high along White, Speke, Rift valley and Marine access roads where 1200 mm diameter culverts will be installed. Impact severity is medium and short term however accidents resulting into death and disability of road users and animals will be long-term and irreversible. Overall significance is thus moderate.

Impact significance:

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

Impact receptors: Road users.

Mitigation:

i. The contractor should install appropriate signage toward the culverts at either sides to warn road users of the protuberance on the road level
ii. Temporary humps can be installed before these culverts on either side to help reduce speed of motorists as they approach the culverts
iii. The contractor's community liaison officer should continuously inform the community on the progress of the construction activities, in this regard for example, emphasising that the roads will be eventually levelled and that the culvert bumps are temporary.

8.2.9 Damage to material haulage roads

Road construction will necessitate transportation of materials from sources to worksites. Heavy trucks may cause damage to the haulage roads rendering them non-motorable especially in rainy seasons.

	Construction	Operation (Post Construction)
Project phase impacted	√	√

Impact severity: Likelihood of this *potential* impact actually occurring is high since materials will be ferried from different locations to the project roads. Material haulage will be short-term ceasing with completion of construction activities but the damage of the roads will be long term and could lead to secondary effects such as accidents. Impact severity is medium with implementation of appropriate measures and so overall, impact significance is *major*.

Impact significance:

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

Receptors: All users of these roads.

Mitigation measures:

i. Contractor should provide temporary road signage during construction and ensure drivers observe speed limits of 40km/hr.
ii. Contractor should maintain the haulage routes in a motorable state by rehabilitating the existing roads utilized for transportation of material during road construction.

iii. Driver shall sign a code of conduct on speed control and observing road regulations
iv. Training of Drivers on speed control through conducting tool box talks
v. Contractor should provide speed control devices, for example, humps.

8.2.10 Accidents to school children and disruption of the learning process

During road construction, dust, noise, vibration and traffic from vehicles and construction machinery will disrupt the learning process for schools in close proximity to the proposed roads. The schools likely to be affected include; Uganda Martyrs' primary school, Uganda Martyrs' comprehensive secondary school, Divine Secondary School and Buliisa primary school.

Haulage trucks and road construction equipment could cause accidents to school children if caution is not taken to manage the speed.
Heavy earth moving equipment might attract inquisitive children to construction sites to gaze at this machinery for long hours. The value of the aspect is high. The duration of the impact will be short term, but the impact can have far reaching consequences if not well managed. Other incidences such as school drop outs for children who get jobs linked to the project and disruption of movements of teachers and pupils could also occur as a result of project vehicles.

During the operation phase, over speeding of vehicles due to the "new road" effect may also increase the rate of accidents along the roads thus affecting schools that are close to these roads.

	Construction	Operation (Post Construction)
Project phase impacted	√	√

Impact severity
The likelihood of the impact happening is high given that there are a number of schools along the project roads. The impact intensity is rated medium since its duration is short term lasting the construction period but consequences if not managed can be long term e.g. in accidents leading to disability or even death of the pupils. The overall significance of the impact is thus rated moderate**.**

Impact significance:

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

Receptors; Pupils/students and teachers.

Mitigation measures:
i. For the four schools that are fairly exposed to the road, there should be provisions to screen off such sections with iron sheets.
ii. The contractor will engage school administrators to sensitize pupils/students about the risks associated with the road construction and necessary precautions they need to undertake.
iii. Traffic guides e.g. flag persons will be employed at construction sites close to schools in busy areas to control traffic
iv. Continuous sensitization of truck drivers and equipment operators to take caution when working in areas close to schools especially regarding speed control

v. Humps will be erected across sections near schools to help in speed reduction
vi. Information regarding the work plan for construction activities along sections with schools will be disseminated to the respective schools in a timely manner to enable the school administrations make any necessary plans that they may see fit e.g. sensitization of their pupils and students etc.
vii. Sensitization of parents and community as whole on risk exposure of children and the need to protect children
viii. No child shall be allowed at any construction site
ix. Drivers shall be required to observe speed limit of 20Km along road sections near schools
x. Provide alternative access in case a school access is affected
xi. The contractor shall sensitize the workers on children's rights
xii. Each worker shall sign a child protection code of conduct that stipulates worker's responsibility to observe the rights of children and report any child rights violations as per the children Rights

8.2.11 Infringement on the rights of women and girls at the work place and in communities

The concerns include; sexual harassment of the female workers by the male workers especially their superiors, denial of employment opportunities to women due to the nature of employment opportunities usually available in the construction works that are usually perceived to be managed by men, physical violence, and male partners forcefully taking away women's pay and lack of proper public facilities such as toilets and shelter for their children as they work on the road. Other potential negative impacts on women include immorality especially with the young girls of the area in efforts to gain favour for employment opportunities, this can result into spread of sexually transmitted diseases such as HIV/AIDS and other sexually related diseases, abandonment by partners in case of unwanted pregnancies among others.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact severity;
The likelihood of impact occurrence is high. Impact intensity is medium; however, consequences of family breakages, sexual assault and sexually transmitted diseases can lead to long term effects. However, the impact can be effectively alleviated against by implementation of the appropriate measures hence making the overall impact moderate.

Impact significance:

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

Receptors; Women and girls

Mitigation measures

i. The contractor will develop and implement a sexual harassment policy containing reporting procedures in case of any incident and penalties to the culprits. The contents of the policy will be disseminated to all workers.

ii. IEC material prohibiting violence and sexual harassment will be displayed in conspicuous places at all work sites including the camp
iii. Induction and continuous sensitization of all workers and supervisors about sexual harassment will be undertaken to avoid any possible sexual harassment.
iv. Information dissemination about dangers of HIV/AIDS to the community will be done all throughout the period of the project. The messages will be passed on using the locally understood language for better understanding and the main means of information access to make them effective.
v. Workers will be sensitized on their gender rights and responsibilities. The Contractor will conduct gender sensitization to the work force on matters such as gender sensitive communication and on the gender sensitive conduct of workers towards women amongst others.
vi. The project will install gender sensitivity facilities (toilets and bath shelters).
vii. The contractor will develop and implement a Code of Conduct that will prohibit use of abusive and obscene language and prohibit sexual relations with the local communities especially married couple to avoid family break ups.
viii. The contractor shall ensure engendering recruitment of workers within the contractor's recruitment policy by ensuring both males and female have equal opportunity to work or supply contractors
ix. Recruitment of Social Development Officer/ Sociologist to ensure compliance with Gender and equity requirements under the contract
x. The working time shall be between 8-00 am to 5:30 pm to enable women attend to their home activities before and after work
xi. The contractor shall have and implement a Gender Based Violence code of conduct
xii. Conduct community sensitizations on gender inclusiveness and equity
xiii. The contractor shall ensure provision of gender responsive Personal Protective Equipment
xiv. At the campsite, the contractor shall provide a room for lactating mothers to breastfeed their babies.
xv. The contractor shall provide emergency sanitary wear for females and separate containers for their disposal
xvi. The contractor shall ensure provision of both male and female condoms within the campsite, preferably in the toilets.

8.2.12 Insecurity

The influx of new people in the project area comes with all sorts of vices including stealing project materials and equipment. Such unscrupulous people may involve the local community members and project workers in their activities which in the long run might affect the quality of the works. Security threats such as theft can lead to loss of construction materials such as stones, and cement bags, that in turn may lead to delay in work progress, shortage of materials and contractor's capital and above all failure to complete work.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact Evaluation: Theft of project materials normally leads to an increase in the project cost and may contribute to project delays. ***Receptors***: Local community and the contractor.

Impact significance: Sensitivity is rated **very low** since the project activities will be undertaken within an enclosed area by relatively small number of workers and the influx of workers will be limited by the strict recruitment policy by the contractor. The Intensity Is rated **medium** because the occurrence of

security threats may pose a problem and risk to both the works and the workers and will have a moderate impact on the project as this can delay construction works or even hinder project implementation. The significance of the impact is **Moderate**

Impact significance:

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

Mitigation Measures

All reasonable effort will be made to minimise insecurity and theft issues during construction activities and specific actions include:

i. Involve LC1s in recruitment of workers who should all present national IDs for easy identification;
ii. Hire security guards from a registered company that have records of each guard, to protect both the contractor and the project site;
iii. Ensure adequate lighting at the site at night;
iv. Collaborate with Buliisa and Butiaba police stations.
v. "No Trespassing" signs will be prominently displayed on fencing or the perimeter of the job site. Such signs will discourage unauthorized intrusion onto the job site and if correctly worded aids in the prosecution of apprehended trespassers.

8.2.13 Occupational diseases and accident risks to workers

Construction traffic, excavation and working with equipment may pose accident risk to workers either when equipment is operated by inexperienced workers or when in a poor mechanical condition. Inadequate OHS risks or problems could also result from insufficient medical capability at the construction site; or neglect of safety equipment, precautions and procedures. Buliisa being an area with relatively high temperatures, construction workers are likely to suffer heat rash, in addition to burns from handling hot bitumen during road surfacing. Construction noise is a major source of environmental noise pollution and a cluster of equipment at a road construction site can produce a steady roar throughout the day.
Lack of hand wash water and mobile toilet facilities at work sites could also pose considerable inconvenience and health risk to workers (or local communities traversed).
Some impacts could be accidents that are minor while others could be grave leading to permanent disability or loss of life of construction workers.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact characterisation
Duration of the impact will be short-term occurring only during the construction phase, but the magnitude in terms of potential number of workers affected would be classified as major. The extent of the impact will be local or national depending on origin of construction workers. The likelihood of the impact occurring is high considering the usually low level of safety at construction sites in Uganda and receptor sensitivity

is high considering the potentially grave consequences of occupational accidents. Significance of this impact is therefore predicted to be moderate.

Impact evaluation: Accidents could cause considerable damage, financial loss and harm to human life. While largely reversible, some impacts such as loss of human life and body injury are irreversible.

Impact significance: The receptor sensitivity is considered ***medium*** given that although such impacts may be irreversible once they occur; the workers have done similar work and have knowledge on how to avoid such incidences. Nevertheless, this gives rise to an impact of ***moderate*** significance.

Impact significance:

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

Mitigation measures

i. Hoarding off the site to prevent access by un authorized person
ii. A qualified Health and Safety Officer will be recruited by the Contractor to oversee OHS matters on a daily basis.
iii. All construction workers will be oriented on safe work practices and guidelines and ensure that they adhere to them. The contractor will conduct toolbox meeting every morning before work commences
iv. Appropriate signage will be used to warn staff and/ or visitors that are not involved in construction and operation activities in risky places.
v. Provide first Aid kits fully equipped with the necessary materials at all working sites; and train a first aider to administer it.
vi. The Contractor shall display “No smoking” signs in office, construction camps as well as high risk areas prone to fire hazards e.g. near fuel tanks; and
vii. The Contractor shall provide signage reminding workers of use of PPE at appropriate locations within the camp.
viii. Strict instructions will be given to drivers and operators of equipment/ machinery.
ix. Road traffic signs should be installed on access roads to control speed of vehicles transporting material to the site
x. Supervision of works should be done regularly (daily during construction and weekly during operation) to ensure that safety conditions are met while any deviation from safety regulations is immediately reclaimed following the best practices regarding safety at work.
xi. Clear communication line will be set between workers and operators/ drivers of heavy equipment.
xii. Adequate and appropriate personnel protective gear will be provided to the employees. Due to the high temperatures in the project area, light weight high visibility jackets should be opted for to avoid exposure of the workers to heat strokes enhanced by heavy clothing
xiii. Instituting Health and Safety committees
xiv. Conducting routine Health and Safety Inspections to identify risks associated with various activities in order to mitigate them early enough
xv. Establish a camp site clinic with basic medical equipment and a qualified health personnel
xvi. The contractor shall have a Doctor on call in cases of emergencies
xvii. The contractor shall identify and have MoU with Medical service provider for referral cases

xviii. The contractor shall have an onsite Ambulance for transportation of casualties and patients for medical care
xix. Working time shall be restricted to 8:00 am to 6:30 pm
xx. Each worker shall have a duly signed contract, code of conduct and biodata form
xxi. The contractor shall issue all workers with company identification.
xxii. The contractor's Health and safety officer in conjunction with the District Health Officer shall organise and conduct regular First Aid trainings of all workers
xxiii. Tool box talks
xxiv. Recruit the cleaners to ensure the work place is kept in a state of cleanliness and security guards to ensure work place is properly secured
xxv. Provide registers for all workers and visitors
xxvi. Workers remuneration shall be made not exceeding 7 days from due date

8.2.14 Increase risk of HIV/AIDS and other STDs to workers and community

The proposed project is expected to be generating an influx of migrant workers which will increase the risk of spread of HIV/AIDS and other STDs among workers and in the community. The impact of increased risk of HIV includes pressure on local health systems, impact on community livelihood and social cohesion. Road Construction may cause population influx which will outweigh the available ART services and access to Antiretroviral drugs since government cannot adjust supply subsequently. Increased HIV prevalence would result into reversal of economic gains within the community and may reduce the ability of the community to benefit from the project.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact severity: Unless adequate sensitisation of all workers and communities in the project area is undertaken by contractor, likelihood of the impact occurring is medium (considering some level of awareness among general populace). Duration of the impact will be long-term lasting the victims' life time. Impact severity is high and overall, significance is major.

Impact significance:

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

Impact receptors; Road construction workers, Local community

Mitigation measures

i. Continuous sensitization of workers and community should be conducted to raise awareness of HIV/AIDS
ii. As much as possible, construction workers should be accommodated at the camp to reduce interaction with the community that would increase the risk of HIV/AIDS spread
iii. Facilitate medical centers along project roads e.g. Butiaba Health centre II and Buliisa health center IV with medical supplies like testing kits to deliver services to the community

iv. Provide free male and female condoms at the workers' camp preferably in the toilets and sensitize workers on their correct usage
v. Facilitate HCT/ART outreaches in the communities

8.2.15 Increase in Gender inequalities including Gender Based Violence

High disposable income especially for males increases predisposition to extra marital affairs. The extra marital affairs often involve both married and un-married male and females and sometimes young females below the age of consent. This newly introduced behaviour leads to a high level of family conflict, family break-ups and physical violence among others. Other gender issues include; sexual harassment, polygamy and male partners forcefully taking away women's pay.
Community consultations revealed situations where men with new disposable income completely abandon their families resulting into single mothers. Some husbands reportedly become unruly and abuse their wives because they feel they can access any woman of their choice.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact severity: Unless adequate sensitisation of workers and the community is undertaken, likelihood of the impact occurring is high (considering some level of awareness among general populace). Duration of the impact will be short term lasting construction phase but associated social and health effects are long-term and irreversible. This is impact of high severity resulting in an overall significance level of *major*.

Impact significance:

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

Impact receptors; communities along the project roads

Mitigation measures

i. Contractor with his/her subcontractors should be obliged to have Codes of Conduct for employees and anti-retaliation policies.
ii. Distribution of IEC materials to workers and communities within the project area
iii. Sensitization of community members on the challenges of additional disposable income of migrant workers how it can have a disruptive effect on the family and therefore be prepared
iv. Sensitization to both contactors and communities on gender related issues for example, during construction, gender sensitive messages should be adopted (examples include "Go Slow, Road Works in Progress" as opposed to "Men at Work"
v. Empower community leadership to be able to protect the rights of children, woman and family norms.
vi. The contractors should have regular community engagement meetings.
vii. The contractors should have grievance redress mechanisms.

8.2.16 Child Sexual Abuse and Exploitation

There are five schools along the project roads. It is likely that workers associated with the project will engage in sexual relationships with school and under aged children. During a community meeting, raised concern about previous construction projects where child labour and early pregnancy was reported. The community indicated that re-occurrence of such behaviours may reduce community support for the project.

	Construction	Operation (Post Construction)
Project phase impacted	√	

***Impact severity*:** the likelihood of this impact occurring is high considering there are schools along the roads. Impact intensity is high since the sexually abused children may suffer complications that can last their times, including contracting diseases, child pregnancies and school dropout. Overall, impact significance is moderate.

Impact significance:

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

Impact receptors; children in communities and schools along the project roads
Mitigation measures

i. The contractor will be required to develop child protection plan which will be implemented in collaboration with community leaders, schools and districts.
ii. No child (any person below 18 years) shall be employed by the contractor or sub-contractor on this project
iii. The contractor to provide barriers (hoarding) of the school sections near the roads to minimize interruption of children's learning during construction activities
iv. Provide road signages along schools
v. The contractor will be required to collaborate with communities to provide information on child abuse cases.
vi. Integrate HIV and AIDS awareness to children
vii. The community should be sensitized on the risks of child abuse
viii. Contractors should consult and engage the School administration before works commencement near the schools
ix. The contractor to maximise periods of school holidays when children are out of school
x. Minimize the interaction of children with the workers, and closely monitor and report worker's behaviour/conduct.
xi. Provide adequate sensitization to workers, community and schools on road safety
xii. Cases of abuse should be reported to the police for investigation and prosecution.
xiii. Involving school management committees in ensuring accidents prevention and management

8.2.17 Impacts on community health and safety

With the influx of people in an area as a result of construction works and introduction of equipment and various materials comes associated impacts that affect the health and safety of the communities in the project area. Machinery and equipment such as vibrators, graders, trucks, rollers/compactors, excavators, concrete mixers, vehicles etc increase traffic on the roads and increase the risks of accidents especially in the town and trading centres and institutions such as schools near the project roads. Construction activities generate dust, noise and vibrations and the influx of temporary construction labour from different places increase the rate of spread of communicable diseases e.g. Flu, cough, STIs, enteric fevers rising from poor sanitation in residences of the workers, among others.

	Construction	Operation (Post Construction)
Project phase impacted	√	

***Impact severity*:** the likelihood of this impact occurring is medium considering the fact that there are settlements and institutions along the proposed roads. Impact intensity is medium since the impacts will be short term and will only last the construction period. However, for those that have contracted communicable diseases like HIV/AIDS, the impact will be long term and irreversible. Nonetheless, measures can be instituted to avoid the occurrence of these impacts. Overall, the impact significance is moderate.

Impact significance:

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

Impact receptors; communities, businesses and institutions along the different roads

Mitigation measures

i. The contractor will employ flag persons in busy sections of the roads e.g. town and trading centres to control traffic
ii. The contractor shall conduct continuous sensitization of the workers regarding public safety and health
iii. The contractor shall provide gender sensitive mobile toilets with handwashing facilities for workers along the road
iv. Road signage and barriers will be installed on dangerous spots e.g. around excavations, diversions and narrow sections
v. Humps will be erected to reduce speed on project roads and material haulage routes
vi. Noise generating activities will be restricted to day time (7:00am to 6:00pm) to allow the community rest at night
vii. Dust suppression by regular sprinkling of water on project roads and material haulage routes. Sprinkling especially close to towns, settlements and institutions can be done thrice a day Depending on the weather.
viii. The contractor will work in close collaborations with Traffic Police to enforce traffic rules and regulations along the roads under construction.
ix. The contractor shall ensure that all project trucks and vehicles are serviced regularly and operated by licensed operators.

Risks related to Mismanagement of Project Workers

The contractors shall have varying categories of workers experts, semi-skilled and non-skilled labour force. The different categories of workers are likely to experience differential treatment related to selective recruitment, denial of contracts, poor remuneration, unfair dismissal and harassment.

The following steps with mitigation measures shall be followed to ensure proper recruitment, management and discharge of workers.

i. Identification of staffing requirements in line with contract and ESMP

The contractor's team will be supported by the Human Resource Officer to document the job requirements for any existing unfilled position. The requirements will cover the following aspects;

a) Name of job
b) Category of the job (Technical or Non-technical)
c) Reporting structure
d) Duration of the job (Permanent for the project period or part time)
e) Gender Preference (For females only or open for all)
f) Any age preference
g) Qualifications (academic, experience)
h) Recruitment modalities (Open to Locals within the district or to all Nationals)
i) Application procedure (Hand written letter, filled form, recommendations from Local council)
j) Advertisement motilities (local radio, sub county notice boards, announcements in local churches)
k) Payment terms (Daily, Weekly, Monthly)
l) Amount payable
m) Any statutory deductions (PAYE, NSSF, Staff Provident etc)
n) Benefits (Medical cover, workman's compensation, lunch, transport, accommodation, water during working hours, medication, PPEs etc)
o) Anticipated start Date of candidate
p) Anticipated end of contract

ii. Review and approval by Consultant

The contractor shall then submit the jobs requirements to the Consultant for discussion and review. Since there are staff who are contractual to the assignment and those who are required under ESMMP implementation, the consultant shall ensure that the Client has approved these requirements.

iii. Advertisement

The contractor will engage the Local stakeholders like DLG and TC to ensure that the available jobs during the project are locally advertised in English and local language (s) to attract local applicant. Adverts will be also run on local media like Local Radios.

iv. Selecting, Interviewing, Screening, Vetting

A selected team of contractor and the DLG/ TC will be formed under the guidance of contractor's Human Resource Officer to undertake selection of candidates based on their eligibility compared with the set selection criteria as advertised and stated in the job requirements. The shortlisted candidates will then undergo interviews to select the best candidates. Best candidates will be screened for any previous conviction of criminal offences like Child Abuse, Sexual harassment etc and their medical status will be confirmed by a designed Medical Doctor.

v. Contract signing (staff and service providers)

After vetting and medical checkups, the qualifying best candidates will then be contracted. Contracting shall include an engagement and/ contract stating among others the following;

a) Name of Person
b) Contacts
c) Job Number
d) Job title
e) Terms of engagement (period, deliverables, reporting, salary/ wages, applicable statutory deductions, benefits)
f) Commencement date
g) End date
h) Working Hours
i) Circumstances of termination of engagement by either party
j) Applicable laws, Policies and Procedure for the engagement
k) Authorized signature

vi. Orientation and training of staff

The Human Resource Officer shall liaise with the Project team to orient all workers in existing policies including human resource, Child protection, Alcohol and Drug Abuse, Sexual Harassment, GBV, Environmental Protection, HIV/ AIDS Policies etc. The key safeguards requirements of Environment, Social, Health and Safety issues are complied with and the consequences of noncompliance shall be discussed across all staff. Staff will be given an opportunity to ask and clarify on a number of issues including circumstances under which the job could be lost and the safety measures for the job including disciplinary mechanisms, grievance redress mechanisms etc.

vii. Ensuring Workers' operations and welfare

The contractor shall fulfil the employer's requirements as enlisted in the contract and required by different legislations like Occupational Safety and Health, Employment Act, NCCF Act, etc.

viii. Deployment based on knowledge/skill and health condition (disabled, sick, etc)

- The recruitment shall be based on the qualifications and skills.
- For affirmative action, there will be particular jobs for females although the rest of the jobs will be open for both males and females. There will be no discrimination to persons with disabilities, persons living with HIV and AIDS in deployment
- The contractor will however consider availability of required support such individuals including access to health services.

ix. Site disciplinary measures for workforce and discharge strategy; Immunity of the workforce (fair treatment strategy)

- The purpose of a disciplinary procedure is to ensure that employees reach the required standards-both in conduct and competence- in discharging their duties.
- Before a disciplinary procedure is invoked at all, the employee shall be informally counselled about his conduct, attendance, work standards, or whatever it is that's causing the problem.
- To ensure workers' participation in disciplinary processes, the workers will constitute themselves to select representatives and form a workers' council that will be the key structure of ensuring that workers' grievances are captured and addressed by management.
- The Contractor's Sociologist will have the duty of ensuring that a workers' council is selected with more guidance sought from Labour Office.

x. Worker's, remuneration and welfare:

- The contractor shall state agreed amount in Uganda Shillings payable for each of the workers in the contract and the payment terms either weekly, daily or monthly. This shall be agreed upon by either party for avoidance of doubt.
- The contractor shall provide safe drinking water at the sites for workers and visitors at all times
- The contractor provides breakfast and lunch for all workers at the sites in kind to ensure efficiency and effectiveness of the workforce.
- Special eating places shall be identified and inspected in the field so that workers eat from a safe place. At the campsite, designated eating space shall be provided for all workers.

xi. Accommodation for workers (Campsite or special lodging; or people reside in their homes).

- Generally, the contractor shall decide if there will be lodging facilities within the camp.
- Where not all workers will not be accommodated in the camp, they will get their accommodation on their own and all these costs will be part of their pay
- The contractor will encourage recruitment of local personnel who already have residences in the project area
- The contractor shall ensure that workers deliver their work within the official working hours (8:00am to 5:00) and only an hour shall be allowed under circumstances with prior approval from the Site Engineer.
- Mondays to Saturdays will be working days and normal payment mechanisms shall apply
- No works shall be done on Sundays
- Where work is to be performed on a Public holiday, any works to be done shall be approved by the consultant
- An amount stated in the HR Policy shall then apply for each day worked on a Public Holiday

8.2.18 Potential Conflict in Water Use

During the ESIA study exercise it was observed that part of the project area especially sections within Buliisa district are water stressed. Findings of the socioeconomic survey indicated that the major challenges encountered by community regarding access to water are long queues at water collection points and the long distance travelled to access the water. However, there is piped water within Buliisa Town Council to be used in the camps. For the construction water, the contractor shall access it on Lake Albert upon obtaining water abstraction permit for Ministry of Water and Environment.

Therefore, there could be instances where the contractor or his workers will attempt to use the existing water sources thereby creating conflict with the community.

	Construction	**Operation (Post Construction)**
Project phase impacted	√	

Impact severity; the likelihood of this impact occurring is medium, sensitivity is high and overall impact significance moderate consideration is water stressed areas (Buliisa).

Impact significance:

			Sensitivity of receptor			
			Very low 1	Low 2	Medium 3	High 4
— n +	Very low	1	Negligible 1	Minor 2	Minor 3	Minor 4

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

Mitigation measures:

i. The contractor should access his/her own water line from the Water supply Umbrella for Office and camp use
ii. Contractor shall obtain water abstraction permit to use the available vast water source (L. Albert).
iii. Regarding drinking water for workers and visitors, the contractor shall procure adequate bottled water that shall be kept at the camp and distributed as appropriate

8.2.19 Potential encounter and destruction of PCRs

Since no physical cultural resources were identified along the project roads during the study that would be directly affected by project activities, this impact is only anticipated as a result of accidental unearthing of archaeological remains that may lead to their loss or permanent displacement due to land disturbances during construction activities. It should be noted that archaeological and paleontological resources mostly are buried underneath, they may therefore be degraded and displaced unknowingly (chance finds) as most works will involve excavations.

	Construction	**Operation (Post Construction)**
Project phase impacted	√	

Impact severity; the likelihood of this impact occurring is medium since the possibility of encounter of buried resources during excavation works exists. Sensitivity of the impact is high due to the attachment of community such finds especially human remains and overall impact significance major.

Impact significance:

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

Impact receptors: Communities along the project roads

Mitigation measures

i. Implementation of chance finds procedure included in this report in Section 9.4.15
ii. Sensitization of workers to be aware of the possibility of encountering archaeological remains and the procedure to be followed
iii. Bi-annual or incidental trainings shall be conducted to ensure the workers manage the PCRs as per set regulations and guidelines.
iv. In compliance with the law, any chance finds should be reported to the Department of Museums and Monuments of the Ministry of Tourism, Wildlife and Heritage and the Chief Administrative officer (CAO).

v. Local leaders and religious leaders should be notified if the finds are not of interest to the Department of Museums and Monuments. These shall guide the contractor in reburying such finds.

8.2.20 Pollution and hazardous waste spillage

During construction activities, there is potential of spillage of hazardous wastes may include used oils, bitumen and lead acid batteries among others. A spill of liquid, solid or gaseous waste would impair the usefulness of the land, water or air where it is released.

Impact significance:

	Construction	**Operation (Post Construction)**
Project phase impacted	√	

Impact severity; hazardous waste maybe toxic to animals especially aquatic life and humans if ingested or inhaled causing minor to adverse effects like death, flammable and could cause fire outbreaks that destroy property and lives or corrosive when in contact with human skin and other material. The likelihood of the impact occurring is high considering the usually low level of safety at construction sites in Uganda and receptor sensitivity is medium, however sensitivity of the impact is high due to the effect caused by the waste on humans and the environment and overall impact significance major.

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

Mitigation measures

i. The contractor should prepare and implement a spill contingency plan that outlines the main sources of hazardous waste within his construction activities, procedure for spill containment, roles and responsibilities of contractor's key staff in spill response among others.
ii. The contractor should have in place spill kits and ensure that workers are trained on how to use them
iii. Prohibit use of hazardous waste sources by unauthorised personnel; this could lead to poor handling hence spillage
iv. Sensitize workers on hazardous waste management
v. Contractor should provide well labelled special containers for storage of hazardous waste
vi. Transportation and disposal of hazardous waste should be done by a licensed hazardous waste handler
vii. All construction equipment should be kept in good operating condition to avoid oil or fuel leakages that might contaminate water resources. Poorly maintained machinery should not be allowed to operate on site. All routine maintenance of construction machinery and vehicles should be carried out in a designated workshop/maintenance area with concrete surface and drainage to an oil interceptor.
viii. Water quality of streams traversed by the roads should be monitored on a monthly basis, with samples taken and analysed for all forms of contaminants.

ix. Any hazardous wastes including material soiled with hazardous wastes and empty containers of hazardous materials should be stored in a designated area on site for regular removal and disposal by a registered contractor.
x. Fuel handling and oil spill measures should be implemented to prevent, control and address spill or leaks. Fuel and oil handling should be assigned to trained personnel and done at designated places at the contractor's camp.

8.2.21 Impact on utilities within the project area

Since the proposed roads are located within Town Councils, water pipes and telecommunication lines cross or run close to the project roads. It will be necessary to relocate these utilities before commencement of construction. The relocation of these utilities will cause temporary disruption in the delivery of services to the people along the respective roads. In addition, there is a Pubic Stand Post along Magali road that serves the community, which if affected by project activities might cause water scarcity in the area.

Impact significance:

	Construction	**Operation (Post Construction)**
Project phase impacted	√	

Impact severity; This impact will be short term, lasting the period during the relocation of the service infrastructure. it will be local in extent with a low probability of occurrence given that designs have maintained the existing alignment. Impact intensity is medium because disruption of water supply would inconvenience the receiving population. The severity would depend on the duration of the disruption while the receptor sensitivity would depend on service consumer affected (school, health service, residences, restaurant, etc.). overall significance is therefore moderate since shortage of water in the community may lead to water related disease, poor health and even community agitation.

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

Impact Receptors: The community around the proposed site and the existing utility lines in the site

Mitigation measures

i. Project implementation will be done in close consultation with the respective utility service companies such as NWSC and telecommunication companies.
ii. There is need to consider slight shift of the road alignment from the Public Stand Post point along Magali road to the RHS
iii. The contractor will liaise with all the utility lines operators to identify the locations of the utility lines within the proposed site.
iv. The Contractor will to liaise with the utility providers to carry out temporary or permanent relocation, and to protect the utility infrastructure to ensure minimal damage and disruption of services

v. Liaise with utility owners to provide early warning to the communities about any possible disruption in service provision for the different utilities. Existing communication channels such as phone text messages to consumers, media announcements could be utilised.

8.2.22 Impact on local area hydrology

Hydrology in this context is the movement, distribution and management of water in the project area, its physical and chemical properties and its relationship with the living and material components of the environment. It also includes water source pollution as contamination of wetland areas at the Butiaba landing site pier, and some marshes along the access to the Butiaba Health Centre III water sources water quality by the project activities.

	Construction	Operation (Post Construction)
Project phase impacted	√	

Impact Evaluation: During construction activities, there is potential of contamination associated with the construction activities such as; excavation, project fleet maintenance; culvert civil works around these sited locations, which include: sediments, fuels and lubricating oils from the fleet; welding wastes; paints and solvents; and hydro-testing chemicals if used (for example, biocides, oxygen scavengers and corrosion of the pipes), etc. Oils and greases contain hydrocarbons and/or heavy metals such as lead, chromium and cadmium, which are known domestic water pollutants. Increased water runoff and seepage from the work sites could potentially result in contamination of these surface water and in turn affect underground source aquifers. Study findings, showed that all parameters analysed (Butiaba landing site and L. Albert – Magali Road) were within acceptable range in comparison to the national standards for natural potable water except for apparent colour and total suspended solids. Unconformity of the total suspended solids and apparent colour is envisaged to be due to presence of water weeds and storm water drainage pollution from the urban clustered settlements. Therefore, the likelihood of this impact occurring is medium with a high sensitivity, hence bearing a major overall impact significance.

Impact significance:

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

Mitigation measures

i. All construction equipment should be kept in good operating condition to avoid oil or fuel leakages that might contaminate water resources.
ii. Water quality of the source (at construction site) should be monitored on a monthly basis, with samples taken and analysed for all forms of contaminants.
iii. Fuel handling and oil spill measures should be implemented to prevent, control and address spill or leaks.
iv. Where necessary, alternative drainage shall be created to avoid localised floods;

v. Unnecessary vegetation clearance will be avoided;
vi. For civil works undertaken during rainy periods, silt traps and interceptor drains shall be provided on site;
vii. Overburden or other construction materials shall not be stored or dumped near marshes;
viii. When construction is undertaken during rainy periods, the free flow of water shall be maintained using sludge pumps or flexible hoses to bypass the construction site without stagnating and contaminating the water; and,
ix. Appropriate engineering designs and standards shall be adopted to maintain
x. The project should acquire water abstraction permits with conditions to guide the amount of water to be abstracted as stipulated in the Water Supply Regulations (1999). Water abstraction will comply with rates allowed by the DWRM permit that will be obtained.

8.3 Cumulative impacts

The main cumulative environmental and socioeconomic impacts resulting from the proposed upgrade of 11.63 Km roads to tarmac in Buliisa Town Council and Butiaba Town Council will be related to construction of other nearby projects coinciding with that of the proposed development; such as ARSDP Batch 2 gravel roads within Buliisa TC, Butiaba TC as well as the other sub counties in the district.

Among the cumulative factors include the following;

i. Increment air quality impact as a result of increase in road traffic associated with material and equipment haulage, which may cumulatively generate total suspended particles (dust particles) of more than 300 µgN m^{-3} and trigger ppm or µgN m^{-3} of toxic gases above the draft NEMA's air quality standards. These may have such effects; allergies, irritation of the eyes, coughing, sneezing, asthma attacks, form dust layers coating on property and vegetation, furniture.
ii. Cumulative noise impacts of the proposed development in conjunction with other concurrent projects in the vicinity arising from simultaneous demolition and construction works. Activities such as movement of construction vehicles and machinery including: trucks, concrete mixer, earth works, offloading and loading of equipment and material at site among others will generally contribute to the increase in noise levels. These may have such effects; Irritability, anxiety, mental fatigue, interfere with sleep, recreation, and personal communication, and physical damage to the eardrum, blood pressure and pulse rates due to excessive noise exposure
iii. Changes to population and employment in the entire district, as a sizeable labour force is expected to be employed on these projects (different contractors and sub-contractors).
iv. Change in land use; within Buliisa and Butiaba Town council, existing land use patterns are retained with updated features (i.e., aging development gives way to new industrial and commercial business model). Whereas outside the town council, the economic vitality of the town council promotes infill or expansion of development into open land. This potential outward movement of development brings with it infrastructure demands necessary to support a growing population base. This will spur development of remaining vacant parcels as well as redevelopment of underused parcels.
v. Increased infrastructure development will lead to increased impervious surface area, hence more storm water runoff during construction and operation causing; stream channel erosion, Wetland degradation, fragmentation, and loss, altered area hydrology, sediment transport and pollutant loading, Litter and refuse.
vi. Construction of the project will affect the roadway construction sector in the district by increasing demand for locally produced materials needed for construction, such as concrete, wholesale and retail

trade items, aggregate and other construction materials. This will affect suppliers of those products. Other sectors of the economy would be benefited by employees hired in the construction industry who may increase their expenditures in restaurants, grocery stores, and shops. Project construction itself will lead to indirect, or spinoff, jobs, and spending in the region.

vii. Incremental wetland degradation and water quality detrition of Lake Albert. Due to the numerous construction projects coupled with this project; aggregative construction activities may expose the water bodies to; Toxicity to aquatic life with toxicants such as heavy metals from which adverse impacts may result from chronic exposure and bioaccumulation of pollutants. Sediment contamination where bottom substrates in the aquatic environment accumulate contaminated sediment that could interfere with the reproduction and feeding mechanisms of aquatic organisms, such as fish. Impaired aesthetics due to turbid water, trash, debris, and an oily sheen that may reduce the visual appeal of waterways, and affect recreational potential. Elevated water temperatures caused due to runoff from impervious surfaces that have been heated by the sun. Higher temperatures can stress aquatic life and raise water quality issues. Increased volumes of water due to increased impervious areas.

The significance of the aggregative impact of the project is therefore assessed as **medium negative** and therefore, requiring mitigation measures.

Mitigation Measures to Cumulative Impacts

i. Constant community sensitization on air pollution and continuous monitoring of air quality against regulate emissions, such as draft NEMA's air quality standards in the construction phase.
ii. Continuous project activities awareness to the community and continuous monitoring of regulatory noise limits for a construction site in a commercial area (75 dBA) and that in a residential area (60 dBA) as provided for by the National Environment (Noise Standards & Control) Regulations, 2003.
iii. Deployment of contractor's code of conduct and adherence to community and Buliisa District bylaws, national legal frame work on social and health conduct
iv. Adhering to both National legal frame work and World Bank operational Safeguard requirements specifically OP 4.04, Natural Habitats and deployment of decommissioning plan and restoration plans for all sites to alleviate biodiversity loss.
v. Phasing of ARSDP Batch 2 projects as to lessen magnitude of cumulative impacts
vi. Inter-sectorial collaboration to ensure sustainable planning infrastructural development in the district.

9. ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

9.1 Introduction

This Environmental and Social Management Plan (ESMP) for the upgrading of the proposed roads specifies environmental and social aspects that should be managed and monitored for the duration of the project. It describes the site-specific measures that will be implemented by the Contractor and the implementing team to mitigate environmental and social impacts associated with road construction activities. It also identifies parties responsible for monitoring actions, associated costs, indicators and training or capacity building needs and reporting systems, and will form the basis for the more detailed stand-alone Environmental and Social Management Plan (ESMP) to be prepared by the Contractor. The Contractor will have competent staff in the field of environmental and social management to ensure that commitments in the ESIA report are implemented. Monitoring will involve measurements, observations, evaluations, assessment and reporting on several parameters during the implementation phases of the proposed project.

9.2 Purpose of the ESMP

The ESMP is intended to ensure that all project activities comply and adhere to environment and social safeguard requirements. In addition, implementation of mitigation measures in the ESIA report and Certificate of ESIA approval conditions will have to be implemented. The core monitoring tool the Contractor will use is a standalone Environmental Monitoring Plan. This will serve as a reference document for planning, implementation, monitoring and reporting.

9.3 Specific Objectives of the ESMP

Among specific objectives of the ESMP includes.

i. Support in ensuring that the project continuously complies with national and international legislation.
ii. Provide a framework for MLHUD's compliance, auditing and inspection programmes
iii. Provide a mechanism for ensuring that measures identified in the ESIA to mitigate potentially adverse impacts and unforeseen or unidentified impacts are implemented until construction is complete.

9.4 Contractor Environmental and Social Management Plans

The contractor shall develop and implement the following specific E&S management plans (at bidding and improved before commencement of any constriction activities.

No.	MANAGEMENT PLAN	ISSUES COVERED
1.	Biodiversity Management and Action Plan (BMAP)	✓ Overarching biodiversity management control ✓ Project biodiversity management system ✓ Biodiversity identification, management, monitoring and restoration ✓ Provides tree inventory and replanting requirements ✓ Actions to ensure no net loss and preferably a net gain of biodiversity ✓ Design inputs on location of animal crossings (assessment and identification of locations) ✓ Alien species management

No.	MANAGEMENT PLAN	ISSUES COVERED
2.	Environmental Management and Action Plan	✓ Noise and vibration levels mitigation and monitoring ✓ Construction dust mitigation and monitoring ✓ Pollution prevention and protection measures ✓ Design input on spill prevention/location/containment structures around sensitive equipment, installation of appropriate spill clean-up equipment and development of response procedures ✓ Assessment and measures to prevent pollutants to enter pathway at source ✓ Actions to be followed in case pollutants enter the pathway in order to avoid discharge ✓ Waste Management, including: ✓ Waste hierarchy (i.e. reduction at source, reuse, recycling, energy recovery, responsible disposal) and green procurement; ✓ Identification and classification of waste; ✓ Waste register; ✓ Waste handling (i.e. collection, segregation and containers, storage, treatment, transport and documentation, disposal); and ✓ Monitoring and reporting. ✓ Resource Management including: ✓ Objectives, targets, processes in place for resource efficiency ✓ Water abstraction, conservation, discharge measures ✓ Aggregate management planning ✓ Energy and fuel management
3.	Soil Erosion, Reinstatement & Landscape Management Plan	✓ Defines soil erosion controls and associated standards ✓ Temporary and permanent erosion control measures ✓ Inspection and maintenance programme ✓ Reinstatement and revegetation measures and planning
4.	Watercourse Crossing Plan	Defines overarching philosophy for works at watercourse crossings including: ✓ Watercourse characterization and crossing design ✓ Ecological considerations and constraints ✓ Environmental protection measures ✓ Construction methodologies ✓ Reinstatement and Monitoring
5.	Auxiliary Sites and Associated Facilities Management Plan	✓ EHS screening of associated facilities like campsite, parking site, borrow site, quarry site, water abstraction points, dumping sites ✓ Verification of compliance for third-party facilities ✓ Associated facilities EHS assurance ✓ Traffic-related aspects management (for construction traffic to/from associated facilities
6.	Waste Management Plan	✓ Waste management policy ✓ Categorization of waste, waste management hierarchy ✓ Service providers to manage deferent wastes (Human waste and mobile toilets, Site clinic waste, throughput the entire cycle for solid and liquid waste

No.	MANAGEMENT PLAN	ISSUES COVERED
7.	Hazardous Substance Management Plan	Access, storage and management of hazardous substances used at the worksites like hydrocarbons
8.	Cultural Heritage Management Plan	✓ Cultural heritage supervision and management during construction ✓ Chance find training, management and response ✓ Interface and coordination with relevant authorities ✓ Monitoring and reporting of intervention activities to recover and record cultural heritage values
9.	Human Resource and Labour Force Management Plan	✓ Mobilization of the key staff ✓ Training and skill development activities; ✓ Employee grievance mechanism; and ✓ Monitoring and reporting ✓ Preparation of the Local Recruitment Procedure to address inter alia the following measures: ✓ Promotion of local recruitment at all levels of the Project and facilitating the qualification and recruitment of local candidates, for example with appropriate skills training. ✓ Information to the local population (e.g. through the Liaison Officers of the Project) about opportunities for employment. The recruitment will be monitored and reported by Contractors' HR Department and Sociologist. ✓ Maximize use of local subcontractors and suppliers. Information about work opportunities will be made available to the local population. ✓ Workers' community interaction behavioural code of conduct ✓ Subcontractor employment practices conformance, reporting and monitoring ✓ Key Organization Plan, Recruitment and Career Development Procedure, Working Conditions, Disciplinary Procedure, Training Procedure, staff contracts, benefits
10.	Occupational Health & Safety Management Plan	✓ Summary of OHS hazards and risks identification and assessment ✓ High-risk activities identification and management ✓ Occupational Health and Safety Communication and Training Programme which will apply during the Construction Phase across all contractors. The Plan will also apply to the quarries. The Plan will subsequently be updated as appropriate for the subsequent Operation Phase. ✓ PPE Use Manual ✓ Risk Assessment ✓ Hazard, Risk and Impact Assessment Procedure ✓ Accident Investigation and Reporting, Near Miss Procedure ✓ Emergency Evacuation Procedure

No.	MANAGEMENT PLAN	ISSUES COVERED
11.	Emergency Response Plan	✓ Emergency response in event of spills, fire, accidents, earthquake, flood, extreme weather, terrorist threats or attacks etc. ✓ Emergency response equipment/materials requirements ✓ Spill containment and clean-up plan ✓ Procedure for staff and subcontractors to report any incidents and the investigation, remediation and preventive actions taken. ✓ Regular emergency response training including in the use of spill response equipment ✓ Emergency Communication Procedure including with local communities and authorities
12.	Transport Control and Site Access Plan	✓ Road traffic management including: ✓ Establishing rights-of-way, site speed limits, vehicle inspection requirements, operating rules and procedures ✓ Local traffic signage. ✓ Training of Pedestrian workers to work safely around trucks and operating equipment and provide constant warnings to each other in the event of being in risky locations or conditions. ✓ Training of drivers and equipment operators. ✓ Site Access Procedure ✓ Communication protocols and procedures ✓ Internal monitoring and reporting
13.	Child Protection Management Plan	✓ A child protection policy and commitment ✓ Code of conducts for workers and special code for drivers, operators and security guards ✓ Sensitization of workers and community ✓ Identification of any violations ✓ Clear protocols for management of any child rights abuse attributed to the project ✓ Tracking and reporting of child rights abuses
14.	Gender Management Plan (Including GBV)	✓ A Gender policy Statement ✓ Code of conducts for workers and special code for drivers, operators and security guards on GBV ✓ Sensitization of workers and community on GBV ✓ Identification of any violations ✓ Clear protocols for management of any GBV cases attributed to the project ✓ Tracking and reporting of child rights abuses

No.	MANAGEMENT PLAN	ISSUES COVERED
15.	HIV/AIDS and STIs Management Plan	✓ HIV/ AIDS policy and commitment ✓ HIV Code of conducts for workers and special code for drivers, operators and security guards ✓ Sensitization of workers and community on HIV prevention ✓ Identification of any violations ✓ HIV counselling, testing and referral of positive cases for treatment ✓ Tracking and reporting of HIV and AIDS activities for workers and community
16.	Stakeholder Engagement Management Plan	✓ Overarching framework for all stakeholder engagement-related activities ✓ Stakeholder identification; ✓ Stakeholder engagement program ✓ Monitoring and reporting
17.	Subcontractors and Supply Chain Management Plan	✓ Roles & responsibilities of sub-contractors ✓ Includes key requirements extracted from above plans & procedures ✓ Need to develop subcontractor's ESHS Management Plan ✓ Establish Health, Safety and Environmental performances to monitor ✓ Monitoring and reporting to the main contractor ✓ Principles, methodology and acquisition of construction materials
18.	Security Management Plan	✓ the security measures, particularly for the Construction Stage of the Project ✓ Access control, registration, security briefings, involvement of LC and Uganda Police, fencing of construction section in the vicinity of settlements or communities).
19.	Management of Incidental RAP	✓ How will emerging compensation be managed ✓ Provision of Insurance for equipment and workers ✓ Involvement of local leadership while resolving emerging compensation ✓ Proper documentation required during settlement
20.	Land Acquisition Management Plan	✓ Acquisition of the land for campsites, storage yards, dumping sites, borrow sites ✓ Evidence of ownership of the land ✓ Nature of agreements ✓ Evidence of payments ✓ Involvement of third parties like family members ✓ Registering acquired sites as work places if required

No.	MANAGEMENT PLAN	ISSUES COVERED
21.	Grievance Management Plan	✓ Grievance Management Guidelines/ procedures ✓ GRC in place for community and workers ✓ Grievance registers ✓ GRC Meetings ✓ Grievance trainings and sanitizations ✓ Escalation mechanisms of grievances ✓ Grievances tracking and reporting
22.	Decommissioning Plan	✓ Decommissioning of workers ✓ Decommissioning of equipment ✓ Restoration of all sites ✓ Decommissioning reports
23.	Risk Management Plan	✓ Job and hazard specific risks identified ✓ Risk management strategies established and implemented ✓ Risk tracking and reporting
24.	Safeguards Reporting and Quality Assurance Plan	✓ Nature of reports and minutes (daily, weekly, monthly, quarterly ✓ E&S Audit Reports ✓ Reviews and validation by Supervising Consultant ✓ Approvals and validation by Client ✓ Monitoring checklists ✓ Reporting templates

9.4.1 Waste Management Plan

Road construction is accompanied with generation of wastes that include both biodegradable and non-biodegradable wastes. During the construction phase, quantities of excavated materials and other wastes will be generated which will require disposal in an appropriate and environmentally acceptable manner. The disposal strategy shall be based upon the waste management principle of reducing the amount of waste requiring final disposal through waste avoidance, material re-use, and recycling. Excavated materials and residual wastes may give rise to impacts during their handling, temporary stockpiling or storage on site, transportation and final disposal.

The basis for waste management actions will be segregation at source, storage and disposal of different types of waste. The entire waste management process will be anchored on active separation of wastes at point of generation. The essence of waste segregation at source is to enable re-use, recycling and the choice for the most appropriate disposal technology should the first two fail. Separation of wastes at source further reduces chances of cross contamination of waste streams by hazardous wastes hence making it safer for both the waste management team and the receiving environment. The following generic steps will be followed;

i. **Storage**

Well labelled bins shall form the basis of storage to facilitate easy removals and evacuation to disposal trucks. The project will utilize, the use of Colors or Labelling of waste collection bins, depending on what is considered feasible.

ii. **Collection and Transportation**

A Waste collection schedule shall be designed by the site foreman assisted by the Contractor's Environment Officer. There being no waste disposal sites in Buliisa and Butiaba Town Councils, the contractor shall engage, through consultation of the District environment officer, a registered waste handling company to undertake the collection and transportation to the disposal sites preferably in Hoima district.

iii. **Hazardous Waste storage permits**

Used oils in particular will be collected and stored in sealed drums on a sheltered concrete ground to avoid any contact with bare soil surface. As required by NEMA, the contractor shall obtain a license for storage of Hazardous waste e.g. used oils on site awaiting transportation and disposal by a NEMA registered hazardous waste handler. However, final disposal of all hazardous wastes shall be done by a suitable NEMA licensed hazardous waste management company that shall be identified by the contractor.

iv. Waste inventory and record keeping

The contractor and, if sub-contracted, the waste transporter will maintain written records of waste movement of both licensed and non-licensed waste activities. As a minimum, for waste tracking purposes, records will be kept in relation to the:

- Amount and the type of waste generated, stored, treated or disposed of;
- Amount and the type of waste transported;
- Date of transportation; and
- Name and location of the waste facility that receives the waste.

These records will be kept for as long as the project is on-going.

9.4.2 Occupational Health and Safety management Plan

The main goal of Occupational Health and Safety management is to promote a safe and secure work environment through careful identification and management of hazards. It seeks to facilitate and empower workers and managers at all levels to participate in the avoidance, minimization and complete eradication of accidents and diseases associated with unsafe and insecure work places. It further seeks to enhance worker productivity through appropriate training and provision of tools that enhance performance, reduce lost time through accidents and limit material and financial losses arising from inappropriate equipment's, workers, methods and complacent personnel.
The safety and health plan is designed to achieve the following specific objectives.

a) Achieve Zero reporting of accidents of all sorts and near misses throughout the construction life span of the project; thereby eliminating losses resulting from injuries and infections and diseases at the work place;
b) Eliminate exposure and incidences of occupational injuries and diseases among all categories of the workforce; and
c) Operate a flexible and quick response system to injuries at the work sites, following thorough training of all project staff in OHS procedures at induction; thus, instilling a culture of responsibility and accountability on Safety and Health.

The overall implementation of the plan will lie with the Project Manager who will delegate functional duties to the Health and Safety Officer. A safety committee comprising of section managers, foremen and workers representatives shall be constituted. The OHS plan is a living document that will be updated in consultation with all employees, the client and supervising consultant. Periodic audits both internal and those commissioned by regulatory agencies shall also inform periodic updates of the health and safety plan.
In addition, the contractor will;

- Make OSH plan readily available to all workers and all people concerned about this project and ensure they have an opportunity to read, understand, clarify and ask questions
- Keep a copy of the management plan for the whole duration of the project
- Review the plan regularly throughout the project and make any revisions known to those working on the project

Among others, the contractor shall endure the following;

a) Risk assessment and Management

The contractor shall undertake risk assessment as a way of estimating health risks from exposure to various levels of a workplace hazard. Understanding how much exposure to a hazard poses health risks to workers will the contractor to appropriately eliminate, control, and reduce those risks. This risk assessment will answer three basic questions:

- What can happen?
- How likely is it to happen?
- What are the consequences if it does happen?

The contractor shall identify the risks associated with the various construction activities, propose and implement measure to avert these risks and mitigate the impacts.

b) Health and safety reporting and audits

The OHS officer shall produce monthly reports to be discussed at the site meetings. The content of the report shall reflect all aspects of hazards identified. Detailed statistics on Implementation of safety plan including but not limited to the following shall be presented;

a. Induction training carried out by section
b. Fire drills conducted (number and sections)
c. Health and safety tool box talks conducted
d. Incident statistics categorized where possible
e. Fatalities on the project by section If any
f. Near misses records
g. Notifiable incidences
h. Disbursement and use of PPEs
i. Compliance levels among employees by section
j. Equipment certification by relevant agencies
k. External inspections and their outcomes (If any).

c) **Training and OHS awareness**

The contractor shall ensure that all employees undertake induction training before commencement of work to cover basics of work place procedures including; Work regulations, OHS instructions (general &

section specific), Personal behaviour and mannerism, Fire drills and firefighting skills, Emergence evacuation procedures, Rights and obligations and Incident reporting procedures among others. Tool Box Trainings will be conducted either every morning or weekly depending on the risk assessment of particular activities on how to safeguard against possible accidents.

d) Incident reporting and investigation procedures

The purpose of the procedure is to ensure all incidents and accidents involving contractor's personnel, visitors, property and activities are reported, investigated, and recorded.

The role of the Health and Safety officer Is to facilitate and co-ordinate the reporting, recording and investigation of all OHS incidents by:

a) Receive all notifications of incidents/accidents and ensure proper response is being followed including reporting, investigations and review.
b) Once aware of an emergency, the response coordinator shall take the following actions:
    - Contact or communicate with emergency services
    - Coordinate activities of all personnel in the emergency response team and monitor its effectiveness
    - Inform the Contract Manager or Site Manager of the emergency
    - Coordinate the activities of all personnel in the emergency response team and make further directions as required by the situation;
    - Inform the team, Contract Manager and Site Manager of the end of the emergency situation
c) Maintain the Project Emergency Response Plans and associated processes;
d) Display names and contacts of personnel to be reached out in case of emergences
e) Provide the incident report, and actions being taken to prevent reoccurrence
f) Coordinate training requirements for the emergency response team and all other site personnel.
g) Ensure that adequate emergency response information and instructions are provided in trainings and inductions;
h) Undertake planned inspections to ensure emergency response equipment and facilities are complete;

9.4.3 Emergency Response and Preparedness Plan

The plan applies to all forms of emergencies and incidents that have or are likely to cause, or have caused serious injury, and/or grave damage to the environment or property. It covers all aspects, activities and sites of the project. These include:

a) Construction, use, occupation and management of campsites and associated facilities
b) Construction of culverts, and storm water drains
c) Establishment equipment yards,
d) Earthworks and establishment of pavement layers
e) Construction of platforms, vehicle park platform and plant storage areas
f) Establishment of aggregate stockpiling areas and cement silos
g) Establishment and use of fuel storage areas
h) Establishment of spoil stockpile areas
i) Landscaping and grassing
j) Decommissioning operations.

Emergencies will be managed through effective coordination, communication and response procedure. All incidents will be immediately reported to a supervisor who will contact Environmental officer, who in turn reports to the Health and safety officer. While all incidents shall be reported in the monthly E&S report, all serious incidents shall immediately be reported to the Health and safety officer, who also reports to the Project Manager. The Project Manager will also report to the Resident Manager (RE), who also will report to the ARSDP staff. All incidents will be investigated and the appropriate course of action will be taken to address the root cause.

The contractor shall ensure that trained first aiders are present at the camp and on the project roads during construction. Their roles shall include;

- Provide and record first aid treatment when required;
- Ensure that first aid kits are provided on every active site and supplies are replenished.
- Be evacuation officers in case of fire of natural incident that may affect an entire building, sites like quarry, campsites or laboratories; be responsible for occupants' safety and evacuation.
- Keep an updated list of employees and visitors on site and carry the name list during evacuation

An assessment will be undertaken to determine and mark out evacuation routes for each area or facility of the project auxiliary facilities. Workers will be drilled to follow the identified routes to assembly point. The assembly points shall be delineated in the site layout plan, labelled with a sign and communicated to all workers.

When an emergency incident occurs, the following response actions shall be taken:

a) Persons present must maintain calm
b) As fast as practicable determine what may have happened and the nature of the emergency. This will help decide whether to attend to injured persons/situation or to communicate.
c) The actions required maybe to attend to the injured person, stop machines or notify the safety Officer or his/her representative. Only trained first-aiders will provide assistance to injured persons.
d) The Safety Officer, or his/her representative if necessary, will call for emergency services (ambulance, police as necessary), and at appropriate moments notify the Project Manager.
e) The site shall then be made safe to prevent further injury, loss, accident or incident. Actions here may include diverting traffic, suppressing fire, preventing objects from falling, shutting down equipment or utilities, and taking other necessary measures.
f) Secure the site of the incident to ensure that it is not disturb; while allowing only disturbance to the extent that is essential to maintain life or relieve human suffering and prevent immediate or further losses. This is to allow incident investigation.
g) The Safety Officer, or his/ her representative shall ensure the Contract Manager is notified immediately.

Evacuation procedure

All staff shall be made aware of the possible escape routes and Assembly point during induction and regularly refreshed through drills and during trainings, or toolbox talks.

An Evacuation Personnel shall be designated for every site, and is particularly applicable for Campsites, quarry and culvert sections among others.

In the event of an emergency, the Safety Officer or his/her representative will give instruction to sound so that personnel evacuate to a specific area.

a) Personnel onsite must follow the instructions of the Evacuation Personnel.
b) Personnel must follow the directional pointers to the nearest emergency exit.
c) Evacuation must be undertaken in accordance to the emergency lay out plan.
d) Unscathed and mobile employees must be the first to be evacuated followed by the weak and the injured.
e) Evacuation personnel must work in pairs where possible to assist one another lifting heavy injured employees.
f) Aid mobile employees who are struggling or appear unsure, and assist visitors.
g) All personnel must keep calm and be evacuate by walking quickly and not run.
h) Tasks of emergency services must not be obstructed.
i) All personnel onsite must report directly to the allocated assembly point.
j) Persons in assembly points and those that may have been injured must be counted and missing persons searched
k) Personnel must not leave the assembly point until it has been deemed safe to do so.
l) The evacuation personnel must be the last one to leave the area.

Training

- All project workers shall be inducted before commencement of work, and will be briefed on the emergency response procedure.
- All employees and sub-contractors will be trained in emergency response procedures within one month of their start-date.
- Workers will be helped to understand potential emergency risks, appropriate first-person response to incidents and notification procedures.

The training shall be mandatory and will be conducted on a quarterly basis. Training shall to include, but not limited to the following: Firefighting, First Aid, Emergency Evacuation; and Medical and Environmental Emergencies.

Recording and investigations

All incidents will be registered by Safety Officer in the Project's E&S database. Once registered, all incidents will be investigated for identification of causes and preventative actions.

9.4.4 Sanitation Management Plan

The Contractor shall provide adequate gender sensitive sanitary facilities that offer maximum privacy and comfort at all auxiliary facilities like the camp and mobile toilets along the project roads. He/she shall also provide the appropriate waste collection bins, preferably well labelled color-coded bins at all sites for purposes of sorting and storage of wastes awaiting collection and disposal.
The contractor shall ensure to maintain all sites in a state of cleanliness to the satisfaction of the supervising consultant.

9.4.5 Human Resource Management Plan

The Human Resource management plan shall form a basic guideline for all workers so as to maintain a friendly, cooperative and healthy working environment. All workers shall be made aware of the guidelines upon their formal employment by the Human Resource Manager and Health & Safety Officer in an induction. Efforts shall be made to create conditions which enable staff to coordinate their work with their family life. Employees shall be required to maintain a high standard of conduct and work performance

and this shall include; Observing all policies and procedures, treating colleagues with courtesy and respect, treating visitors and clients in a professional manner at all times, working safely at all times; and team work / Team Spirit.

The contractor's Human Resource Manager shall make all employees aware of the recruitment policy and procedure, working time, medical examination and treatment, annual leave, maternity leave, paternity leave and sick leave, dismissal and disciplinary procedure among others.

9.4.6 Grievance management plan

The plan will govern how the contractors will receive grievances pertaining to project activities. It will capture grievances arising from actual project impacts, as well as issues which are simply perceived to be related to the project, irrespective of whether they derive directly from Contractor's activities.

These grievances may include;

- Complaints related to dust, vibrations and noise generated by contractor's equipment
- Traffic accidents caused by contractor's equipment and vehicles
- Workers' behaviour in the community especially towards women, children and young girls
- Illicit behaviours of contractor's workers e.g. use of obscene language, smoking, drug abuse and alcoholism among others
- Blockage of access due to ongoing construction works
- Clearance of right of way which may affect crops and trees
- Temporary displacement of road side activities in urban areas
- Increased pressure on social services and infrastructure as a result of influx of workers into the community

Considering the lengths of the roads, a grievance management committee will be formed along each road and will comprise of the Chairperson LCI, representative of the Supervising Consultant, representative from the community, Women Representative and an Elder. The committees will be trained in grievance redress system and the communities will be informed of the grievance management processes.

9.4.7 HIV and other STIs Prevention and Management Plan

This plan shall include measures that will be implemented in order to ensure control of the spread of HIV/AIDS and Sexually Transmitted Infections (STI) between the workers and the local community.

The contractor shall have in place an HIV/AIDS and STIs Policy in which he shall show commitment to the protection of the rights of employees living with HIV/AIDS (in close consultation with Uganda AIDS Commission), Prevention through information, education and training of both the workers and the community and free screening and counselling policies for STI and HIV/AIDS cases among project staff.

Regarding employees, the Contractor shall periodically, with support from the District Health Office, organise Information, Education and Communication Campaigns including free counselling and testing exercises. The contractor shall also establish a well-equipped and staffed HIV/AIDS site clinic preferably at the worker's camp that will provide the free counselling and testing services to the workers. In addition, condoms, both male and female, shall be freely provide to the workers and shall be preferably placed in the respective toilets for easy and convenient access.

Regarding the communities, the contractor shall organise campaigns in which he/she shall conduct Information, Education and Communication Campaigns including free counselling and testing of community members.

9.4.8 Stakeholders Communication and Management Plan

The aim shall be to ensure that adequate and timely information is provided to project affected people and all stakeholders, that proper mechanisms for information, consultation, and involvement is established, that this process will enable opportunities for dialogue, two-way discussion and active public participation. It can be expected that good implementation of stakeholder engagement will contribute in positive acceptance of the project activities and avoid as much as possible annoyance/dissatisfaction of the affected people that could be caused by the project activities.

Communication with stakeholders should focus on those issues of most concern to local stakeholders, whether they are based on real or perceived risks and impacts.

A monthly stakeholder engagement programme/schedule will be made by the contactor's Sociologist and Other Safeguard staff for engagements clearly stating the location, topics and dates.

9.4.9 Gender and Social Equity Management Plan

The Contractor's Gender Management Plan shall include; provision of gender sensitive working conditions and facilities, awareness creation and description of recruitment procedures among others.

To ensure gender mainstreaming in the construction activities; the contractor shall ensure that;

- Jobs are equitably distributed to both women and men as long as one has the qualification rather than basing on gender to allocate jobs. To effect this, the contractor shall encourage women to apply for available jobs by indicating this in job adverts.
- Information dissemination about dangers of HIV/AIDS to the community should be done all throughout the period of the project. The messages should be passed on using the locally understood language for better understanding.
- The contractor shall use gender-sensitive language such as: "Go Slow, Work in Progress" instead of "Go Slow, Men at Work". This, coupled with women's visibility in road works would, contribute to women's empowerment as well as breaking the stereotype that road construction is a preserve of men.
- To avoid blockage of access to private property like homes, farmlands and grazing fields, the contractor should provide temporary access routes, or "bridges" that can be safely used by especially women, children, disabled and elderly people.
- The contractor will be selective in awarding service contracts, giving preference to women-owned entities. This, for example, is in regard to supply of foodstuffs to workers camps, housekeeping and culinary services for workers.

The contractor shall submit a monthly Report detailing among others:

- Mobilisation and recruitment strategies employed.
- Number of workers employed disaggregated by sex, age.
- Task allocation by sex.
- Proportion of women employed in supervisory positions.
- Proportion of wages accruing to women.
- Facilities provided to enhance women's participation in road works.

- Capacity building for both female and male workers.
- Lessons learnt from implementations that can be the basis of documenting good practices.
- The report shall be verified by the Environment and Social manager

9.4.10 Child Protection management Plan

The contractor shall have and implement a Child Protection policy that will state commitment of the contractor and his/her employees to upholding the rights of children including prohibition of the employment of children below the age of 18 in construction activities. The plan shall also emphasize the need to induct and disseminate the policy to subcontractors, suppliers, visitors and all monitoring agencies who shall commit to the Child Protection Policy.

9.4.11 Decommissioning plan

The contractor shall prepare site specific decommission plans to serve as a guide during the implementation process to allow disturbed sites to regain their ecological functionality, connectivity and stability in the ecosystem through re-vegetation using indigenous plant species, with a long-term goal of stimulating biodiversity recovery to ensure it blends with that of the surrounding landscape.

The restoration will focus on but not limited to; Steep slopes, drainage pathways along the roads, temporary material storage and stockpile areas, road side tracks, borrow pits, workers' camp site and re-alignments where bends are to be avoided among others.

Perpetual monitoring from the on-set of the project throughout its implementation shall be undertaken during the rehabilitation processes and final restoration, with emphasis placed on the continuity between site characteristics and the adjacent landscapes.

Reporting of restoration works will be done by the Contractor's Environmentalist, with approval from the District Environment officer, supervising engineer and the designated ARSDP personnel upon satisfactions from other, if any, regulatory agencies involved.

9.4.12 Capacity Building Plan

The contractor shall develop measures to continuously build and improve the capacity and skills of the employees. The workers shall be inducted in the Environmental and Social safeguards at the start of the proposed projects and periodic training shall be given to workers in their specific areas of operation. This shall contribute to the quality of construction and save material as well as providing increased skills that can help the workers even after project completion.

9.4.13 Quality Management Plan

In order to achieve quality in all project operations, the contractor shall have and implement Quality Management plan. The competency needs of all personnel performing activities which affect the quality of manufacture/construction shall be identified by the contractor. Personnel performing specified assigned tasks shall be appropriately qualified on the basis of training, skills and/or experience, which will be confirmed by the Contractors Project Management team and approved by the Supervising Engineer/consultant as required.

Records of training and competencies (written confirmation by Contractors Project Manager) will be kept and maintained at the project office at the camp.

The status of the constructed works will be identified by the progressive completion of Inspection and testing documentation which are Work Inspection Procedures and Checklists.

The contractor shall be responsible for the quality of the works. Checklists will be signed for each operation (e.g. earth work, concrete work, metal work, landscape work, etc. including mechanical, electrical and hydraulic works) to verify that works have been completed in accordance with requirements. In addition, the contractor shall submit to the supervising consult, material approval request for inspection and approval of material before use.

The Project Manager shall ensure that the Project Quality Management Plan is reviewed monthly to ensure that:

- The objectives and requirements of the Project Quality Management Plan are still valid, and are being met.
- Forthcoming activities are reviewed and any necessary amendments to the Project Quality Management Plan are put in place before the relevant work begins
- QMP processes shall be reviewed to ensure continuing suitability and effectiveness

9.4.14 Oil spill contingency plan

Sources of oil spills on the road construction project will include spillage of oil from engines of equipment (during refuelling, servicing or leakages due to fault in equipment tank) as well as Bitumen. These could range from minor to major spills if a large number of fuel drums are damaged simultaneously.

In case of an oil spillage, the response teams should be equipped with the following response equipment:

i. Spill kits containing absorbent pillows and fabric for vehicles
ii. Plastic bags
iii. Rubber gloves

The health and safety of personnel is paramount during an oil spill. Protective gear should be used when carrying out an oil spill clean-up.

Spill management shall majorly involve containment and recovery of oil spills where practicable and the contractor shall ensure that the Health and safety officer and foremen are equipped with sufficient materials and equipment to contain all spills.

Training

The contractor shall ensure that all workers are trained in prevention and management of oil spills and leaks. This shall be done during induction of workers and throughout the construction phase trough regular sensitization. This training will cover procedures for reporting a spill, health and safety issues, and the use of equipment (e.g. absorbents, safety drums, etc.).

General response strategy for oil spills shall follow the procedure outlined below;

- The contractor and all workers shall ensure that oil spill equipment is in a known and accessible location.
- If a spill occurs, work shall be stopped or minimised to avoid any further spillage. Ensure safety of all personnel. Check for fire and explosion risk. Ensure safety equipment is worn.

- For all spills, absorbents shall be deployed to contain fuel if possible. It may be possible to hold fuel in depressions by using absorbent materials
- If possible, pump shall be used to remove fuel from ground straight into drums, while ensuring that sufficient good quality empty drums are available near the spill site.
- Absorbent material such as sawdust or sand shall be spread on any remaining fuel or oil outside which cannot be pumped or manually removed. Oil soaked absorbents must be picked up and put into plastic bags and/or empty drums.
- Drums or containers of recovered oil shall be stored in fuel containment areas close to workshops or other designated areas at the site.
- Containers or drums of recovered fuel/water, oil-soaked absorbents and contaminated clothing used in the clean-up shall then be transported for disposal by the licensed hazardous waste handler. Recovered oil, if usable, shall be stored at designated oil storage areas for later use.

9.4.15 Chance Finds Management Plan

During the period of the construction of the project infrastructure which involves excavations, it is possible that chance finds will be encountered. These may include the following:

- Archaeological heritage which has remained unnoticed in the past.
- An encounter with a grave containing human remains which the local residents may have not mentioned at the survey stage.

In case of discovery of a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

- Stop all works in the vicinity of the find, and immediately report the findings to the supervisor who will then notify the Construction Manager and the Environment Officer (EO)/Environmental Manager (EM);
- The manager shall notify the Department of Museums and Monuments (contact of commissioner is +256 772485624) giving the location and nature of the finds
- The contractor shall also notify the ARSDP safeguards staff at the Ministry of Lands, Housing and Urban Development and the District Environment Officer, Mr. Rodgers Tumusiime
- Record details in Incident Report and take photos of the find;
- Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects;
- Any further excavations or continuation of the infrastructure development at the Site of the discovered heritage will be undertaken only with the approval of Department of Museums and Monuments and ARSDP Staff.
- In the case of discovered human remains, LC1 and Buliisa district police station will have to be notified and either the remains are taken for forensic investigation or the LC1 authorities sanction the reburial of the remains at another location. The Contractor then meets the relocation and reburial expenses.

9.4.16 Traffic Management Plan

The Ministry of Works and Transport's General Specifications for Road and Bridge Works and Code of Practice obliges the contractor to prepare a temporary Traffic Management Plan to ensure safety at works or adjacent to roads sites. The Traffic and Road Safety (Safety at Road works) Regulations require that all and adjacent works, no matter how small, must be properly signaled and managed.

Traffic control at work sites is provided to maintain a safe workplace for workers, and to safely guide road users through work sites. It is essential for safety that the credibility of traffic control at work sites is maintained. This can be achieved by ensuring that arrangements are as simple and predictable as possible, that devices are correctly installed, and that the measures applied match the road environment and work activities being undertaken.

Due to anticipated construction traffic coupled with the community traffic, a Traffic Management Plan that will regulate traffic throughout the construction phase is required. Issues of dust, traffic jam and noise are more so regulated by this plan in place. The plan will also help protect road users and workers and keep traffic delays to a minimum through proper and clear signage.

Traffic Management Plan covers road markings, traffic signals, text-based signs, layout of signs at intersections and other typical locations, and detailed information on the design and sighting of signs necessary at sections of construction activities.

It should cover;

i. Traffic management measures and safeguards
ii. Roles and responsibilities
iii. Traffic public awareness campaign/ notification procedure
iv. Speed limit zone
v. Road signage position
vi. Traffic incident reporting
vii. Safe driving awareness/ trainings
viii. Traffic risk control
ix. Corrective actions, among others.

9.5 Relevant experiences and lessons from Batch 1 accidents

During the Batch 1 operations, there were two serious accidents involving contractor's workers. In one incident (involving 15 workers travelling in an open truck while returning from work), one worker died with two seriously injured; in the other incident, one operator sustained serious injuries which put him off-duty for more than two months. Arising out of the root cause analysis of events that preceded these accidents, a number of improvement and corrective measures had to be undertaken by Batch 1 contractors in a bid to avert re-occurrence of similar accidents. The measures to be implemented (outlined in Safeguards Corrective Action Plan) contained in the excerpt below were aimed at ensuring safeguards compliance with greater emphasis on health and safety.

Similarly, occurrence of such incidents during Batch 2 operations cannot be ruled out. The contractors to be engaged under Batch 2 works (Tarmac roads under this report inclusive) shall have to be cognizant of these measures and shall be required to incorporate them in their C-ESMPs. The supervising consultant and the client shall offer support to the contractor during the preparation of their C-ESMPs and during operations to ensure adherence.

9.5.1 Excerpt of Safeguards Corrective Action Plan for the Batch 1 incidents (edited).

No	Key Action	Specific Actions	Expected results
1.	Evaluate and assess the competence and health status of all drivers and operators and institute appropriate action where deficiencies are discovered	▪ Driving skill test by Uganda Police ▪ Verification of driving permits ▪ Conduct defensive driving training and test ▪ Orientation on basic maintenance for equipment & vehicles ▪ Medical examination including diabetes, hypertension and eyesight. ▪ Daily alcohol & drug abuse assessment prior to driving and operating equipment.	▪ Competent collection of drivers and operators ▪ Medically fit cluster of drivers and operators
2.	Institute assent to special codes of conduct by all drivers and operators.	▪ All drivers, operators and security guards to sign special code of conduct	▪ A well-behaved team of drivers and operators
3.	Routine comprehensive assessment of contractor's equipment & vehicles to ascertain their worthiness for use; and any dangers posed to operators, other workers and the public. This should be complemented by a maintenance plan.	▪ Undertake a comprehensive OSH audit by MGLSD specialized inspectors ▪ Prepare & implement a plan for the maintenance of fleet ▪ Strengthen use of daily check sheets for equipment and vehicles. ▪ Strengthen use of maintenance Log Sheets for each equipment and vehicle. ▪ Adherence to routine service schedules	▪ Better condition of equipment and good output in civil works and also assures safety to workers and members of the public. ▪ Reduced risk to accidents
4.	Briefing of all contractor's workers	▪ Hold tailor-made meeting with all the contractor's workers prior to commencement of civil works. ▪ Client to closely oversee the initial operations once civil works commence ▪ Regular refresher training of the contractor's staff	▪ Improved coordination & working modalities with better awareness to the safeguards requirements
5.	Affirmative action on safeguards compliance (ESHS requirements) with emphasis on safety	▪ Safe transportation of workers to areas of work ▪ Provide transport to the Contractor's safeguards team ▪ Institute task-specific toolbox meetings at each work fronts. ▪ Enforce PPE provision & compliance to usage ▪ Safe water and food to be served to all workers	▪ Improved safety for the workers & members of the public. ▪ Improved supervision by the safeguards staff. ▪ Reduced risk to accidents

		▪ Empower safeguards staff to be able to stop work when violations are detected	
6.	Improve on safeguards documentation and record keeping	▪ All contractual records with emphasis on ▪ Human Resource records. ▪ Equipment and vehicle maintenance records ▪ Safety orientation reports	▪ Improved coordination & better detection of loopholes in the contractor's operations.
7.	Review civil work methods to synchronise with safeguards compliance.	▪ Open work fronts which are commensurate with resources and systems available. ▪ Avoid night works on site	▪ Improved coordination with reduced risk to accidents

9.6 Relocation procedure

Before commencement, a detailed procedure on how the directly affected persons (see **Table 4-46**) will be relocated is required. This will be drafted by Buliisa Town Council and submitted for approval by MLHUD-ARSDP before implementation. MLHUD-ARSDP will supervise the implementation process.

9.7 The Monitoring and Reporting Arrangements

To ensure effective implementation of the project, monitoring will be done throughout the project life. Monitoring will verify if predicted impacts have actually occurred and check that mitigation actions recommended in the ESIA are implemented and their effectiveness. Monitoring will also identify any unforeseen impacts that might arise from project implementation and appropriate new actions shall be undertaken to mitigate any upcoming negative effects.

The usefulness and effectiveness of this ESIA will only be realized through a systematic monitoring programme. The monitoring plan will inform strategic and outline environmental decision making throughout the project lifecycle. All mitigation actions will be guided by prior actions undertaken on project sites.

9.8 Institutional Arrangements/Roles and Responsibilities

The contractor is responsible for the full-time monitoring and implementation of the ESMP and will be supervised and guided by the supervising consultant and the client.

Monitoring during the project operation will occur at two Levels namely compliance monitoring and effects monitoring.

1) **Compliance monitoring** will be undertaken to assess the level of implementation of prescribed mitigations in Chapter (7). Supervision will be key for this Level of monitoring. Monitoring of the project construction will be done daily and a monthly report will be presented to MLHUD by the contractor.
2) **Effect monitoring**. This level of monitoring will evaluate the effectiveness of suggested mitigation measures in stemming impacts as predicted in the Impact chapter (7).

Who monitors and how: Implementation of the ESMP and the project as a whole will be monitored by a number of entities right from ministry level to lower local government. The primary oversight to ensure that mitigation actions are implemented will rest with MLHUD. In addition, the Buliisa District Environmental Officer has regulatory, supervisory and monitoring roles on behalf of NEMA.

In order to enhance the potential for integrating sustainability concerns in the proposed project development and activities, it is important to assign roles and responsibilities to dominant professionals, contractors and/or sub-contractors so as to ensure that the project ESMP will be implemented effectively.

9.8.1 Role of World Bank

The World Bank's technical team of specialists will support MLHUD ARSDP staff in guiding the overall implementation and monitoring framework. The Missions conducted by the World Bank's technical team will provide assistance to the Ministry in implementing the ESMP. In addition, the team will support the ministry in reviewing project progress and implementation reports and provide recommendations for strengthening the implementation of the safeguards.

9.8.2 Role of Ministry of Lands Housing and Urban Development

The MLHUD will play an overall oversight role for the implementation and monitoring of the ESMP. As provided for in The Project Operational Manual (2016), the established Project Steering committee (PST) will provide overall policy guidelines to the Project Technical Committee (PTC) including guidance on environmental and social safeguards.

Specifically, for the successful implementation of this ESMP, the PTC will be responsible for;

i. Ensuring compliance with all relevant legislation as well as adherence to all environmental and socio-economic mitigation measures specified in the ESMP
ii. Appointing the project focal person to oversee the day to day implementation of the ESMP, and to whom the contractor will report.
iii. Undertake scheduled site supervision to determine state of environmental and social compliance.
iv. Review the proposed project activities, methodologies and plans in relation to the requirements of the mitigation and management measures of this ESMP.

9.8.3 Role of NEMA

i. Review and assess this ESIA for the proposed project and activities in relation to its approval (*before project construction*).
ii. Monitor all environmental issues with a view of making an assessment of any possible changes in the environment and their possible impacts (*During both establishment and operation*).
iii. Monitor the operation of the project activity with a view of determining its immediate and long-term effects on the environment. (*During project construction / operation*).
iv. Appointing an environmental inspector by the authority; that may enter the project premises at free will for the purpose of monitoring the effects on the environment of any activities carried out on the premises (*During project construction / operation*).

9.8.4 Role of Buliisa District Local Government

Buliisa District will play jurisdictional roles through undertaking direct supervision and enforcing implementation of the ESMP. Departments that will be key in supervising implementation of the ESMP include Environmental and natural resources, Community development, health office, Planning office,

Gender and probation office, Labour Office, Water Office, Engineering, Education, and political leadership among others.

9.8.5 Role of Town Councils (Buliisa and Butiaba)

Buliisa and Butiaba Town Councils will also play a direct role in supervising and enforcing the proper implementation of the ESMP. Key departments at the Town Council level include Community development office, Town planner, Town Engineer and political leadership among others.

The town councils will take on effective monitoring and enforce implementation of the ESMP during construction phase and will oversee the implementation of the same during the operation and Maintenance of these roads.

9.8.6 Role of Supervising Consultant

During the construction phase, the supervising Consultant will undertake the following roles;

i. In liaison with MLHUD, BDLG and the respective Town Councils, the supervising consultant shall ensure that the construction methods proposed by the contractor for carrying out the works are satisfactory.
ii. Review, approve and monitor implementation of the Contractor's Environmental and Social Management plan (C-ESMP) in liaison with the Client, NEMA and other agencies.
iii. Inspect contractor's construction equipment; results of material and soil tests; safety of the works, property and personnel; and schedule of mitigation measures for adverse environmental impacts. Notify contractors to remedy works and materials that fail to comply with specifications.
iv. Guide the Contractor in the development and implementation of Environmental and Social Management Plans
v. Evaluate any proposed changes (e.g. time, scope, and cost) by the contractor during the course of the Project and advise MLHUD on these variations and obtain approval of the client before approval of these changes that may include time extension, additional cost and variation orders.
vi. Monitor and supervise progress of contractors' works vis-à-vis applicable technical specifications and design.
vii. Ensure that road safety design requirements are implemented following the contract specifications.
viii. Check and ensure that the contractor has taken appropriate measures with regard to the safety and health care of their workers throughout the project duration
ix. Maintain records of instructions given to the contractor, measurement and quantity records, payment records, safeguards implementation reports and other relevant documents pertaining to the works.
x. Undertake continuous inspection of works on ongoing and completed works to check for compliance with the contract specifications, certificates of approval and safeguard policies.
xi. Liaise with all authorities likely to be affected directly or indirectly by project activities e.g. utility companies like UMEME, telecommunication companies, National Water and Sewerage Corporation, District Authorities, Town Council authorities, Uganda Police Force and other relevant stakeholders.
xii. Establish procedures to verify contractor performance and report progress and problems on time, including quality control reports, quantity survey records, requests for variation or change orders.
xiii. Enforces the full-time deployment of contractor's equipment staff at sites.
xiv. ensure that the contractor maintains the existing roads, provides traffic detours where necessary and maintains material haulage roads.

xv. The consultant shall prepare and submit monthly, quarterly, annual Progress and incident reports to MLHUD and other relevant stakeholders.
xvi. At completion of the Works Contract, the consultant will prepare a project completion report and Completion Certificate for submission to the client.
xvii. Make recommendations for Operation and maintenance including recommendations for improvement to the Client.
xviii. Review the contractor's decommissioning plan and monitor the decommission and restoration of disturbed sites after completion of works

9.8.7 Role of the contractor

The Contractor shall have the following staff to ensure proper implementation of Safeguards;

- Health and Safety Officer
- Sociologist
- Environmentalist

The overall responsibility of Contractor shall include the following;

i. 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 ESMP.
ii. Ensuring that all environmental monitoring data is made available at regular intervals and that any divergences from performance standards will be fully explained, together with any necessary preventative measures.
iii. The contractor will appoint a competent Safety and Health officer to develop and enforce safety and health precautionary measures for both the workers and the community at large.
iv. The contractor will appoint a Community Liaison Officer to bridge the gap between the contractor and the community, coordinate grievance redress to ensure community concerns are addressed.
v. Implement project engineering designs and project daily operational activities to ensure compliance with the design and the ESMP with regards to environmental protection and impact mitigation.
vi. Day to day monitoring of environmental matters - this will include wider environmental aspects including matters not directly concerned with the actual construction.
vii. Awareness raising and training of his staff with respect to environmental issues; this will include notification of the severe penalties for non-compliance with instructions which may include dismissal. Design and conduct appropriate induction training for all workers on recruitment about safety, health and environment while working in the project areas.
viii. Preparation of weekly and monthly environmental inspection and monitoring report in a format acceptable to MLHUD
ix. Undertake mainstreaming of gender issues into the entire project including but not limited to work placements, tools and fixtures, sanitary utilities, creating awareness on sexual harassment and any other forms of discrimination based on gender, ethnic background and race.
x. Ensure that all workers are provided with appropriate PPEs and further enforce their use at all times

9.8.8 Roads User Committees

Considering the lengths of the roads, Road user committees will be formed at ward level to handle all roads in that particular ward. These will play key role in mobilization of community members for meetings, identifying issues such as theft and accidents. They will also form the grievance redress committees and will act as a channel through which grievances related to the project are lodged to the contractor, supervising consultant and the respective Local authorities.

9.9 Training and Capacity Building

MLHUD will organize capacity building workshops for personnel that will be responsible for ESMP implementation. The supervising consultant shall also ensure that the contractor's staff are inducted in Environmental and Social safeguards before commencement of works. The contractor shall also undertake continuous training of workers and shall conduct routine site meetings through which workers' capacities to implement the ESMP shall be enhanced.

9.10 ESMP Financing and Implementation Costs

Areas of ESMP financing shall include funds for provision of Personal Protection Equipment, awareness creation meetings, trainings, and Compliance to Statutory E&S requirements among others.

The overall implementation costs for the ESMP during the construction phase is estimated at UGX 2,703,845,000; of which UGX 951,600,000 will cater for the management of environmental safeguards while UGX 1,435,545,000 will cater for social safeguard management.

Responsible Agencies	Safeguards	
	Environment	Social
Contractor	897,600,000	639,450,000
MLHUD	30,000,000	579,000,000
Buliisa DLG	24,000,000	171,000,000
Town Councils		46,000,000
Sub total	**951,600,000**	**1,435,545,000**
Monitoring		**316,700,000**
Overall Total		**2,703,845,000**

9.11 Consequences of Non-Compliance

The ESMP shall form part of the contractual obligations and have be embedded in the works contract, detailing requirements that will be enforced and stating penalties to noncompliance, which may include non-approval of payment certificates. Buliisa District Local Government and the respective Town Councils (Buliisa and Butiaba) will be responsible to enforce contractor's compliance with the ESMP and these shall be supported by the supervising consultant and MLHUD.

9.12 Principles for potential project design adjustment

In case of any adjustment of design or a new site including ancillary sites that have not been concluded upon at the time of drafting this ESIA, all mitigation/enhancement measures provided and principles set out in this report shall apply to these adjustments as deemed appropriate. These may include; Material sources (Stone quarries, sand and gravel sources), worker's camp, equipment yard, disruption of any public utilities or infrastructure, and any other issues that may not have been foreseen at this stage.

9.13 Communication and Progress Reports

A monthly Project Progress Report with clear illustrations will be prepared and submitted to the MLHUD Buliisa District Local Government and the respective Town Councils. The Detailed Environmental Report will form an appendix to this monthly progress report and will include among others a copy of all written

documentation and records of verbal communication will be submitted as part of the detailed monthly report which will result from a compilation of Weekly Reports.

The weekly reports will also include:

- General progress of the project with special emphasis on work in environmentally sensitive areas;
- Routine mitigation measures being used and monitoring of effectiveness; and
- Environmental concerns encountered including community concerns, recommendations made and new mitigation measures taken (if any) including a list and record of all parties notified of any changes.

9.13.1 Emergency/Environmental Response

For monitoring emergencies, the Supervising Environmentalist will target the following:

- The contractor's activities for non-compliance with environmental specifications;
- Grounds for non-compliance and notify the Supervising Engineer. If non-compliance is not rectified and the significance of the non-compliance warrants it, the procedure to halt construction will be initiated.

The Environmentalist can instruct the contractor to halt work if:

- Construction activities are unexpectedly and significantly affecting environmentally sensitive areas or features;
- There is likelihood or actual occurrence for an environmental emergency;
- A government agency has ordered the work to halt to enable supervision of remedial activities before work can commence.

9.13.2 The Monitoring Indicators

The monitoring team shall most particularly check for the following issues among others;

i. Possession of statutory Permits and compliance to the conditions of approval
ii. Material sources
iii. Physical cultural resources
iv. Water Resources
v. Safety and Health of community
vi. Safety and Health of Workers
vii. Gender and sexual harassment
viii. Campsite establishment and operation
ix. Parking Yard establishment and operation
x. Waste Management
xi. Employment and workers welfare
xii. Flora and Fauna
xiii. Child Protection
xiv. HIV/AIDS and other STIs
xv. Stakeholder communication and Engagements
xvi. Grievance Management for workers and community

9.13.3 Frequency of Monitoring and Reporting

Monitoring will be undertaken throughout the project period (Table 9-1). Detailed monthly monitoring reports with clear illustrations of implementation of mitigation measures will be compiled by the contractor

overseen by the supervising consultant. These detailed reports with evidence of compliance will be prepared and appended to summary monthly reports.

Table 9-1: Environmental and Social Reporting

Activity	Monitoring frequency	Responsible party	Output
Supervision and management	Daily	Contractor	Reports
Site operation	Daily	Contractor/Supervising consultant	Daily reports
	Weekly	Contractor/Supervising consultant	Weekly Reports
	Monthly	Contractor/Supervising consultant	Monthly progress Reports
Quarterly and Annual monitoring reports	Quarterly / Annually	MLHUD	Minutes and inspection records

9.14 Grievance Redress Mechanisms:

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

The objectives of the grievance process are:

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

The project will operate two major grievance redress mechanisms, namely;

a) Worker's grievance redress mechanism, and
b) Community grievance redress mechanism.

NB: *In all cases, criminal matters shall be explicitly handled in accordance with the Criminal Code Act and other laws governing criminal issues in Uganda.*

9.14.1 Worker's Grievance Redress Mechanism

Employee Grievances may include;

- Undesirable working conditions in physical terms.
- Changes without prior notice.
- Poor employee relations.
- Improper wage adjustments.
- Dissatisfactory office policies in case of: Promotion, Demotion, Leaves, Overtime
- Violation of laws.
- Inadequate safety, health, and welfare amenities.
- Labour-management hostility.
- Incidences of workplace favouritism and nepotism, among others.

9.14.1.1 Workers' Council

The road upgrade project will employ an estimate of 100 workers. For better organisation and management of workers' grievances and discipline, this substantial number shall necessitate the establishment of a Workers' Council. The workers' council shall consist of each category of workers organizing themselves and select a male and female representative. These categories will include;

- Casual workers
- Drivers, Operators and Turn men
- Flag Personnel
- Site Cooks & Cleaners
- Technical
- Consultant Site Sociologist

For effective confidence building and confidentiality, the Consultant Site Sociologist shall be the secretary to document and manage the grievance log, minutes, and writing workers' council reports. The other members will select a Chairperson and Vice Chairperson. The council shall meet at least once every week to ensure timely management of workers' issues.

Roles of Workers' Council

With management support from the contractor, Supervising consultant and MLHUD, the workers' council shall play a significant role in proactive management of employer –employee relations, workers' welfare and grievances within the workplace. This council 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 lodged and managed and their rights to be heard and respected.
Workers' Council shall;

- Provide 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.
- Receive and report 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
- Represent 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.
- Educate 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
- Regularly solicit for employees' suggestions/opinions to management through appropriate and organized channels such as their representatives, suggestion box, or joint meetings from time to time
- Act as a point of contact between the employees and management; establish and maintain good relations, foster effective two-way communication and mutual understanding between workers on one hand, and with management on another.
- Identify and represent concerns of special interest groups on the project such as women, expectant and lactating mothers, workers with disability etc.
- Organize and conduct monthly Workers' GMC 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 MLHUD pointing to key action areas requiring attention.

- Report any incident(s) of violation of workers' rights, staff indiscipline and related issues to management for redress
- Keep adequate log of all matters that come before the Workers' GMC for better reference and effective management

NB: *Any appeals from the Workers' Council of disciplinary nature shall be referred to the Site Disciplinary committee while unresolved grievances shall be referred to the Site GMC*

9.14.1.2 Site Disciplinary Committee

A *Site Disciplinary Committee* comprising of the following members will be established to manage appeals from workers' council;

- Consultant's Lead Sociologist (Chairperson)
- Contractor's Human Resource Officer (Secretary)
- Chairperson of Workers' Council

NB: *The committee may adopt any other members deemed important depending on the issue being resolved.*

The committee shall meet at least twice every month, during working hours based on a meeting schedule prior agreed with project Management (contractor and supervising consultant). A special meeting, if required, may be held at the call of the Chairperson at short notice in consultation with the project management. The site disciplinary committee shall ensure fairness and make recommendations to the Contract Manager on the appropriate course of action.

NB: *Any resulting appeal against recommendations from the Site Disciplinary committee shall be escalated to MLHUD through the Resident Engineer for overall guidance and more appropriate actions. MLHUD may involve mandated offices including Labour Officers, Labour Unions, among others to conclude the emerging labour issues.*

9.14.1.3 Site GMC – handle within 5 days upon receipt of Grievance

A workers' Site GMC will be established to manage grievances lodged by workers. The site GMC shall also receive and handle/or refer unresolved matters to the Town Council GMC any community grievances that may be lodged directly to the project implementing team at the site. The GMC at Site shall comprise of the following members

- Resident Engineer (Chairperson and presides over all committee meetings).
- Consultant's Sociologist (Secretary - deals with correspondences and recording of Grievances in the Site Grievance Log Book kept at the campsite).
- Contractor's Sociologist
- Consultant's Environmentalist
- Contractor's Site Engineer
- Contractor's Health and Safety Officer
- Chairperson of Workers' Council - represents all workers concerns and interests.

The committee shall meet at least twice every month, during working hours based on a meeting schedule prior agreed with project Management (contractor and supervising consultant). A special meeting, if required, may be held at the call of the Chairperson at short notice in consultation with the project management. The contractor shall make immediate responses to matters related to the road construction, contractor's workers, agents, sub-contractors or suppliers.

Stages of handling workers' grievances;

Option 1: Informal discussion
If workers have a grievance or complaint regarding their work, they shall, wherever possible, raise their concern with a supervisor or manager as it may be possible to find a solution informally. This shall make it more likely that disputes can be resolved quickly, closer to the source of the problem, making it less likely that the issue escalates into an intractable problem. Nonetheless, the issue and response shall still be logged and tracked from the perspectives of checking outcomes and monitoring.

Option 2: Formal complaint
If the grievance is not resolved informally, the aggrieved shall proceed to resort to the formal grievance redress mechanisms as per the following steps;

Step 1: Lodging the compliant to Workers' Council
If the matter is serious and/or the worker wishes to raise the matter formally, the worker shall set out the facts of the grievance verbally or in writing to the committee, with support and guidance from the section representative who then forwards the complaint to the secretary. The secretary then records the complaint in the log book and notifies the chairperson. Alternatively, the worker may raise complaint through suggestion boxes, phone calls, text messages or e-mail to the secretary (Consultant's Site Sociologist).

Step 2: Assessment of compliant and investigation by Workers' Council within 5 days
On receipt of the complaint, the secretary shall make further investigations and in consultation with Chairperson shall schedule for a meeting (depending on the urgency of the complaint) to assess the complaint and determine the corrective action. The assessment shall also identify the key issues that have been raised, together with any root causes, and shall determine the outcome that the worker is looking for from the process. Any additional information shall be gathered to allow a full assessment.
The appropriate form of investigation will depend on the type of complaint and the seriousness of the allegation. In general terms, the committee shall try to understand the key issues and interview the individuals involved in a complaint, e.g. those managing the workers, or those responsible for the activity or service that is raised in the grievance.
The workers' council shall conclude the issues or escalate the issues either to the Site Disciplinary Committee (if it is of a disciplinary nature) or to the Site GMC if it is a grievance which needs redress.
Concluded issues which require attention of management shall be communicated formally by the Secretary to Contract Manager for action with a copy to the Resident Engineer.

Step 3: Determination of corrective action by Disciplinary Committee or Site GMC within 7 days
A disciplinary committee shall then hold hearings, and invite both the offender and the offended. The disciplinary committee shall give fair hearing to anyone suspected as offender in order to make fair judgment guided by the Workers' Code of Conduct. On assessment of the complaint and judgement derived from hearings convened for complaints of disciplinary nature, the disciplinary committee will advise / recommend to the contractor's management in writing on the appropriate course of action to be taken against the suspected offender. The submission shall be made by the Chairperson to Contract Manager with a copy to the Resident Engineer.
Where a complaint is not of disciplinary nature, or is from a community member, the Site GMC shall hold hearings, and invite the complainant to provide detailed information; consider the settlements required and make effort to resolve the matter. The Site GMC shall give utmost consideration to the issue raised so as to salvage the after-effects this may cause to the project, the affected person(s); public amenities or natural systems.

Step 4: Feedback from the affected parties within 3 days

The contractor or worker shall give feedback to the disciplinary committee on the implementation of the Committee recommendation and this shall be recorded in the log book.

On assessment of the non-disciplinary complaints and redress derived, if this is acceptable to the complainant, the Site GMC shall liaise with the complainant to document the redress agreed and have it signed by the complainant; this shall be recorded in the Log Book. The redress shall be implemented according to the timelines that shall be agreed upon during the discussions with the complainant. The feedback on corrective actions shall however be given in a period of 03 days.

Step 5: Appealing to MLHUD against the Verdict of the Site GMC

Any issues that require escalation beyond disciplinary committee or Site GMC shall be referred to MLHUD. The issues shall be referred by the Resident Engineer and addressed to Permanent secretary MLHUD with Attention to Social Development Specialist.

Upon the receipt of case the project management team including shall review and handle the matter within 10 days. The team shall comprise at the minimum the following;

- Project Engineer (Chairperson)
- Social Development Specialist (Secretary)
- Environment Specialist
- Communication Specialist

In the event that MLHUD finds a valid case, it would then re-visit the process of investigation in consultation with the District Labour Office and/or any other relevant office/ agency.

The steps of the Worker's grievance management process are illustrated below;

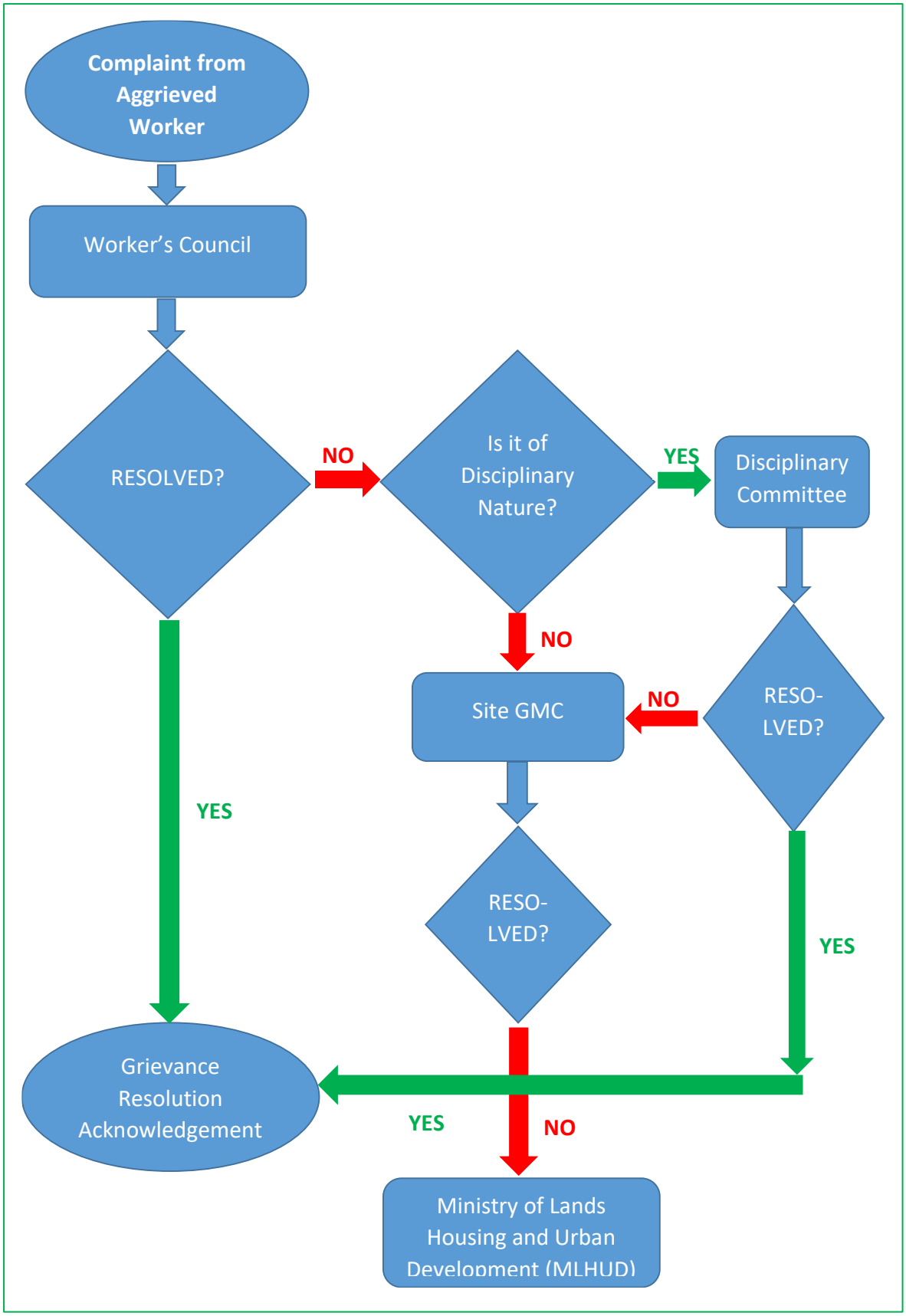

Figure 9-1: Site/Workers' Grievance Redress Pathway

9.14.2 Community Grievance Redress Mechanism

Two major categories of complaints and grievances may arise; a) Civil and b) Criminal

Criminal grievances shall be immediately referred to Uganda Police for statutory investigations and management in accordance with Uganda's legal system. Criminal grievances include GBV, VAC, theft, etc. On the other hand, civil related grievances include complaints that require civil understanding and settlement. These shall be handled with guidance from the following;

Grievance Management Structure

- The grievance management structure will be anchored to institutionalize the decentralized setting of the Local Government system. Hence committees shall be established at Sub County, Town Council, and District level to manage grievances.
- The key components of the grievance management structure will include the following;
- Complaints and Grievances Desk
- Grievances Management Committee at Ward, Contractor Site, Town Council and District levels**.**
- Appeals Procedure.
- Communication protocols and Feedback**.**

Common Civil Related Grievances in Construction Projects

Considering the nature and extent of works on the roads' rehabilitation, grievances may arise especially during the construction phase of the project and these include;

- Land requirements especially where a realignment is sought, alternative access where a road has been closed due to ongoing works like on a swamp or river crossing, workers camp and material storage areas
- Clearance of right of way which may affect crops and trees
- Temporary displacement of road side activities in urban centers, including vendors
- Complaints related to noise, dust, and traffic incidents
- Complaints on workers behavior or conduct specially towards women, girl and boy children
- Illicit behaviors like alcoholism, smoking, drug abuse etc of the contractor's workers
- Disruption of social set up and security
- Disputes on compensation values
- Increased pressure on social services and infrastructure, including water supply
- Contractor failure to pay workers and suppliers
- Accidents arising out of contractor's negligence to provide necessary information, protective gears and supervision

Complaints and Grievances Desk

There will be the secretariat for grievances management hosted within the Ward Agent for Ward GMC, Contractor's Sociologist for Site GMC, CDO for Town Council GMC, District CDO for District GMC and Social Development Specialist for MLHUD GMC. This will be dedicated office assigned the responsibility of receiving, registering, and screening, assessing and following up complaints and grievances to their conclusion. Grievance Log books for recording community grievances will be available at each Grievance management level. Specific capacity building will be delivered by the MLHUD to these secretariats to ensure that they perform their roles effectively.

The Grievance Management Committees (GMC)
Dedicated Grievance Committees will be established to manage grievances during project implementation. The committees will be set up in a manner that brings political leadership and technical teams so that any resultant agreements are politically acceptable and technically compliant. The grievances management committees shall be formed at Ward, Contractor's Site, Town Council, District and MLHUD level.

Community Grievance Management Committees- to handle within 3 days upon receipt of Grievance
The Grievance Redress Committee per ward shall be formed. This is due to the recognition that these roads are concentrated and the establishment of a ward level committee will be adequate to support grievance management. The committee shall include at least 10 members including Chairperson, Vice Chairperson, Secretary, 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.

GMC at Ward Level- to handle with 3 days upon receipt of Grievance

This shall be the first stage of lodging and managing complaints at community level. It shall include the following members;

- Chairperson LCII - (Chairperson)
- Town Agent (Secretary)
-
- Woman representative
- Representative of PWDs
- Representative of Elderly
- The LC I Chairpersons and Vice Chairpersons of the respective complainant LC will be ex-officials to these committees.

GMC at Site Level- to handle with 5 days upon receipt of Grievance
The GMC at Site level shall be as provided in Section 9.13.1.3 above; in addition to handling workers grievances, it shall also handle community grievances refrred from the Wards or directly relayed to the site by the members of the public.

GMC at Town Council Level- to handle with 7 days upon receipt of Grievance
Given its extended nature of staffing and complexity, the town council grievance management committee shall include the following members;

- LC III Chairperson/ Mayor (Chairperson)
- Town Clerk
- Town Council Community Development Officer (Secretary)
- Town Agent where the grievances originated
- Representative of the PAPs

GMC at District Level- to handle with 3 days upon receipt of Grievance
At the District Level, the Grievances Management Committee shall consist of;

- LC V Chairperson (Chairman)
- Chief Administrative Officer
- District Community Development Officer (Secretary)

- Representative from the PAPs
- District Lands officer
- Any other Officer that the CDO or CAO deems fit to fast track the grievance redress process.

GMC at Ministry Level to handle with 3 days upon receipt of Grievance
At the Ministry of Lands Housing and Urban Development the Permanent Secretary shall take administrative charge of all referred complaints/grievances. The Social Development Specialist shall be the focal person for grievance handling at the Ministry.

Capacity Building for the Grievances Management Committees
The MLHUD shall orient and train the committees in their responsibilities. In the execution of their responsibilities, the respective committees will seek support and advice from any other relevant official (s) from time to time depending on the matter being handled.

Appeals Procedure.
Where the complainant is dissatisfied with the outcome of the negotiation or implementation of agreed upon actions, he/she shall be advised to lodge an appeal to be handled at a higher level within 14 days. This procedure shall be followed until all resolution levels.

Process of handling community grievances

Step 1: Receipt of complaint

The grievance management committees at all levels will have one person to act as the grievance officer. A verbal or written complaint from a complainant will be received by the grievance officer and recorded in a grievance log that is kept in the community at each Grievance management level. Complaints can be submitted at any time, either directly or through a grievance handling committee member. Some can also be submitted by word of mouth or through telephone, SMS or emails.
At Ward level, which is the first level of community grievance management, the grievance officer shall register the complaint, screen it and handle it if possible or;

i. Refer to the grievance management committee for further investigations, or
ii. Refer to police if the grievance is of criminal nature for example assaults, rapes, defilements, theft etc. If the aggrieved party is satisfied, the matter shall be closed and signed off with them in the complaints log book.

This committee shall sit at least every two weeks to investigate and conduct hearings, outcomes of which will be given to the complainant within 24hrs. If the complainant agrees and is satisfied with the decision taken, the matter shall be closed and signed off in the complaints log book. If the party is not satisfied, the matter shall be referred to the town council in Step 2.

Step 2: Escalation of Grievances to Construction Site Grievance management committee
The site GMC shall receive and register the grievances by the Contractor's Sociologist. The Consultant Site Sociologist will then review the register and recommend to the Chairperson the schedule for GMC meeting. The affected person (s) shall be involved in GMC hearings so that conclusive solutions are arrived at. Once completed, the affected person shall sign in the grievance register if satisafied and if not satisfied with outcome, he/ she or the Site committee will escalate to Town Council within 7 days.

NB: At the Site level, the Resident Engineer shall update MLHUD on grievances management and emerging issues which might require immediate or explicit action or support from MLHUD to expedite project implementation.

Step 3: Escalation of Grievances to Town Council Grievance management committee
The town councils shall have a grievance management desk. The Community Development Officer shall be the Grievance officer responsible for recording all grievances at this level. Member ot the committee shall include; the Mayor, Town Clerk, Town agents, and any other person deemed relevant by the Mayor. Where the town council receives grievances directly from the community, the issues will be referred to Construction site for action. If necessary, the complainant and LC1 chairperson of their village shall be invited to attend the hearing.

If the complainant is satisfied with the decision at this level, he/she shall be informed of the outcome within 24hrs and the matter shall be closed off and signed in the grievance log book. If the complainant is not satisfied, the matter shall be referred to the District Grievance management committee.

NB: At the Town Council level, the Town Clerk shall update MLHUD on grievances management and emerging issues which might require immediate or explicit action or support from MLHUD to expedite project implementation.

Step 4: Escalation of Grievances to District Grievance management committee
In the event that a complainant is not satisfied with the decision made by the Town council committee or the committee fails to resolve it, it shall be referred to the District Grievance management committee. This committee shall be chaired by the LCV Chairperson and members will include the CAO, RDC, District Councillors, ARSDP focal person and any other persons deemed relevant by the chairperson. At district level, the District Community Development Officer shall be responsible for receiving and recording the grievance in the log book. On receipt, he will screen the grievance and handle it if possible. If not, he will notify the committee chairperson who shall convene a meeting/ hearing within one week, the outcome of which shall be communicated to the aggrieved person within 24hrs.
If the complainant is satisfied with the outcome, the matter shall be signed off in the log book. If the aggrieved is not satisfied, the matter shall be referred to the Ministry of Lands Housing and Urban Development as step 4.

NB: At the District level, the CAO shall update MLHUD on grievances management and emerging issues which might require immediate or explicit action or support from MLHUD to expedite project implementation

Step 5: Escalation of Grievances to MLHUD Grievances Management Committee
At the Ministry of Lands, Housing and Urban Development, referrals shall be registered in a complaint log book by the Social Development Specialist. Within 2 weeks, the MLHUD committee shall investigate and if necessary, conduct site visits and conclude the issue.
If the complainant is satisfied with the decision, the matter shall be signed off in the complaints log book with consent of the complainant. The Ministry shall, in form of reports, also report to the World Bank on the complaints handled and the outcomes of the same.
In the event that the matter has not been solved at this level, MLHUD may advise the complainant to seek further justice from alternative offices like courts of law or any other Government agencies.

The steps of the grievance management process are illustrated below.

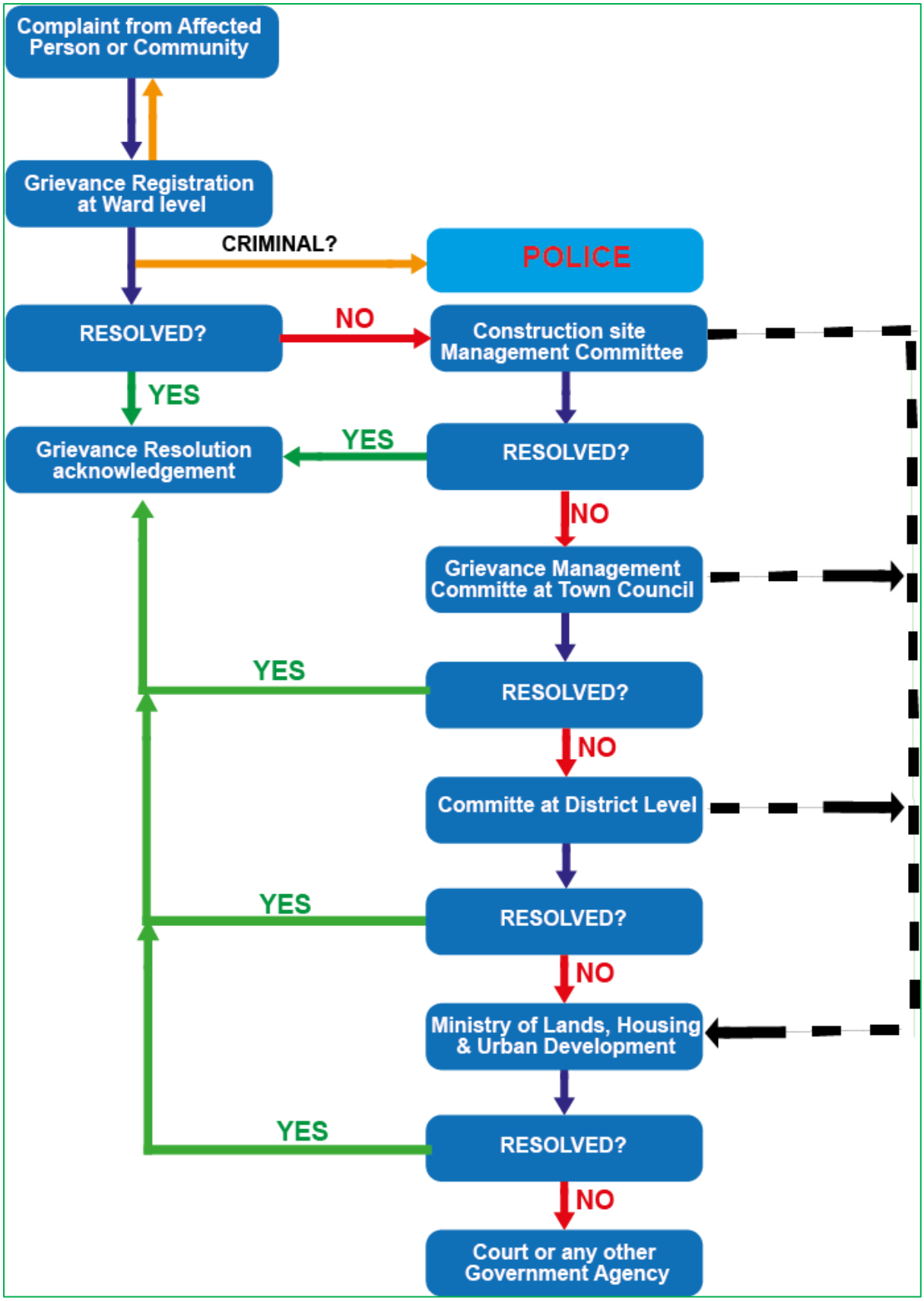

Figure 9-2: Community Grievance Redress Pathway

Copy of Grievance Register
(A2 Book Hardcover Bound 20 pages) Committee)

MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT
Albertine Region Sustainable Development Project
Complaints and Grievances Register
Sub County/ Town council……..……District……..……

S/N	Date received	Name of complainant	Zone and Parish	Contacts	Complaint Description	Compliant Category[1]	Solution Sought	Action Taken	Closure Date	Referral Date	Comments on status of complaints	Complainant satisfied	Sign of complainant

Note: The complaints and grievances register should be able to provide the stakeholders with a record of the type of grievances and any trends, effectiveness of resolution strategies, and risk mitigation measure implemented in the Complaints and Grievances framework.

[1] 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

9.14.3 The World Bank's Grievance Redress Service (GRS)

The WB GRS provides an avenue for individuals and communities to submit complains directly to the World Bank if on their opinion a World Bank financed project has or is likely to cause harm to communities and the environment which in turn may have adverse effects to them or the community. The GRS seeks to ensure that grievances are promptly reviewed and responded to, and problems and solutions identified by working together.

The GRS acknowledges the project-level grievance mechanisms as the primary tools for raising and addressing project-related grievances. The GRS helps to resolve issues that cannot be resolved at the project level or where there is no project-level grievance mechanism.

How to Submit a Complaint: The GRS accepts complaints in English or in the language of the complainants. The channels for submission include the following:

i. The World Bank – Uganda Country Office
   Rwenzori House, 1 Lumumba Avenue,
   P.O. Box 4463, Kampala, Uganda
   +256 414 230 094
   Email: ugandaalert@worldbank.org
ii. Complainants may use the form on the GRS website available at www.worldbank.org/grs
iii. Submissions to the GRS may also be sent by: Email: grievances@worldbank.org
   Instructions to submit procurement related complaints can be found on the GRS website.
iv. Letter can be sent to:
   The World Bank Grievance Redress Service (GRS)
   MSN MC 10-1018 1818 H St. NW
   Washington, DC 20433, USA

Complaints should:

- Include the names of complainant(s) (or their representatives) and state if confidentiality is requested;
- Identify the project that is the subject of the complaint
- Describe the harm complainants believe is caused or may be caused by the project

9.15 Environmental and Social Management Plan (ESMP)

For each stage of the project and for each activity that could give rise to an environmental and social impact, the ESMP lists the requirements to ensure effective mitigation. For each of these activities, the following information is presented:

i. Project phase
ii. Likely impacts.
iii. Proposed mitigation measures that the project will implement.
iv. Parameters that will be monitored to track how effectively mitigation measures will be implemented.
v. The timing for implementation of the action/ frequency of monitoring and.
vi. The responsible party for ensuring full implementation of that action.

The environmental and social management plan is detailed as given in Table 9-2 below;

Table 9-2: Environmental and Social Management Plan (ESMP)

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
	ENVIRONMENTAL SAFEGUARDS										
1	Management of cut to spoil material	Contamination of water courses Blockage of access	Acquire temporary stockpile sites in consultation with the District Environmental Officer	Throughout project	Start of project	Provisional sum for lease of stockpile sites				Contractor's bid.	No. of stockpile sites acquired
			Develop and implement a stockpile management plan	Start of project	Throughout project					Covered	Possession of Approved Stockpile management plan
2	Waste management	Contamination of soil and water resources Visual blight Odour nuisance	Purchase assorted Dustbins at site	Bi-Annual	Throughout project	Lump sum cost for 4 dust bins for biodegradable and non-biodegradable waste per site (road and auxiliary sites)				20,000,000	No. of Dustbins on site
			Procure services of a NEMA registered hazardous waste handler to undertake Collection, transportation and disposal of Hazardous waste	Monthly	Throughout project	1,000,000 per tonne collected monthly				48,000,000	Amount (in tonnes) of hazardous waste collected and transported for disposal
			Procure services of a waste handler to undertake Collection, transportation and disposal of domestic waste	Fortnight	Throughout project	300,000 monthly				3,600,000	Amount (in tonnes) of domestic waste collected and transported for disposal
			Provision of workers with appropriate protective wear when handling waste	Bi-annually	Throughout project	Provisional sum				Covered	No. of workers using PPE
			Provide an area within each construction site for storage, sorting and segregation of waste		Throughout project	N/A				N/A	Presence of a gazetted area for waste storage, sorting and segregation
3	Vegetation loss	Habitat loss Loss of species diversity Loss of aesthetic beauty	Restoration of disturbed areas e.g. camp, borrow pits, stockpile sites	Throughout project	Throughout project					Contractor's bid	No. of adequately restored sites
			Develop and implement a vegetation restoration plan which incorporates planting of trees and ornamentals in the project area.	Start of the project	Throughout project	N/A				N/A	Approved vegetation restoration plan
			Confine vegetation clearance only to the road sections planned for civil works and sections where trees may pause safety risk to road users and traffic.	Throughout project	Throughout project	N/A				N/A	Extent of vegetation cleared
4	Air quality	Air pollution leading to short- and long-term respiratory health effects, staining of trade commodities in shops along roads causing losses to owners	Suppression of dust by sprinkling of water using water bowsers	Throughout project	Throughout project	Provisional sum				50,000,000	Records of frequency of water sprinkling
			Air quality monitory	Quarterly	Throughout project	Provisional sum for air quality monitoring 20,000,000 @ quarter				80,000,000	Length of the roads with acceptable levels
			Installation of humps along project roads and those used in haulage of material to reduce speed of trucks	Throughout project	Throughout project	N/A				Contractor's bid	No. of humps installed along project and material haulage roads

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
			Covering of material with tarpaulin to prevent flying off of loose material	Throughout project	Throughout project	Provisional sum for tarpaulin purchase @ 200,000				20,000,000	No. of trucks covered with tarpaulin during material transportation
5	Impact on ambient noise	Impairement of hearing capacity of workers and neighbouring residents Disruption of activities of neighboring communities e.g. schools and learning process, resting	Sensitization of workers on regulatory noise limits and measures to reduce noise at the workplace	Throughout project	Throughout project	-				Covered	No. of sensitisations conducted No. of workers sensitized
			Limit construction activities to day time	Throughout project	Throughout project	-				N/A	Adherence to working hours
			Regular maintenance of vehicles and equipment	-	Throughout project	-				Contractor's bid	No. of vehicles and machines serviced on time
			Turn off project machines when not in use	-	Throughout project	-				N/A	No. of machines switched off when not in use
			Provide workers engaged in noise generating activities with appropriate PPE; Specifically ear muffs	Bi-annually	Throughout project	-				Covered	No. of workers using PPE
6	Soils and water resources pollution control	Surface water and ground water contamination	Collect dispose solid waste that may contaminate soils and water	Throughout project	Throughout project	1,000,000 per tonne collected twice a month				Covered under waste transportation costs	Amount (in tonnes) of solid waste collected and transported for disposal
			Water quality monitoring	Monthly	Throughout project	Provisional sum for water quality monitoring 2,000,000 @ quarter				24,000,000	No. of water sources with acceptable levels
		Soil contamination.	Prepare and use oil spill containment kits	Throughout project	Throughout project	Lump sum				10,000,000	No. of oil spill kits in use
			Train site staff to manage oil spills	Bi-Annual	Throughout project	Fuel and per diems facilitation for trainers 10,000,000 at training	10,000,000				No. of staff trained that are effectively managing contamination
7	Environment, Community health and safety	Accidents to community during construction activities	Employment of; Onsite Registered nurses Doctor-on-Call, Health and Safety Officer Sociologists NEMA registered Environmentalist	Throughout project	Throughout project	Provisional sum for 2 Site Nurses - 2,500,000 as follows: 1 Doctor on call – 3,000,000 1 Health and Safety Officer – 3,000,000 1 Environmentalist – 3,000,000 1 Sociologist – 3,000,000 5 Security Guards – 400,000 2 Caterers and 2 cleaners @ 350,000 All the above per month for 12 months				244,800,000	Contracts signed with Site Safeguards staff
			Training program on Health and Safety for	Quarterly	Throughout project	5,000,000 per quarter	20,000,000				No. of training conducted, and documented

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
			communities and contractor's workers								
			Install road signage during and after construction works	Throughout project	Throughout project	10,000,000 per road				180,000,000	No. of safety signs installed on each road
			Recruit, train and deploy flag women and men to guide traffic during road construction works	Throughout project	Throughout project	2 flag persons per road; 350,000@				151, 200,000	No. of Contracts signed with flag persons
8	Landscape	Landscape alteration	Early closure of temporal diversions	End of use of the diversion	Throughout project	3,000,000 per road				54,000,000	No. of temporal diversions restored
			Undertake decommissioning of disturbed sites after construction phase	End of use of the particular site	Throughout project	Lumpsum of 10 million provided per project					List of decommissioned sites
9	Biodiversity conservation	Habitat los Loss of biodiversity at species and ecosystem level	Hire a Consultant to Develop, train workers and implement Biodiversity management plan	Quarterly	Start of the project	Provisional cost of 3,000,000 per quarter				12,000,000	Possession of Approved biodiversity management plan No. of workers trained
			Undertake community sensitization on natural resource conservation	Quarterly	Throughout project	Provisional cost of 3,000,000 per quarter per Town council		24,000,000			No of people sensitized No of trainings conducted
	SOCIAL SAFEGUARDS										
10	Land value	Increased value of land along project roads after construction	Regulation of prices by the district land board to ensure that they are not over raised by property owners as this can discourage people from buying such land hence limiting development.		Post construction	N/A		N/A			Set price ranges for property along the project roads
11	Development	The project will spur development in the area by attracting investors Increase in revenue to the Town councils and the district	Institute measures to maintain the aesthetic beauty brought about by these roads for example ensuring waste management through installing waste collection bins along the project roads and sensitizing the community especially roadside businesses about proper waste management to ensure the roads are kept free off litter	Quarterly	Post construction	N/A			N/A		No. of waste collection bins placed along each road
12	Management of compensation for injurious damages	Injurious loss of property due to road construction	Provide for provisional sum to cater for incidental RAP costs that may arise during road construction	Quarterly	Throughout project	Provisional sum	100,000,000				No of incidental RAP issues settled
13	Impact to schools and learning process	Disruption of learning process for schools in close proximity to the proposed roads Accidents to school children	Screening off schools that are fairly exposed to the road with iron sheets	Start of the project	Throughout project	Provisional sum for 4 schools				11,200,000	No. of school adequately screen off.
			Engage school administrators to sensitize pupils/students about the risks associated with the road construction and necessary precautions they need to undertake	Throughout project	Throughout project	-				N/A	No. of school administrators engaged
			Information regarding the work plan for construction activities along sections with schools should be disseminated to the respective schools in a timely manner to enable the school	Throughout project	Throughout project	-				N/A	No. of schools provided with construction schedules

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
			administrations make any necessary plans that they may see fit e.g. sensitization of their pupils and students etc.								
			Each worker should sign a child protection code of conduct that stipulates worker's responsibility to observe the rights of children and report any child rights violations as per the children Rights	Start of project	Throughout project	-				N/A	No. of workers that have signed the child protection code of conduct
			Continuous sensitization of truck drivers and equipment operators to take caution when working in areas close to schools especially regarding speed control	Throughout project	Throughout project	-				N/A	No. of sensitizations conducted No. of workers sensitized
14	Formation of bumps (protuberance on the road level) from construction of culverts	Impairing visibility of road users from either side thus causing accidents of humans and animals.	Install appropriate signage towards the culverts at either sides to warn road users of the protuberance on the road level	-	Throughout culvert construction	-				Contractor's bid	No. of signs provided at each culvert construction point
			Temporary humps can be installed before these culverts on either side to help reduce speed of motorists as they approach the culverts	-	Throughout culvert construction	-				Contractor's bid	No. of humps installed at each culvert construction point
			Inform the community on the progress of the construction activities, in this regard for example, emphasising that the culvert bumps are temporary.	-	Throughout culvert construction					Covered	No. of sensitization meetings held No. of people sensitized
15	Traffic and access	Disrupted access to social infrastructure Accidents due to uncoordinated traffic	Provide alternative access to social infrastructure e.g. schools, hospitals etc and provide adequate and appropriate signs warning road users about traffic detours	Throughout project	Throughout project	Provisional sum				47,555,000	No. of accesses provided to social infrastructure
			Employ flag persons at detours to guide/ control traffic	Throughout project	Throughout project	-				Covered	No. of flag persons employed per road
			Notify the community of the detours in advance through community meetings, radio and other measures.	Throughout project	Throughout project	Provisional sum				10,000,000	No. of notices displayed No. of announcements
			Diversions that cease to be of use when the road works are complete will be restored to as near as possible their original state, through landscaping and rehabilitation	Throughout project	Throughout project	-				N/A	No. of diversions restored
16	Material haulage roads	Damage to haulage routes causing accidents and rendering them unmotorable	Maintain the haulage routes in a motorable state	-	Throughout project	-				Contractor's bid	No. of material haulage routes maintained in a motorable state
			Driver shall sign a code of conduct on speed control and observing road regulations	Start of the project	Throughout project	-				N/A	No. of drivers that have signed the code of conduct on speed control
			Sensitize workers on speed control through	Weekly	Throughout project	-				N/A	No. of tool box talks conducted

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
			conducting tool box talks								No. of workers sensitized
17	Employment and economic development	Creation of employment opportunities	Deployment of a human resource manager to implement human resource policies, training of workers in human resource	Start of construction phase	Throughout project	1 Human Resource Manager – 3,000,000 per month				36,000,000	Contract signed with a Human Resource Manager
			Development and implementation of a Labour Force Management Plan and human resource policies that favour local labour	Start of construction phase	Throughout project	Lumpsum including adverts for available jobs in local towns or media				5,000,000	No. of local labourers No. of adverts
			Sensitizing the youths to build local capacity in road construction and maintenance activities	Quarterly	Throughout project	Provisional sum 1 session per Town Council per quarter @ 2,500,000 per session		5,000,000	20,000,000		No. of locals trained
		Employment opportunities for suppliers and businesses	Provision of information to the public of available local procurement works and services	Quarterly	Throughout project	Lumpsum including adverts for available business opportunities in local towns or media				5,000,000	No. of Local entrepreneurs engaged in road construction and maintenance No. of procurement notices displayed
18	Stakeholder management	Limited stakeholder participation in project monitoring and management Reduced Community interest in the project	Stakeholder awareness meetings about project activities and progress	Quarterly	Throughout project	National, District, Town Council and community stakeholder meetings		9,000,000	6,000,000		Number of awareness meetings conducted
			Formation and Training of Project Management Committees at District, Town Council and Roads User committees	Annually	Start of the project	Facilitation and training materials and staff per diems	15,000,000				Number of Committees formed Number of Committees trained
			Formation and operation Grievance Management Committees	Annually	Start of the project	Meals, travel, training materials and staff per diems		20,000,000	20,000,000		No of Grievance Management Committees established and trained
19	Child Protection	Violation of children's rights	Hire a Consultant to develop, train workers and implement Child Protection Plan	Quarterly	Start of the project	Provisional cost of 3,000,000 per quarter	12,000,000			12,000,000	Possession of Approved Child protection plan No. of workers trained
			Follow up on cases	Monthly	Throughout project	Facilitation (fuel and per diem) for LG Provisional sum of 1,500,000 per month		18,000,000			No of cases followed up No. of cases resolved
			Sensitize the communities on Child Protection	Quarterly	Throughout project	Provisional cost of 3,000,000 per quarter per Town council		24,000,000			No of people sensitized No of trainings conducted
20	Gender Based Inequalities	Gender based Violence	Hire a Consultant to Develop, train workers and implement Gender protection Action Plan	Quarterly	Start of the project	Provisional cost of 3,000,000 per quarter				12,000,000	Possession of Approved Gender protection Action Plan No. of workers trained
			Follow up on cases	Monthly	Throughout project	Facilitation (fuel and perdiem) for LG Provisional sum of		18,000,000			No of trainings conducted No of People by gender sensitized

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
						1,500,000 per month					
			Sensitize workers and communities on Gender protection	Bi-annually	Throughout project	Provisional cost of 3,000,000 per session per town council		9,000,000			No of people sensitized No of trainings conducted
21	Compliance to Statutory E&S requirement	Severe impact on the physical, biological, and socioeconomic environment in the project area	Obtain statutory permits and licenses for the roads and auxiliary facilities i.e. camp, borrow pits, quarry etc	Annually		Provisional sum from	100,000,000				NEMA approval certificates, permits and licenses DOSH workplace registration certificates
			Hire consultant to conduct E&S annual Audits for all Batch 2 roads and auxiliary components	Annually		Provisional sum from	300,000,000				% score of the project on the E&S compliance
22	HIV and AIDS spread in the Community and workers	Increased spread of HIV/AIDS between workers and communities	Hire a service provider to Develop, train workers and implement HIV and AIDS Management Plan	Quarterly	Throughout project	Provisional cost of 3,000,000 per quarter				12,000,000	Approved HIV/AIDS management plan No. of workers sensitized No. of community members sensitized
			Conduct HCT/ART Outreaches to workers and all Batch 2 communities	Quarterly	Throughout Project	Provision cost of 5,000,000 per quarter		20,000,000			No of Outreaches Conducted No of People by Gender Accessing HCT/ART services
			Conduct HIV sensitization to workers and all Batch 2 communities	Quarterly	Throughout Project	Provisional cost of 3,000,000 per quarter per Town council		24,000,000			No of sensitizations conducted No of people sensitized by gender No of IEC materials distributed
23	Disability and Elderly issues	Exposure of PWDs and Elderly to risks of discrimination, insecurity and health hazards	Hire a Consultant to Develop, train workers and implement Disability Management Plan	Quarterly	At the start of the Project	Provisional cost of 3,000,000 per quarter				12,000,000	Presence of Policy on mainstreaming PWDs and elderly No of PWDs and Elderly employed
			Sensitize the communities on PWD and Elderly protection	Quarterly	Throughout Project	Provisional cost of 3,000,000 per quarter per Town council		24,000,000			No of sensitization meetings conducted No of People by Gender Sensitized
24	Grievance Management	Loss of interest and limited participation of the community on the project	Create awareness of grievance management procedure	Quarterly	Throughout the Project	Facilitation (Fuel and Perdiems) for trainers and participants of 9,000,000 per quarter 4 wards- 4 grievance management committees	36,000,000				No of Grievance Management sensitizations Conducted
			Facilitate Grievances Management committees	monthly	Throughout the Project	Travel refunds and refreshments of the committee members	16,000,000				No of Grievances Reported No of Grievances Resolved

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
						1,000,000 per Committee per quarter					
25	Security	Increase of crime like theft	Conduct vetting of employees before contracting	Bi-annually	Throughout Project life	Vetting team facilitation Provisional sum of 2,000,000				4,000,000	Number of LCs and Police Officer involved in vetting Number of criminal cases recorded related to workers
			Issue out Identifications for employees	Bi-annually	Throughout Project life	Provision for 15,000 per ID for 100 workers replaceable one				1,500,000	No of employees with valid IDs
26	Physical Cultural Resources	Destruction of PCRs	Implementation of chance finds procedure included in this report in Section 9.4.15	Throughout project	Throughout project	-				N/A	No. of encountered PCRs relocated
			Bi-annual or incidental trainings shall be conducted to ensure the workers manage the PCRs as per set regulations and guidelines.	Bi-annual Incidental	Throughout project	-				N/A	No. of trainings conducted No. of workers trained
			In compliance with the law, any chance finds should be reported to the Department of Museums and Monuments of the Ministry of Tourism, Wildlife and Heritage and the Chief Administrative officer (CAO)	Throughout project	Throughout project	-				N/A	No. of reported chance finds
			Sensitization of workers to be aware of the possibility of encountering archaeological remains and the procedure to be followed	Quarterly	Throughout project	-				N/A	No. of sensitizations conducted No. of workers trained
27	Impact on utilities within the site	Disruption in the delivery of services to the people along the respective roads	Liaise with all the utility lines operators to identify the locations of the utility lines within the proposed site	Before start of construction	Throughout project	-				N/A	No. of lines identified and documented
			Liaise with utility owners to provide early warning to the communities about any possible disruption in service provision for the different utilities. Existing communication channels such as phone text messages to consumers, media announcements could be utilised.	Before start of relocation	Throughout project	-				N/A	No. of warnings provided to communities
			Liaise with the utility providers to carry out temporary or permanent relocation, and to protect the utility infrastructure to ensure minimal damage and disruption of services	Before start of construction	Throughout project	-				Contractor's bid	No. of utility lines relocated
28	Risk to Contractor Workers' Health, Safety and welfare	Exposure of workers to Occupational Health and Safety hazards	Establish a fully equipped first aid clinic on the camp	Throughout project	Throughout project	Lumpsum				30,000,000	Presence of a fully equipped clinic at the contractor's camp
			Purchase Personal Protective Equipment for workers, their supervisors,	Bi-annually	At the start of the Project	Provision for 100 workers each gear at 500,000 replaced once a year				100,000,000	No of Workers using PPE

No.	E &S Component	Risk/Impact	Mitigation/Enhancement measure	Duration	Implementation time	Implementation Cost Per Agency (UGX)					
						Cost Description (all costs in UGX)	MLHUD	DLG	Town Councils	Contractor	Key Performance Indicators
			Visitors	Bi-annually	At the start of the Project	Provision for 30 visitors each gear at 500,000 replaced once				30,000,000	No of visitors using PPE
			Procure portable Drinking water for visitors	Monthly	Throughout the Project	Provision for 30 visitors each 2 bottles 5 days @ month				3,600,000	No of visitors received safe drinking water on site
			Workers camp								
			Provisional for Workers Camp to accommodate project office and related facilities and accommodation of key staff	Annually	At the start of the Project	Provisional sum				250,000,000	No. of facilities within the camo
			Establish mobile toilets for site workers	Annually	At the start of the Project and throughout	Provisional sum for mobile toilets, per road, per gender, for workers at an interval of 500 m along the road. @1,200,000				57,600,000	No of sites with mobile toilets

Table 9-3: Environment and Social Compliance Monitoring Plan

E &S Component	E&S Output	Indicator	Means of verification	M&E Activities	Frequency	Cost description (UGX)	M&E Cots (UGX)	Responsible party
Management of cut to spoil material	Proper stockpiling of cut to spoil awaiting use in restoration of borrow pits and other disturbed areas	No. of stockpile sites acquired	Lease agreements signed with land owners	Site visits Review of stockpile management plan	Monthly	Team facilitation No. of officers from each agency – 4 No. of days – 2 Rate 150,000	4,800,000	MLHUD NEMA DLG Town council
		Approved stockpile management plan	Stockpile inventory		Once			Supervising Consultant
Waste Management	Proper storage, collection, transportation and disposal of waste	No. of Dustbins on site	Purchase receipts Site inspections Agreement with waste handler Waste inventory Disposal certificates or receipts	Review of waste management plan Site visits Meetings with workers	Monthly	Team facilitation No. of officers from each LG – 4 No. of days – 3 Rate 150,000	5,400,000	MLHUD DLG Town council
		Amount (in tonnes) of hazardous waste collected and transported for disposal						
		Amount (in tonnes) of domestic waste collected and transported for disposal						
Vegetation loss	Limited impact on vegetation as a result of project activities	No. of adequately restored sites	Site inspections	Site inspection	Monthly	Team facilitation No. of officers from each agency – 4 No. of days – 5 Rate 150,000	12,000,000	MLHUD DLG NEMA Town councils
		Approved vegetation restoration plan		Once				Supervising Consultant
Air quality	Limited impact of project activities on air quality	Records of frequency of water sprinkling	Water bowser sprinkling records	Site inspection Review of air quality test reports	Monthly	Team facilitation No. of officers from each agency – 4 No. of days – 3 Rate 150,000	7,200,000	MLHUD DLG NEMA Town councils
		Length of the roads with acceptable levels	Air quality test results					
		No. of humps installed along project and material haulage roads	Site inspection					
		No. of trucks covered with tarpaulin during material transportation	Site visits					
Ambient noise	Limited impact of project activities on noise	No. of sensitisations conducted No. of workers sensitized	Minutes of sensitization meetings Attendance lists	Review of training material Meetings with workers	Monthly	Team facilitation No. of officers from each agency – 4 No. of days – 3	7,200,000	MLHUD DLG NEMA

E &S Component	E&S Output	Indicator	Means of verification	M&E Activities	Frequency	Cost description (UGX)	M&E Cots (UGX)	Responsible party
		Adherence to working hours	Meetings with workers	Site visits		Rate 150,000		Town councils
		No. of vehicles and machines serviced on time	Site visits					
		No. of workers using PPE	PPE distribution records					
Soils and water resources pollution control	Controlled pollution of soil and water resources during project implementation	No. of oil spill kits in use	Purchase receipts	Site visits	Quarterly	Team facilitation	9,000,000	MLHUD
		No. of water sources with acceptable levels	Water quality test results	Meetings with workers		No. of officers from each agency – 4 No. of days – 5 Rate 150,000		DLG
		No. of staff trained that are effectively managing contamination	Site inspections Training records (reports and attendance lists)	Review and update of spill contingency plan				Town council
				Review of water quality test reports				
Environment, Community health and safety	Improved Environment, community health and safety	Contracts signed with Site Safeguards staff	Contracts signed with staff	Site inspections	Quarterly	Team facilitation	12,000,000	MLHUD
		No. of training conducted, and documented	Training records (report and attendance lists)	Review and update of training material		No. of officers from each agency – 4 No. of days – 5 Rate 150,000		DLG
		No. of safety signs installed on each road						Town councils
		No. of Contracts signed with flag persons	Contracts signed with flag persons					Uganda police
Landscape	Landscape maintenance through restoration	No. of temporal diversions restored	Approved site-specific decommissioning plans	Inspection of decommissioned areas	Quarterly	Team facilitation	5,400,000	MLHUD
		List of decommissioned sites		Review of decommissioning plans		No. of officers from each agency – 4 No. of days – 3 Rate 150,000		DLG Town councils
Biodiversity conservation	Increased awareness of workers and community on natural resource conservation Conserved natural habitats	Possession of Approved biodiversity management plan No. of workers trained No of people sensitized No of trainings conducted	Approved Biodiversity management plan Reports of biodiversity monitoring indicating species composition Records of training (Report and attendance lists) Records of community sensitization (report and attendance list) and conservation programs implemented with community	site inspection	Quarterly	Team facilitation No. of officers from each agency – 4 No. of days – 5 Rate 150,000	18,000,000	MLHUD DLG NEMA UWA CSOs Town councils
Management of compensation for injurious damages	Adequate and timely compensation for injurious damages	No of incidental RAP issues settled	Reports	Review of reports Site visits	Monthly	Provisional sum	30,000,000	MLHUD, DLG, Town Councils
Employment and economic development	Employment of local community through jobs and business opportunities on the proved.	Contract signed with a Human Resource Manager No. of local labourers No. of adverts No. of locals trained Local entrepreneurs engaged in road construction and maintenance No. of notices displayed	Contracts signed with local laborers Records of training of locals (Report, attendance list, certificates awarded) Adverts and notices on jobs and business opportunities	Review of training material Site visits Meetings with workers and community	Quarterly	Team facilitation No. of officers from each agency – 4 No. of days – 7 Rate 150,000	16,800,000	MLHUD DLG Town Councils CSOs
	Continuity in learning activities of schools along	No. of school adequately screen off.	Site visits	Site inspections	Monthly	Team facilitation	9,600,000	MLHUD

E &S Component	E&S Output	Indicator	Means of verification	M&E Activities	Frequency	Cost description (UGX)	M&E Cots (UGX)	Responsible party
Schools and learning process	the project roads with limited or no disruption	No. of school administrators engaged	Meetings with school administrators Records of meetings	Meetings with school administrators		No. of officers from each agency – 4 No. of days – 4 Rate 150,000		DLG Town Councils CSOs
		No. of schools provided with construction schedules	Meetings with school administrators					
Traffic and access	Uninterrupted traffic flow and access to residents	No. of accesses provided to social infrastructure	Site visits Contracts signed with flag persons Records of announcements and notices	Review of training material Site visits Meetings with workers and community	Monthly	Team facilitation No. of officers from each agency – 4 No. of days – 5 Rate 150,000	15,000,000	MLHUD DLG Town Councils CSOs Uganda police
		No. of flag persons employed per road						
		No. of notices displayed No. of announcements						
Material haulage roads	Well maintained material haulage roads	No. of material haulage routes maintained in a motorable state	Site visits	Site inspections Review of tool box training material Meeting with drivers	Monthly	Team facilitation No. of officers from each agency – 4 No. of days – 3 Rate 150,000	5,400,000	MLHUD DLG Town Councils
		No. of drivers that have signed the code of conduct on speed control	Signed code of conduct					
		No. of tool box talks conducted No. of workers sensitized	Records of tool box talks conducted Attendance lists					
Bump formation during culvert construction	More levelled road to ease movement	No. of signs provided at each culvert construction point	Site visits	Site inspections Review of sensitization material Meeting with communities		Team facilitation No. of officers from each agency – 4 No. of days – 5 Rate 150,000	9,000,000	MLHUD DLG Town Councils
		No. of humps installed at each culvert construction point	Site visits					
		No. of sensitization meetings held No. of people sensitized	Records of meetings held with community					
Stakeholder management	Active stakeholder participation in project implementation	Number of awareness meetings conducted Number of Committees formed Number of Committees trained No of Grievance Management Committees trained	Records of sensitization (Report and attendance lists)	Review and Update of sensitization and awareness materials	Quarterly	Covered (during engagements)	Covered	MLHUD BDLG
Child Protection	Protection of children's rights during project implementation	Possession of Approved Child protection plan No. of workers trained No of cases followed up No. of cases resolved No of people sensitized No of trainings conducted	Records of sensitization and trainings (Report and attendance lists) Follow up reports	Field follow up visits Review of training material	Quarterly	Covered (during engagements)	Covered	MLHUD BDLG
Gender Based Inequalities	gender mainstreaming in project implementation	Possession of Approved Gender protection Action Plan No. of workers trained No of People by gender sensitized No of cases reported No of cases followed up	Records of sensitization and trainings (Report and attendance lists) Follow up reports	Review of training material Field follow up visits	Monthly	Provisional sum for follow up of cases	37,000,000	MLHUD DLG Uganda Police
Physical Cultural Resources	Preservation of PCRs within the project area including chance finds during construction	No. of encountered PCRs relocated	Records of relocation	Site inspection Meetings with district community development	Monthly	Provisional sum for follow up of cases	20,000,000	MLHUD DLG
		No. of trainings conducted No. of workers trained	Records of workers' trainings conducted					

E &S Component	E&S Output	Indicator	Means of verification	M&E Activities	Frequency	Cost description (UGX)	M&E Cots (UGX)	Responsible party
				office, office of the CAO and local leaders				
Compliance to Statutory E&S requirements	Project compliance to environmental and social safeguards	NEMA approval certificates, permits and licenses DOSH workplace registration certificates % score of the project on the E&S compliance	Certificates, permits and licenses	Site inspections to assess compliance to approval conditions	Quarterly	Provisional sum	20,000,000	MLHUD DLG Town councils
HIV and AIDS spread in the Community and workers	Controlled spread of HIV/AIDS between workers and community	Approved HIV/AIDS management plan No. of workers sensitized No. of community members sensitized	Records of sensitization and trainings (Report and attendance lists) Outreaches Report	Field visits Review of activity reports	Quarterly	Lumpsum	45,000,000	MLHUD DLG Town Councils CSOs
		No of Outreaches Conducted No of People by Gender Accessing HCT/ART services						
		No of sensitizations conducted No of people sensitized by gender No of IEC materials distributed						
Disability and Elderly issues	PWD and Elderly mainstreaming policy in place	Presence of Policy on mainstreaming PWDs and elderly No of PWDs and Elderly employed	Approved plans Records of sensitization	Review of sensitization and training material	Quarterly	-	Covered	MLHUD DLG Town Councils
		No of sensitization meetings conducted No of People by Gender Sensitized						
Grievance Management	Create awareness of grievance management procedure	No of Grievance Management sensitizations Conducted	Grievance redress reports records of sensitisation	Meetings with committees Review of training material	Quarterly	Team facilitation No. of officers from each agency – 3 No. of days – 5 Rate 150,000	9,000,000	MLHUD DLG Town Councils
	Facilitate Grievances Management committees	No of Grievances Reported No of Grievances Resolved						
Security	Conduct screening of applicants before contracting them	Number of LCs and Police Officer involved in screening Number of criminal cases recorded related to workers	Screening reports Employee valid IDs	Field visits	Monthly	-	Covered	MLHUD DLG Town Councils
	Issue out Identifications for employees	No of employees with valid IDs						
Risk to Contractor Workers' Health, Safety and welfare	Establish a fully equipped first aid clinic on the camp	Presence of a fully equipped clinic at the contractor's camp	Employee medical records PPE distribution records Tenancy agreement between the contractor and camp land owner	Site inspection Meetings with workers	Quarterly	Team facilitation No. of officers from each agency – 3 No. of days – 7 Rate 150,000	18,900,000	MLHUD, DLG NEMA MGLSD Town Council
	Purchase Personal Protective Equipment for workers, their supervisors,	No of Workers using PPE						
	Visitors	No of visitors using PPE						
	Procure portable Drinking water for visitors	No of visitors received safe drinking water on site						
	Provisional for Workers Camp to accommodate project office and related facilities and accommodation of key staff	No. of facilities within the camp						
	Establish mobile toilets for site workers	No of sites with mobile toilets						

10. CONCLUSION

The roads proposed for upgrading to bituminous standards constitute an integrated project for purposes of increasing rural accessibility to markets and services, prepare selected key urban centres for growth and provide economic infrastructure targeting key sectors in the region.

The purpose of the Environmental and Social Impact Assessment (ESIA) was to assess the potential impacts that the proposed road construction / upgrading Project will have on both the bio–physical and social environments and this was conducted by a multifaceted team.

Biodiversity assessments revealed that habitats along the roads were of modified agro-ecosystems, mainly fallow/ grazing land, or grasslands and with a few encounters of farmlands, of variable phyto-sociological combinations. There were no sensitive ecological receptors along the proposed road corridors, except the marginal wetland areas at the pier in Butiaba, and some marshes along the access to the Health Centre III, also in Butiaba. These are important hydrological features for regulation of water flow, and filtration.

Regarding the physical environment, overall comparison of dust levels along roads in Butiaba Town Council reveals a pristine environment with regards to air quality whereas in Buliisa Town council, non-conformity was registered along Speke and Gongo roads with Civic area and homesteads/ settlements surrounding worker camps identified as areas at risk.

Natural resource dependant livelihoods dominate the project area and these include fishing on L. Albert, crop farming, animal rearing and seashell collection among others. Archaeologically, the study found that there was no community heritage resource directly affected by the upgrading of the proposed roads, however, a chance finds procedure was included to guide on management of accidental unearthing of archaeological remains during construction works.

Several possible negative impacts of improving the road will be less severe when mitigation measures proposed are implemented. No land and/or structures along the proposed roads will be lost since designs have followed the existing alignments. Identified socio-economic issues that could be exacerbated by construction activities include disruption of access to social infrastructure like schools, health centers, safety and health of workers and the community, HIV/AIDS spread, violation of children rights and gender inequality among others.

However, construction of the roads will have positive impacts on the communities and these include creation of employment and business opportunities to local suppliers, improved access to social amenities e.g. markets, schools and health facilities and overall development of the area. Upgrade of the roads will reduce the environmental impact of their routine maintenance.

In order to ensure compliance to environmental and social safeguards, the following should be undertaken;

i. Mitigation measures identified within this report should be incorporated, as far as is practically possible, within the design details, specification, and contract documents to be drawn up for the project roads with sound environmental practices. The ESMP should be incorporated in the project

Bills of Quantities such that all costs relating to environmental and social management and monitoring are included in the project overall investment cost.

ii. Continuous capacity enhancement of the Town councils and the district to enforce the implementation of the ESMP, safeguards and project coordination among others should be undertaken.

iii. MLHUD and Buliisa District Local Government should undertake continuous engagement of stakeholders to prepare them for the project.

iv. Contractor should be required, in the tender documents, to prepare standalone Environmental and Social Management Plans (ESMPs). These should be reviewed and approved by MLHUD to guide implementation of environmental and social mitigation measures during the project implementation phase. This should be done before commencement of construction activities.

v. The Contractor, Supervising Consultant and MLHUD should have a team of Environmental and Social Development Specialists to oversee implementation of the project. Lead / Regulatory Agencies should regularly visit the roads and associated development projects as a team to ensure compliance with approval conditions in the certificates of environmental and social impacts assessment, conditions in the permits and licenses and mitigation measures contained in the ESMP, method statements of Contractors and World Bank's Environmental and Social safeguards.

11. REFERENCES

1) Bennun, L. & Njoroge, P. (1996). Birds to Watch in East Africa: A Preliminary Red Data List. National Museums of Kenya: Ornithology, 22, pp 1–16.
2) Buliisa District Local Government. (2017). Buliisa District Environment Action Plan, 2017/18-2019/20. Uganda
3) Buliisa District Local Government. (2018). Buliisa District General Health Status Report. Uganda
4) Carswell, M, Pomeroy, D, Reynolds, J and Tushabe, H. (2005). The birds atlas of Uganda. British Ornithologist' Club, London.
5) Cogger, H.G. (2000). Reptiles and amphibians of Australia.6th edition. Reed New Holland: Sydney.
6) Constitution of the Republic of Uganda, 1995. Uganda
7) Davenport, T.R.B., Howard, P.C. and Matthews, R.A. (1996). Bugoma Forest Reserve Biodiversity Report. Uganda Forest Department.
8) Draft National Air Quality Standards, 2006. Uganda
9) Drewes R. C., Howell, K & Spawls, S., (2006). Pocket Guide to the Reptiles and Amphibians of East
10) Ehrlich, P. R., Breedlove, D. E., Brussard, P. E., and Sharp, M. A., (1972). Weather and the "regulation" of subalpine butterfly populations. Ecology 53 pp 243-247.
11) Employment Act, 2006. Uganda
12) Environment Health Policy, 2005. Uganda
13) Gaston, K.J. (1991). The magnitude of global insect species richness. Conservation Biology 5, pp 283-296
14) Gerlach, J. (2005). Inter-island variation and taxonomy of Seychelles Trachylepis. University Museum of Zoology, Cambridge. African Journal of Herpetology, 54(1), pp 31-42.
15) Gibbons D.W. & Gregory R.D. (2005). Birds. In: Sutherland. 2nd edition. Cambridge University.
16) HIV/ AIDS Policy, 1992. Uganda
17) International Finance Corporation (2012). Biodiversity Conservation and sustainable management of living natural resources. International Finance Corporation, World Bank group.
18) International Finance Corporation. (2007). Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets. Available at https://www.ifc.org
19) International Union for Conservation of Nature. (2020). IUCN Red List of Threatened Species. Version 2020-1. Available at: www.iucnredlist.org (Accessed 20/2/2020)
20) Kwiringira, Japheth & Ariho, Paulino & Zakumumpa, Henry & Mugisha, James & Rujumba, Joseph & Mugisha, Marion. (2019). Livelihood Risk, Culture, and the HIV Interface: Evidence from Lakeshore Border Communities in Buliisa District, Uganda. Journal of Tropical Medicine. 2019. 10.1155/2019/6496240.
21) Land (Amendment) Act, 2010. Uganda
22) Land Act, Cap 227, 1998. Uganda
23) Local Governments Act, Cap 243, 1997. Uganda
24) Ministry of Lands, Housing and Urban Development. (2019). Detailed Design Report for Buliisa Town Council and Butiaba Subcounty Tarmac and Gravel Roads

25) Ministry of Lands, Housing and Urban Development. (2019). Feasibility Study and Preliminary Design Report for Batch 2 Tarmac Roads in Buliisa Town Council and Butiaba;
26) National Draft National Air Quality Standards, 2006. Uganda
27) National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003. Uganda
28) National Environment (Environmental Impact Assessment) Regulations, 1998. Uganda
29) National Environment (Noise Standards and Control) Regulations, 2003. Uganda
30) National Environment (Waste Management) Regulations, 1999. Uganda
31) National Environment Act No 5 of 2019. Uganda
32) National Environment Management Policy, 1994. Uganda
33) National Fisheries Resources Research Institute and National Environment Management Authority, (NaFIRRI). (May 2012). Report of the frame survey of Lake Albert.
34) National Fisheries Resources Research Institute (NaFFRI), 2018, National Report of the Frame Survey on the Ugandan side of Lakes Edward and Albert
35) National Gender Policy, 1997. Uganda
36) National Water Policy, 1999. Uganda
37) Occupational Safety and Health Act, 2006. Uganda
38) Odum, E. P. (1985). Trends expected in stressed ecosystems. Bioscience 35, pp 419-422
39) Byakagaba P and Twesigye. B. (2015). Securing Communal Land and Resource Rights in the Albertine Region of Uganda: The Case of Hoima and Buliisa Districts
40) Public Health Act, Cap 281, 1935. Uganda
41) Savage, J. M. (1992). Classifying amphibians and reptiles. Pp. 19-23.
42) Schiotz, A., Cogger & R. G. Zweifel. (1972). The Tree frogs of Eastern Africa. 25, pp 1-346.
43) Stevenson, J. and Fanshawe, J. (2002). Field guide to the birds of East Africa Kenya, Tanzania, Uganda, Rwanda, Burundi.
44) Uganda Bureau of Statistics. (2014). National Population and Housing Census
45) Uganda National Land Policy, 2013. Uganda
46) United Nations Development Programme, 2006. Human Development Report 2006; Beyond scarcity: *Power, poverty and the global water crisis*
47) Uganda Population-Based HIV Impact Assessment, 2016
48) Water Act, Cap 152, 19917. Uganda
49) Wessels, K.J., van Jaarsveld, A.S., Grimbeek, J.D. & van der Linde, M.J. (1998). An evaluation of the gradsect biological survey method. *Biodiversity and Conservation* 7, pp 1093-1121.
50) Wildlife Conservation Society (2016). National red list for Uganda for the following taxa: mammals, birds, reptiles, amphibians, butterflies, dragonflies and vascular plants. Available at: www.nationalredlist.org/files/2016/03/National-Redlist-for-Uganda.pdf (Accessed 9/7/2019).
51) Wildlife Conservation Society (2008): Petroleum Potential of the Albertine Graben, Uganda.
52) Wildlife Conservation Society. (2016). Nationally Threatened Species For Uganda
53) Wildlife Conservation Society. (2016). Uganda National Red list
54) Workers' Compensation Act, 2000. Uganda

55) https://www.unma.go.ug/index.php/climate/seasonal-forecast/document/39-march-to-may-2020-seasonal-rainfall-outlook-over-uganda/23

12. APPENDICES

Appendix I: NEMA Approval conditions of ToRs

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

NEMA House
Plot 17,19 & 21, Jinja Road.
P.O.Box 22255, Kampala, UGANDA.

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NEMA/ 4.5

30th March, 2020

The Permanent Secretary,
Ministry of Lands Housing and Urban Development,
P.O. Box 7096,
KAMPALA.

Tel: +256 414 342931/3

RE: TERMS OF REFERENCE AND SCOPING REPORT FOR THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED UPGRADE OF SELECTED ROADS (12.07km) IN BULIISA TOWN COUNCIL AND BUTIABA TOWN COUNCIL, BULIISA DISTRICT (UNDER THE ALBERTINE REGION SUSTAINABLE DEVELOPMENT PROJECT).

Reference is hereby made to the submission to this Authority of the Scoping Report and Terms of Reference (ToR) for carrying out an Environmental and Social Impact Assessment for the above referenced project, for review and consideration for approval.

This Authority has reviewed the Terms of Reference and Scoping Report and found them adequate to address the environmental concerns associated with the project. In addition to the environmental and social aspects identified and the scope of work outlined in the ToR, you are required to ensure that the team of consultants that is to conduct the Study, covers the scope of work in a comprehensive manner; and, should be Registered and Certified Environmental Practitioners in line with National Environment (Conduct and Certification of Environmental Practitioners, Regulations, 2003.

Furthermore, you are advised to ensure that adequate stakeholder consultation is undertaken during the conduct of ESIA, involving among others, the Department of Occupational Health and Safety (Ministry of Gender, Labour and Social Development), Ministry of Works and Transport, Wetland Management Department and Directorate Of Water Resources Management (Ministry of Water and Environment), the concerned local communities flanking / adjacent to the project area, and Buliisa District Local Government Authorities amongst others; and, ensure that evidence of stakeholder consultations is appended to the ESIA report.

Page 1 of 3

The key aspects highlighted below should also be considered during the study.

(a) Provide detailed description of the project design and all technical aspects, and indicate whether the proposed project will be implemented in phases or not.

(b) Ensure that a comprehensive baseline information related to the project affected areas is provided.

(c) Carry out modelling of noise, vibrations and particulate dispersion in order to establish the extent of influence of the noise, vibrations and dust emissions from the project operations on the environment. Also append the water, air quality and noise levels analyses results from project activities and water, relating to the project-affected areas onto the ESIA report.

(d) Conduct a biodiversity assessment on fragile ecosystems adjacent including Lake Albert and / or to be traversed by the project and ensure that evidence of the study is appended to the ESIA report.

(e) Provide and append a list of all project affected persons identified within the confines of the areas that will be affected by the project activities.

(f) Provide a full geographical description of the area (boundaries including the area to be directly affected by the project) to be affected by the proposed action and a set of GPS coordinates. This should also include well labeled maps and illustrations covering the whole area to be affected to enable this Authority make an informed decision about the proposed project (preferably on A-3 paper size).

(g) Provide details of the various components of the project and activities covering both the construction and operational phases of the project, including information on sources, types of construction materials and locations of sites the construction material will be extracted from; as well as location of the temporary worker's camp and storage /parking yard.

(h) The ESIA study should incorporate the materials to be used for construction and their effect on the water quality of the water sources to be traversed by the road and the measures that will be put in place to avoid oil spillages during construction; hence an outline of oil spillage contingency or management plan should be provided in the ESIA report. The study should also state the management and disposal of the cut to spoil arising from the road construction.

(i) Ensure that comprehensive/detailed evaluation of the potential environmental and social impact associated with the project components and activities, is provided as well as comprehensive mitigation and environment management and monitoring plans (preferably in table matrices format) to cater for the identified significant environmental impacts and risks, respectively.

(j) Indicate the actual total project (investment) cost including costs of works, machinery/equipment and land where applicable.

This is therefore, to issue formal APPROVAL of the Scoping Report and ToR, and to recommend that you proceed with carrying out of the ESIA for the proposed project.

Note that approval of the ToR does not constitute permission to start project implementation. This is NOT a Certificate of Approval.

We look forward to your cooperation and receipt of copies of a comprehensive ESIA report, for our further action.

Leila Akello Gonasa
FOR: EXECUTIVE DIRECTOR

C.C. Eng. Lammeck Kajubi,
ESIA Team Leader,
Tel.: 0712 403357 / 0782580480
Email: l.kajubi@awe-engineers.com

Appendix II: Recods of Stakeholder Consultations

Meeting 1: Ministry of Local Government

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Ministry of Local Government **27.03.2020** **Compiled by:** GB, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		

Name of Stakeholder: Mr. Masereka Julius
Position/Title: Principal Urban Officer
Contact: +256 772 506 345

Aspect	Concern
Role of Local Councils in project implementation	Local councils play a major role in successful implementation of projects since they are the point of entry into the community. These should be actively involved in the project at all stages since they are key in lobbying support of the community, mobilizing and are effective at information dissemination at the grassroot. It is therefore important that they are updated on project progress, and that the contractor's workers are registered with C1s in every village traversed by the roads.
Mobilization of the community economic development	The project should work as a mobilization strategy to community development. In order to gain community support and project ownership, information dissemination during project implementation should point the community to the bigger picture of local economic development.
Skills development and continuity	Road construction will employ a number of workers from various parts of the country but also the local labour from areas traversed by the project roads. For continuity, the project should consider awarding certificates at the end of construction, to local laborers that participate in the construction projects and excel in various works to enable them transfer the skills acquired to other projects.
Waste management	Road construction activities will generate waste that needs to be disposed off in a sanitary manner. the contractor should work together with the respective town

	councils to disseminate IEC material on waste management during construction. Post-construction, the town councils and District environment office should take this role and consider procuring waste bins that should be placed along the project roads with messages such as “Keep Buliisa Town clean” to ensure that the new roads are not littered.
Climate change	Road construction has the potential of clearing trees along the roads. It is important that the project incorporates tree planting especially ornamental trees that can withstand the climatic conditions of the area
Obscene language	Construction workers are fond of using obscene and vulgar language during construction activities. The proposed roads traverse urban centers that have relatively high populations, in addition, these roads traverse both primary and secondary schools. It is possible that if obscene language is used by workers, it can be easily adopted by school going children and infiltrate the community thus deteriorating moral values of the society.
Compensation issues	As a result of the ongoing oil and gas prospects in the Albertine region, communities in the area have high expectations from all development projects regarding compensation. Communities should be sensitised extensively to make them understand and appreciate that projects are aimed local economic development and so the community should focus on the long-term benefit.

Meeting 2: Petroleum Authority of Uganda (PAU)

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** PAU **16.03.2020** **Compiled by:** GB, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		

Aspect	**Concern**
Stakeholder engagement	Identified key project stakeholders should be engaged right from project conceptualisation stage throughout project implementation.
Project area jurisdiction	There is need for project stakeholders and development partners to harmonise ProJet are jurisdiction
Community expectations	Community expectations are high in terms of compensation for any development project in the area. If land take issues arise on the project, these should be handled in the right procedure.

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Petroleum Authority of Uganda - PAU				
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓	
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date: 16th / 06 / 2020					
Project name: ESIA for Batch 2 Sub-Projects (Roads & Renovation of Offices.					
Proponent: Ministry of Lands, Housing and Urban Development.					

Name of person met:	F/M	Designation	Contact (Tel)	Sign/ initial
Ronald Anguyiko	M	Environment Engineer	0759467372	[signature]
Samson Okot	M	Environment officer Biodiversity	0778789426	[signature]
Jane Byaruhanga	F	Manager Environment	0784812448.	[signature]
Grace Baalikowa	F	gbaalikowa@gmail.com	0782409889	[signature]
Dinah Ahimbisibwe	F	Environmentalist	0777725657	[signature]

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Meeting 3: Buliisa District

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Buliisa District **12.02.2020** Buliisa district offices **Compiled by:** GB, AD, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer and Self-Introduction** **2. Welcoming remarks from the DEO** **3. Remarks by CAO** **4. Communication from the consultant** **5. Discussion A.O.B and Closure**	
1. Prayer	The opening prayer was led by Titus of the district and this was followed by self-introduction of the ESIA team and District officials	
2. Welcoming remarks from the DEO	Mr. Tumusiime Rogers, the District Environmental Officer welcomed AWE team and the district officials for attending the meeting. He gave a brief background of the project and the ESIA assignment, highlighting that the consultant had engagements with the district officials during the scoping phase in January and the views raised together with sire reconnaissance guided in the development of Terms of References for the study.	
3. Official remarks from the CAO	Mr. Agondua Nixon Rhoney; the district CAO welcomed the team from AWE appreciating them for the continuous engagements during the study. He urged the consultant to be clear and cautious when disseminating project information to the community as experience has shown that communities in the area are found of denying issues at later stages when they realise that they do not benefit directly.	
4. Communication from the consultant	The team leader for the study, Eng. Lammeck Kajubi thanked the district members for their continued support for the project and the ESIA study from inception and scoping phase.	

	He gave a recap of the assignment and the stages in which the assignment is being undertaken, highlighting that the outcome of the previous engagement was a scoping report and Terms of Reference that are guiding the detailed ESIA study. He also mentioned that during the previous engagements, district officials highlighted a few impacts anticipated during project implementation and pointed out that part of the purpose of the meeting was to further discuss these impacts and more, there graveness and to propose measures that should be implemented to mitigate them. The team leader request district CAO to appoint a district official to support the ESIA team during the studies in the absence of the project focal person who was away for officer duties; the District Environment Officer (Mr. Tumusiime Rogers) was assigned the responsibility.
5. Discussion	**Discussion** Impact on flora; during construction activities, some trees might be destroyed along the road. Recommendation: the project should consider provision of Tree seedlings to the land owners to replant after construction activities Impact on fauna; speed humps should be installed to reduce speed of vehicles to avoid killing crossing animals. The contractor should limit clearance to the designated areas. Regarding cattle, the contractor should install "cattle crossings signs" along the roads. Wats management; the district does not have gazetted sites for waste disposal. the contractor should have a system of collection and storage of wate on site, and should engage a wate handling company to undertake regular transportation and disposal of waste to sites such as landfill in the neighbouring areas of Hoima. Timing; the project is being implemented in a political period. All parties involved in information dissemination should be cautious as politicians tend to "own" such projects and use them to solicit for votes, often twisting information to their favour. Soil and water resource contamination; the contractor should provide proper drainage around workshops and all auxiliary facilities especially worker's campsite to drain off oils.
A.O.B and Closure	Meeting was adjourned by the CAO there being no further issues.

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	BULIISA DISTRICT				
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓	
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date: 12.02.2020					
Project name: ESIA Study for ARSDP Batch 2 Roads					
Proponent:					

Name of person met:	F/M	Designation	Contact (Tel)	Sign/ initial
AGONDUA NIXON RHONEY	M	f CAO	0783480957	[signature]
BARUGAHARA B.A.	m	DCAO	0772372098	[signature]
Mulebeki Lydia	F	DPP for DNARO	0781398957	[signature]
SABITI TITUS	m	PRINCIPLE ENVIRONMENTAL HEALTH OFFICER	0777318449	[signature]
BYARUHANGA ROGERS	m	P. D/Planner	0782045446	[signature]
BABIHOMMGO DOREEN	F	DAO	0775483991	[signature]
KATUSABE UTRHA	F	RSWO BDLG	0772392428	[signature]
WAKAME MAURICE	M	DWO / Ag DE BDLG	0783002785	[signature]
ALINAITWE MARIA	M	VCO / FOR DEO	0787266186	[signature]
TUMUSIIME Andrew	M	AEO BDLG	0774635735	[signature]

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Meeting 4: Buliisa Town Council

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Buliisa Town Council **12th 02 2020** Buliisa Town council offices **Compiled by:** GB, AD, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer and Self-Introduction** **2. Welcoming remarks from the Town Clerk** **3. Remarks by LCIII Chairperson** **4. Communication from the consultant** **5. Discussion A.O.B and Closure**	
1. Prayer	The opening prayer was led by the physical planner and this was followed by self-introduction of the ESIA team and Town council officials	
2. Welcoming remarks from the Town Clerk	The Town Clerk welcomed the team and commended them for the continuous engagement in the studies from the scoping phase and the detailed studies. He urged the team to also engage the communities traversed by the roads to also collect their views and suggestions since they are the direct beneficiaries of the project and its success is largely hinged to their cooperation and support.	
3. Official remarks from the LCIII chairperson	The LCIII chairperson of Buliisa Town Council also welcomed the team from AWE appreciating them for the continuous engagements during the study. He pledged support to the project and urged the consultant to engage the community as well.	
4. Communication from the consultant	The team leader for the study, Eng. Lammeck Kajubi thanked the Town council officials for their continued support for the project and the ESIA study from inception and scoping phase. He gave a recap of the assignment and the stages in which the assignment is being undertaken, highlighting that the outcome of the previous engagement was a scoping report and Terms of Reference that are guiding the detailed ESIA study. He also mentioned that during the previous engagements, Town council officials highlighted a few impacts anticipated during project implementation and pointed out that part of the purpose of the meeting was to further discuss these impacts and more, there graveness and to propose measures that should be implemented to mitigate them.	

	The team leader requested the Town Clerk to assign an officer to support the team in the studies and coordinate the mobilisation of the community members in the respective cells through the LC1 chairpersons. This responsibility was given to the CDO; Mr. Ahuura Robert who would coordinate all councillors and LC1 Chairpersons in preparation for the meetings of communities especially along the project roads.
5. Discussion	**Discussion** The Town Council and district at large do not have gazetted waste disposal sites. The contractor should implement a waste management plan that describes procedure for collecting and disposing off waste. For hazardous waste, the contractor should hire a waste handler to manage the disposal The component of road safety should be incorporated in the project especially during construction. Sensitizations of the community on road safety should be conducted. Experience from past and ongoing construction projects shows that during culvert construction, the bumps are left too high for some days before levelling and this has caused a lot of complaints from the community, who at times think that is the final level of the road. The contractor should continuously engage the community on such activities, but also provide good levels to prevent accidents on the road due to high bumps. The contractor should maintain the roads used in transportation of material. Usually they are damaged by heavy trucks ferrying material and so they should not be left in a poor state after use. Dust generated during construction greatly affects community members especially road roadside business. The contractor should ensure he sprinkles water on the roads to suppress dust. Injurious damage to property during road construction should be compensated for through the right procedures To gain support from the community for the project and also foster project ownership, the local community should be given priority during recruitment especially for casual labourer and equal opportunity should be given to women and men. Skilled labour is also available in the Town council so the contractor should utilise it to create a good relationship from the community and also improve their livelihood. Occupational health and safety pf workers should be treated with importance. Workers should be given the appropriate PPE. The contractor should employ a community liaison officer to bridge the gap between the community and the contractor

	When sourcing construction material especially murrum, the contractor should sign agreements with the land owners and these should emphasise restoration of these sites after use. The land owners should be paid adequately and on time.
A.O.B and Closure	Meeting was adjourned by the CAO there being no further issues.

Photographs of the meeting

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	BULIISA TOWN COUNCIL				
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**		
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date:	12.02.2020				
Project name:	GUIX STUDY FOR ARSDP BATCH 2 ROADS				
Proponent:	MINISTRY OF LAND, HOUSING AND URBAN DEVELOPMENT.				

Name of person met:	F/M	Designation	Contact (Tel)	Sign/ initial
MUESIGWA TOM	M	CHAIRPERSON L-C III	07777818532	
BUSINGE GODFREY	M	TOWN CLERK	0772860459	
Bamutura Charles	M	SAA/ Environ. Incharge	0772-24872	
ABIDRA BENSON	M	L.E.O.B TC	0775545824	
OKUTI FRIDAH	F	HRO	0779403027	
KUSEMERERWA SUSAN	F	Senior Assistant Town Clerk	0782995016	
ASIIMWE MAXWELL	M	Physical Planner	0782110891	
MWAKALI MAGELLAN	M	HEALTH INSPECTOR	0779268694	
TUMUSIIME DARIOUS	M	ENGINEER-CIVIL	0784805655	
AYUHAIRWE FILLOMAS	F	AATO	0787680786	

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder: BULIISA TOWN COUNCIL					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓
	Sensitisation			**RAP**	
	Environmental Audit			**Other (specify)**	
Date: 12.02.2020.					
Project name: ESIA STUDY FOR ARSDP BATCH 2 ROADS					
Proponent: MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT					
Name of person met:		**F/M**	**Designation**	**Contact (Tel)**	**Sign/ initial**
Wandera Moses		M	Treasurer	0774085110	
AHURRA ROBERT		M	CAO	0785979991	
MUKISIGWA TOM		M	CHAIRPERSON LCIII	0777818532	

Meeting 5: Butiaba Town Council

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Butiaba Town council **14.02.2020** **Butiaba Town council** **Compiled by:** GB and DA	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer and Self-Introduction** **2. Welcoming remarks from the chairperson/SAS** **3. Remarks from the CDO** **4. Communication from the consultant** **5. Discussion by members present** **6. A.O.B and Closure**	
1. Prayer	The opening prayer was led by the Assistant fisheries specialists Byensi Gilbert and this was followed by self-introduction of the consultancy team and Subcounty members present by identifying their roles and responsibilities.	
2. Welcoming remarks from the SAS/ Chairperson of the meeting	The SAS welcomed the consultant to Butiaba sub county/ Town Council. Welcomed and appreciated the responsibility taken by the consultancy to organise and come for the meeting welcoming his fellow members from the subcounty and called for their participation during the engagement Enlightened them more about the project, mentioning that this is batch 2 of the project that they had earlier worked on, specifying the different roads to be upgraded under batch 2.	
3. Remarks from the CDO	The CDO welcomed the consultant to the Town council and appreciated them for keeping time	
4. Communication from the consultant	The sociologist thanked the officials for attending the meeting. She gave a recap of the assignment and the stages in which the assignment is being undertaken, highlighting that the outcome of the scoping phase was a scoping report and Terms of Reference that are guiding the detailed ESIA study. She then highlighted that the meeting was aimed at identifying impacts of the proposed project activities and collecting views and suggestions on possible mitigation measures. She requested the Chairperson to appoint a focal person to accompany and support the team during the studies and coordinate mobilization of community engagements and this responsibility was given to the CDO.	

	Discussion
5. Open discussions by members present	**CDO (Alituha Fredrick):** - Advocated for repairing of damaged during construction that are not part of the project - Sensitisation of community members and project workers before during construction contractors, engaging of local health workers in the sensitisation regarding communicable diseases such as HIV/AIDS and other STIs. - Focus on improving economic activities of the area e.g. fishing being the main economic activity in Butiaba, influx of people in the community may increase the demand for fish thus pushing the fishermen to engage in poor fishing method such as use of illegal fishing gear in order to satisfy the demand **Town Clerk (Kaijakubi Godfrey Busigye):** - Minimise the time frame of the project - sensitisation of community members especially parents and strict laws against child labour - Minimise vibration during construction to limit effect on already existing structures **Wabyona Julius:** - Influx of people also increasing wastes in the community; the contractor should have a Waste management plan to guide waste management at all sites - The contractor's workers should respect the culture of the communities.
A.O.B and Closure	Meeting was adjourned with the chairperson LCIII emphasising cooperation of Town council officials with all project teams for successful project information

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder: BUTIABA TOWN COUNCIL / SUBCOUNTY					
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓	
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date: 14th / 02 / 2020					
Project name: ESIA for ARSDP Batch 2 Project					
Proponent: Ministry of Lands, Housing and Urban Development.					

	Name of person met:	F/M	Designation	Contact (Tel)	Sign/ initial
1	Kaijakubi Godfrey Businge	M	SAS / TC	0774952425	[signature]
2	ALITUHA FREDERICK	M	CDO / PARISH CHIEF	0772887130	[signature]
3	Balikenda Naphtali	M	Fisheries Officer	0718503228	[signature]
4.	WABYONA JULIUS	M	COMM. Peri Litator	0770773536	[signature]
5	BYENSI GILBERT	M	Ass. Fisheries Officer	0775239313	[signature]
6	ALINAITWE UNICE	F	APIC	0778106845	[signature]
7.	LWANGA ARNOLD JOB	M	DATA ANALYST	0782184878	[signature]
8	NANGOYE EDWARD RICHARD	M	AWE ENUMERATOR	0712246905	[signature]
9	ATUHAIRWE MORLEEN	F	Health Assistant	0789119673	[signature]
10	KARUNGI MUGISA	F	SECRETARY	0787873199	[signature]

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	BUTIABA TOWN COUNCIL/SUBCOUNTY				
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓
	Sensitisation			**RAP**	
	Environmental Audit			**Other (specify)**	
Date: 14/05/2020					
Project name:	EIA study for KRSNP Batch 2 Project.				
Proponent:	Ministry of Lands, Housing and Urban Development.				

Name of person met:	F/M	Designation	Contact (Tel)	Sign/ initial
Hon Mugenyi Mathias	M	C/P Butiaba S/County	0772934663	
David Kalenzi	M	AWE	0752657384	
RHONAH CHRISTINE NASSOZI	F	AIR WATER EARTH LIMITED	0784488422	

Meeting 6: Cultural leaders (Bunyoro Kitara Kingdom and Bugungu Heritage Information Centre)

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Cultural Leaders **16.02.2020** **Compiled by:** GB, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		

Aspect	Concern
Chance finds	In case of chance finds especially exhumation of human remains, whose markings are invisible and couldn't be identified during the cultural assessment, engagement with the affected persons and cultural elders should be undertaken for these to be relocated in an appropriate manner
	As much as no known cultural heritage sites or features are known along the roads to be upgraded, road construction could impact on resources during sourcing or transporting materials. In this case, clan leaders should first be consulted.
Community awareness creation	The District Community Development Officer is the cultural representative at the District and should thus incorporate cultural awareness in his routine community engagements.
Workers' Sensitization and awareness creation	The district should ensure sensitisation of the contractor and workers to create awareness of the possible existence of such remains and the procedure to be followed in case they are encountered.
Continuous community engagement by the contractor	The contractor should, prior to commencement of works on any road, engage the community to reaffirm the absence of any features of cultural importance. It has been observed in the area that whenever construction works begin, people come up claiming existence of features that were not mentioned of during the studies in anticipation of compensation.

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Elders Meeting (Bunyoro Kingdom & Bugungu Cultural Heritage)				
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓
	Sensitisation			**RAP**	
	Environmental Audit			**Other (specify)**	
Date:	16th Feb 2020				
Project name:	Albertine Region Sustainable Development Project ESIA - BATCH 2 RC				
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.				

Name of person met:	F/M	Designation	Contact (Tel)	Sign/ initial
1. David Kalanzi	M	AWE-Culture	0752657384	
WAKIIMOTI ALEX	M	CLAN CULTURAL LEADER	0787136595	
Mugasa Blasio Atwooki	M	Culture	0776607377	
KAGOLE MARGRET B	F	Culture	0782257885	
KIIZA KILSON	m	AWE-CH	0757725763	
MUTUMUZA RAMON	m	Bugungu Heritage	0779648024	
ALINAITHE BIANAH	F	Secretariat - AWE LTD	0777725651	
Eng. Dr. LAMMECK KATUBI	M	Team Leader - ESIA	0782584[illegible]	

Meeting 7: Buliisa Parent's Association of Children with Disabilities (BUPACD)

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** BUPCD **17.03.2020** **Compiled by:** GB, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		

Aspect	Concern
Community attitude	Community attitude towards PWDs is still poor and as a result, PWDs are often scared to come out and request for help. The project should incorporate an element of sensitization and awareness creation of the community on inclusiveness of PWDs.
Accidents to school children	Most of the roads in the Town Councils are along the road and many of them do not provide lunch to the pupils. This means that some of them have to go back home for lunch and it is likely that at such times, construction activity is at the peak. This exposes children with disabilities to risks of accidents especially since they may not cross the roads as quickly as their counterparts. Humps should thus be installed close to schools to reduce speed of vehicles.
Sensitization of workers	The contractor should sensitize workers especially truck drivers on speed control and should observe a speed limit of 40 km/hr.
Road safety	Zebra crossings should be incorporated in the designs close to schools and sign posts indicating "children crossing" areas should be installed.
	The project should intensify community sensitization on road safety as many people in the town councils have never seen Tarmac roads and so may end up over speeding and causing accidents when the road is completed due to excitement caused by driving or riding on a Tarmac road
	The project should incorporate road safety sensitizations in schools since in most schools, children walk to school. Information and sensitization material should be designed to cater for children with disabilities e.g. use of sign language.
Employment opportunities	During recruitment of project workers, the contractor should give opportunity to PWDs that have capacity to do casual work, office work and others if they have the required skills and qualification. Recruitment should not discriminate against PWDs but should be conducted in an inclusive manner
Accessibility of PWDs	The structures within the camp should provide for ease of accessibility by PWDs e.g. ramps should be provided.

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder: BULIISA DISTRICT UNION OF PEOPLES WITH DISABILITIES / BUPACD.						
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date: 17/02/2020.						
Project name: ESIA study for ARSDP Batch 2 Roads.						
Proponent: Ministry of Lands, Housing and Urban Development.						
Name of person met:		**F/M**	**Designation**		**Contact (Tel)**	**Sign/ initial**
MUUNI STEPHEN		M	BUPACD FOCAL PERSON		0777426760	
ATESIGA ALLAN		M	BUDIP office attendant		0772395989	

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Meeting 8: Nyapea and Kizikya cells

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Nyapea and Kizikya cells **17.02.2020** **Community hall** **Compiled by:** GB and DA	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer** **2. Self-Introduction** **3. Welcoming remarks by the chairperson** **4. Remarks by CDO** **5. Communication from the consultant** **6. Discussion by members present** **7. A.O.B and Closure**	
1. Prayer	The opening prayer was led by a member of Nyapea cell and this was followed by self-introduction of the consultancy team and community members present identifying their cells	
2. Welcoming remarks from the chairperson	The chairperson LC1 of Civic cell thanked the community for turning up in large numbers for the meeting and thanked AWE for considering to consult the community	
3. Remarks from the CDO	The CDO of Buliisa Town Council thanked the community for turning up for the meeting. He emphasised that the first entry of the project is through the community and thus urged the community members to always endeavour to attend meetings when called upon in order to participate an contribute to proposed development in the area.	
4. Communication from the consultant	The sociologist thanked the LC1, CDO and local leaders for welcoming them and the support provided while organising the meetings and for turning up for the meeting. She gave a brief description of the assignment highlighting the completed phase (scoping) which guided the development of terms of reference that are in turn guiding the study. She then gave an insight of the project to the community, including the project roads and the purpose of the meeting	
Discussions	**Recommendations by community**	
	i) Employment; there are able youths and other members of the community that can take part in the construction works. The contractor should thus give them first priority during recruitment.	

	ii) The workers, especially those sourced locally should be paid adequately and fairly iii) The contractor should sprinkle water on dusty roads to suppress dust iv) The contractor should sensitize workers especially truck drivers on speed control to avoid accidents v) The ESIA report should be made available to the local leaders and the community; and these should also be part of the monitoring team to ensure all measures proposed during consultations and studies are implemented by the contractor vi) The contractor should be made aware of the road user committees and should ensure that he cooperates with them vii) A grievance management committee should be elected to manage community complaints relating to project activities.
A.O.B and Closure	Meeting was adjourned with the chairperson who thanked members present for their participation and called upon all the leaders present to work hand in hand with the consultation team during their local engagement with the communities.

Photographs of Meetings

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Eastern Ward NYAPEYA Village					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:	17/02/2020					
Project name:	ESIA STUDY FOR ARSDP BATCH 2 ROADS					
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
KUGAONZA Moreen	F	NYAPEYA	—	KUGAONZA
Nsunguza Edisa	F	NYAPEYA	—	
AHEBWA LOVIS	F	NYAPEYA	—	
Kabasindi Grace	F	NYAPEYA	—	Grace
Kagole Grace	F	NYAPEYA	—	Grace.
Kabagenyi Magrate	F	NYAPEYA	—	Magrate
KUBEMEREWA HARRIET	F	NYAPEYA	-	KH
Blessed Frod	M	NYAPEYA	0774258424	

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Eastern ward (NYAPEYA, KIZIKYA CELLS					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:	17/02/2020					
Project name:	ESIA STUDY FOR KRIDP BATCH 2 ROADS.					
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					

	Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
01-	KAJAKURA JIMMY	M	KIZIKYA	0782391674	
02-	NTAHWETE HITLER	M	NYAPEYA	0787045301	
03-	TIBISIKIA PETER.	M	KIZIKYA	0789099357	
04-	Wandera .C. Mukobi	M	KIZIKYIA	0787879800	
05-	KUGONZA SAMUEL	M	NYAPEYA CELL	0774559299	
06-	WANDERA ALEX	M	NYAPEYA CELL	—	Wandera
07-	KYALISIMA LILIAM	F	KIZIKYIA	0773478837	
08-	Mukonyezi GERALD	M	Nyapea Cell	0785039020	
09-	Karoga Kahera	M	KIZIKya	—	
10	RWAHWIRE SELEMOTH	M	KIZIKYA CELL	0775337754	

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Eastern ward NYAPEYA VILLAGE.					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:	17/02/2020					
Project name:	ESIA STUDY FOR KRSDP BATCH 2 ROADS.					
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
MWAKALI ISAAC	M	NYAPEYA	0784687780	
MUDIIRA MORRIS	m	NYAPEA	0773726312	
KAZANLA KILLIAM	m	NYAPEYA	0777553166	
KISEMBO STEPHEN	M	NYAPEYA	0774885165	
KYAMANYWA GILBERT	M	KIZIKYA	0788345677	
MUGISA OBERT	M	NYAPEYA	0771034273	
TUMUSIIME MOREEN.	F	"	0771957144.	
KWENIKE MERID	F	"	0788423074.	
KYAWGONZA MARY	f	NYAPEYA	0775364662	
KISEMERORWA MADELINE.	f	NYAPEA		

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Community Engagement - Akollo Village				
Purpose of consultation (*tick appropriate box*):	Scoping		ESIA	✓	
	Sensitisation		RAP		
	Environmental Audit		Other (specify)		
Date: 17/02/2020					
Project name: ESIA Study for ARDSP Batch Road					
Proponent: Ministry of Lands Housing and Urban Development.					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
Rugungeza Harbert	M	AKOLLO	0779253050	R/b.
ONGEIRWOTHI FERDINUT	M	AKOLLO	0786945574	[signature]
RUGONGEZA JACKSON	M	AKOLLO LOWER	0775869857	[signature]
KISEMBO GODFREY	M	AKOLLO	0776907665	[signature]
RUGONGEZA JULIUS	M	AKOLLO LOWER	0775309810	[signature]
ASIIMWE WILLIAM	M	AKOLLO UPPER	0783036963	[signature]
KASANGAKI ANNKLET GALUSO	M	AKOLLO UPPER	0784204331	
wamara numin	M	AKOLLO LOWER	0703838141	[signature]
Tahaya Kyanda	M	AKOLLO UPPER	- - - -	K. B.
KATO JACOB	M	AKOLLO UPPER	- -	K.J

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Butiiso Sub County - KIJANGI VILLAGE				
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓	
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date: 13/feb/2020					
Project name: ESIA study for ARSDP Batch 2 Roads					
Proponent: Ministry of Lands, Housing and Urban Development					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
MBIHYA Gilbert	M	C/man RUC.	0773340013	[signature]
KABANGAK DAVIS	m	member R.V. C NYAPEYA	0777459120	[signature]
BUSINGE GODFREY	m	NYAPEYA	0782866448	[signature]
PETER GEOFREY	m	Kijangi	0785763852	[signature]
Atuha Topista	F	Bugana	0787052976	Topista
Kyomanywa Efrida	M	Kijangi	—	[signature]
Kiiza Berard	M	Kijangi	0778231583	[signature]
MPAIRWE DAVID	m	Kijangi	0779402959	[signature]
AGABA WILFRED	M	Kyangi	0781014693	[signature]
BIIADWA KENNETH	M	"	—	[signature]

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Meeting 9: Kityanga and Kitahura

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Kityanga and Kitahura cells **17.02.2020** **Community hall** **Compiled by:** GB and DA	Consultant: **AIR WATER EARTH (AWE) Ltd.**
Agenda;	**1. Opening Prayer** **2. Self-Introduction** **3. Welcoming remarks by the chairperson** **4. Remarks by CDO** **5. Communication from the consultant** **6. Discussion by members present** **7. A.O.B and Closure**	
1. Prayer	The opening prayer was led by one of the community members and this was followed by self-introduction of the consultancy team and community members present identifying their cells	
2. Welcoming remarks from the chairperson	The chairperson LC1 of Kitahura cell thanked the community for turning up for the meeting and urged them to actively participate and support all project activities. He thanked AWE for consulting the community and requested that such engagements continue throughout the project lifetime.	
3. Remarks from the CDO	The CDO of Buliisa Town Council thanked the community for turning up for the meeting and emphasised the need for environmental conservation in implementing development projects.	
4. Communication from the consultant	The sociologist thanked the LC1, CDO and local leaders for welcoming them and the support provided while organising the meetings and for turning up for the meeting. She gave a brief description of the assignment highlighting the completed phase (scoping) which guided the development of terms of reference that are in turn guiding the study. She then gave an insight of the project to the community, including the project roads and the purpose of the meeting	
Discussions	**Discussion**	

	i) The contractor should hoard off schools along the road to enable pupils concentrate in class **ii)** Contractor should conduct sensitization and road safety awareness campaigns in schools. iii) The current road committees are not being engaged by the contractor. If road committees are to be formed for the project, the contractor should be made aware of their existence, roles and should cooperate with them. iv) Local communities in the cells traversed by the roads should be given first priority during recruitment so that they directly benefit from the project. Contracts should be issued to workers and the provisions should be adhered to and workers should be paid fairly and on time. v) During installation of culverts, the gradient should be reduced to avoid accidents vi) Murrum heaps should not be left on the road, it should be spread at the end of the day to avoid causing accidents to road users especially at night
A.O.B and Closure	Meeting was adjourned with the chairperson who thanked members present for their participation and called upon all the leaders present to work hand in hand with the consultation team during their local engagement with the communities.

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	WESTERN WARD - KITYANGA & KITAHURA				
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓
	Sensitisation			**RAP**	
	Environmental Audit			**Other (specify)**	
Date:	17.02.2020				
Project name:	ESIA STUDY FOR KRSDP BATCH 2 ROADS				
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT				

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
MUHANGI K. ISAIAH	M	KITYANGA CELL	0772391334	
JOY BUSINGE	F	Kitahuura	0779949174	Joy
Wandera Knight Annet	F	Kitahura	0787879800	
ZAAKI HERBERT	M	KITAHURA-CELL	0775959840	
MUGABO MICHAEL	m	KITAHURA CELL	0775756811	
Ali Junaki John	M	KITAHUHA CELL	—	
Mangura Arataini	M	Kitahura cell	0774900349	
MUGUNGA GODFREY	M	KITAHURA CELL	0787051232	
PIGHO JOHN	m	kitahura Cell	0789748720	
BUSINGE NELSON	M	Kitahura Cell	0779949174	

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	WESTERN WARD – KITYANGA & KITAHURA					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:	17.02.2020					
Project name:	ESIA STUDY FOR KRUDP BATCH 2 2020					
Proponent:	MINISTRY OF LANDS HOUSING AND URBAN DEVELOPMENT					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
BUSINGE ROGERS	M	Kitahura Cell	0772602050	
TUMWESIGE LANSTONI	M	KITAHURA CELL	0787327284 / 0754051052	
TUMWESIGYE HARRISON	M	KITYANGA CELL	0779984423	
TIBAJUKA SCOVIA	F	KITYANGA CELL	0777396930	
KUSEMERERWA SUSAN	F	Kitahura Cell	0789650765	
Katuliide Beatrace	F	Kitahura Cell	0778600986	Beatrace..
Kunihira Gorret	F	Kitahura Cell	0778600990	goret.
Nyamuha Christine	F	Kitahura	0777384509	—
Katusabe Beatrace	F	Kitahuwra	0779043103	
KWIKIRIZA DEO	F	Kitahuwra.	0788157924	

Meeting 10: Kawaibanda community

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Kawaibanda Community **15th 02 2020** **Kawaibanda village** **Compiled by:** GB and DA, RN	Consultant: **AIR WATER EARTH (AWE) Ltd.**
Agenda;	**1. Opening Prayer** **2. Self-Introduction** **3. Welcoming remarks from the chairperson of Kawaibanda** **4. Remarks from the community representative** **5. Communication from the consultant** **6. Discussion by members present** **7. A.O.B and Closure**	
1. Prayer	The opening prayer was led by one of the community members of Kawaibanda and this was followed by self-introduction of the consultancy team and community members present identifying themselves identifying their villages	
2. Welcoming remarks from the chairperson	The Chairman Isingoma Ibrahim of kawaibanda welcomed the consultant to kawaibanda village. Welcomed and appreciated the responsibility taken by the consultancy to organise and come for the meeting welcoming his fellow local leaders from different villages around the project Commented on the gender imbalance of the meeting recognised that there were more men than women and argued the community member available to come with their wives next time. Emphasised the impacts will be both positive and negative and that the members should participate their contribution will facilitate planning for the project and mitigate some of the negative effects Enlightened the members around on which roads are going to be developed under this project called upon their cooperation	
3. Communication from the consultant	The sociologist, thanked the local leaders for welcoming them and the support provided while mobilising and organising the meetings and the community members for the good turn She gave a brief description of the project, the assignment and the purpose of the meeting.	
4. Discussions	**Question:** What if their existing developments are destroyed during construction of the road for example water pipes yet the existing ones it's the local people who volunteered for the manual labour	

	Response from AWE Representative: The contractor will work with NWSC to relocate these pipes before construction begins on such sections. **Question**: Will the contractors be introduced to the community member when the work commences? Most of the ongoing projects we are not familiar with the contractors **Response from AWE Representative:** The contract will first of all ensure that all workers have company identification, are registered with LC1 and will conduct meetings with the community and other stakeholders to familiarise the project key staff with the stakeholders and also update them on project progress. **Question**: How will people who have houses in the corners be compensated because the surveys marks show a portion of their land is going to be taken **Response from AWE Representative:** The town council and district will engage the affected persons and where compensation is inevitable, the right land acquisition procedure will be followed. **Question**: How will the local people be sure they will be employed because the contractors have a tendency of coming with their employees/ casual workers? **Response from AWE Representative:** The contractor will display notices and run adverts of available job opportunities and guidance will be given on how to apply. The contractor shall involve the LC1s of the project villages to ensure that the local community is given opportunity. **Question**: What solution do contractors have especially for the case of destructing students during lessons? **Response from AWE Representative:** The schools will be fenced off during construction works and the contractor will also minimise noise around schools during class hours.
	Suggestions/ comments from the village people i) Construction of the road should commence as soon as possible they are willing and ready for the commencing of the construction ii) Watering of the road during construction should be done frequently to reduce negative impacts likely to develop from dust like accidents iii) Effective sensitisation should be done more especially when construction of the road is commencing iv) To employ the local people as a way of paying them back to benefit since they dint benefit from compensation

	v) Even when construction commences, we advocate you work hard in hard with the local leaders to reduce on local violence from the local people vi) Sign posts should be put in place being a grazing area and on-going school children to avoid accidents during construction.
A.O.B and Closure	Meeting was adjourned with the chairperson who thanked members present for their participation and called upon the village member to actively participate in filling the questionnaires and fill in the right answers

Photos of the meeting

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Village consultations - kawembinda village - landing site				
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**		
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date:	15/02/2020				
Project name:	ESIA for ADSDP Batch 2 Roads				
Proponent:	Ministry of Lands, Housing & Urban Development				

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
ISINGOMA IBRAHIM	M	KAWAMBANDA	0783452107	
KUGONZA MAGRET	F	"		
NYAJIRA JAMES	M	"		
BAGUMIRABINGI FRANCIS	M	"	0778279709	
TAARI PETER	M	"	0779235061	
ORINGI FELEX	M	"	0783787804	
AMEKONGMCGU BRAINZ	M	"	0788479359	
ASIIMWE PIUS	M	"	0787626?3	
OKETH FASIANO	M	"	—	
OKUMU DAVID	M	"	0779627505	

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	KAWAIBANDA VILLAGE MEETING					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:						
Project name:	GHIA STUDY FOR ARSDP BATCH 2 PROJECT.					
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					
Name of person met:		**F/M**	**Village**	**Contact (Tel)**	**Sign/ initial**	
			KAWAIBANDA			
RWOTHUMIYO	EMMANUEL	M	KAWAIBANDA	—		
KALISA	MOSES		"	077793758		
OGEN	RWOTH DAVID		KAWAIBANDA	—		
OKELLO	DENNIS		"	—		
BYARUHANGA	Vicent	M.	KAWAIBANDA	0787337760		
AYEBALE	DOREEN	F	"		Ayebare	
KWAMUKAGA	EGIRWA	M	"	0784051226		
Byenky	Lorentor	M	"	0785576646		

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	KAWEMBANDA VILLAGE - BUTIABA TC	SUBCOUNTY			
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓	
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date:	15th/02/2020				
Project name:	ESIA for ARUSAP Batch 2 Roads				
Proponent:	Ministry of Lands, Housing & Urban Development.				

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
OCHAKI DAVID	M		0775110119	
AHMAD RUSONGORA	M		0781-579058	
PITUWA JACKSON	M		—	
RUGONGEZA HAKIM AZAALI	M	Kawaibanda	077 4167813	
Wandera Richard	M	"	—	W.R.
AMANYA NORMAN	M	"		
KOTHUBER DAVID	M	"		
KOKURA	M	"		
KISEMBO MOSES	M	"	—	MOSES
ORINGI ALFRED	M	"	-	

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	KAWAIBATHDA VILLAGE MEETING.					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:						
Project name:	ESIA STUDY FOR ARSDP BATCH 2 PROJECT.					
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
CWINYAI BICHAMDO	M	TANGALA	0785977177	
THUMFUHO CHARLES	M	TANGALA	0781368214	
ALTHUM CHALS	M	TANGALA	—	
OKECHA RICHARD	M	TANGALA	0785003223	
OTHEMBO EMMANUEL	M	TANGALA	"	
UPOKA STEPHEN	M	Tangala	0858289757	
CWINYAI RICHARD	M	Tangala	0788099705	
BUSINGE FRANCIS	M	Tangala	0787615876	
OWINJI GIDEONE	M	TANGALA	0773497390	
ALBERT UNGEY	M	TANGALA	0781919381	

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	TANGALA VILLAGE MEETING.				
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓
	Sensitisation			**RAP**	
	Environmental Audit			**Other (specify)**	
Date:					
Project name:	ESIA STUDY FOR ARSDP BATCH 2 PROJECT.				
Proponent:	MINISTRY OF LANDS HOUSING AND URBAN DEVELOPMENT.				

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
AROMBORAC JOYCE	F	TANGALA	—	
ATIMANGO MARGARET	F	"	—	
NIKUMA GRACE	F	TANGALA	—	
AjoloAwoka Jon	F	TANGALA	—	
Esita Acungube	F	TANGALA	—	
NYIKITE CHRISTINE	F	KAMPALA 'B'	0775037368	
CHIKAKUN JOSELIN	F	TANGALA	—	
OCHIDA SALIMA	F	TANGALA	—	
BERDCHAN GODFREY	M	KAMPALA 'B'	0777100518	

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Meeting 11: Civic and Kizongi cells

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Civic and Kizongi cells **17.02.2020** **Community hall** **Compiled by:** GB and DA	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer** **2. Self-Introduction** **3. Welcoming remarks by the chairperson** **4. Remarks by CDO** **5. Communication from the consultant** **6. Discussion by members present** **7. A.O.B and Closure**	
1. Prayer	The opening prayer was led by the LC1 Civic cell and this was followed by self-introduction of the consultancy team and community members present identifying their cells	
2. Welcoming remarks from the chairperson	The chairperson LC1 of Civic cell thanked the community for turning up for the meeting and thanked AWE for considering to consult central ward regarding the proposed road project. He mentioned that due to location of these cells in the town, people are usually engaged in business activities and so urged those that managed to make it to the meeting to disseminate the information to be communicated in the meeting to the rest.	
3. Remarks from the CDO	The CDO of Buliisa Town Council thanked the community for turning up for the meeting. He emphasised that the first entry of the project is through the community and thus urged the community members to always endeavour to attend meetings when called upon in order to participate an contribute to proposed development in the area.	
4. Communication from the consultant	The sociologist thanked the LC1, CDO and local leaders for welcoming them and the support provided while organising the meetings and for turning up for the meeting. She gave a brief description of the assignment highlighting the completed phase (scoping) which guided the development of terms of reference that are in turn guiding the study. She then gave an insight of the project to the community, including the project roads and the purpose of the meeting	
Discussions	**Discussion**	
	Question: what will be done to cultural heritage sites for example graves?	

	Response from AWE Representative: The physical cultural specialist on the team has undertaken assessments to determine the existence of any sites of cultural significance along the roads. From his study, none of these features were identified along the roads. However, a chance finds procedure will be developed and implemented in case the contractor encounters any of these features during works especially excavations. Relocation, if necessary, will be done in consultation with the local leaders and the affected households. **Question:** What criteria will be taken while employing workers for construction? **Response from AWE Representative:** The contractor shall notify the community of available jobs through displaying notices, advertising on radio and through other media, guiding on the procedure of application. The contractor shall also involve the local leaders especially LC1 of the project villages to ensure members from the project communities are given opportunities, if skilled enough for the jobs.
	Recommendations by community i) During recruitment, local communities should be given priority especially youth that can-do casual labour ii) The contractor should sensitize his truck drivers to control speed in order to avoid accidents and in case of accidents, the contractor should bear the costs of treatment and compensate the casualties iii) The contractor should caution his workers against engaging in sexual relationships with married people and school going children iv) The quality of the roads constructed should be good. The ministry should hire competent contractors v) The road user committees formed should be trained and the contractor should recognize their roles and cooperate with them vi) Murrum heaps should not be left on the road, it should be spread at the end of the day to avoid causing accidents to road users especially at night vii) When suppressing dust on the road using sprinklers, the contractor should take caution not to wet roadside merchandise. viii) A project office should be set up at the workers' camp and should be made accessible to the community for project information and lodging complaints ix) Workers should be paid adequately and on time x) Contracts should be issued to workers and the provisions should be adhered to.
A.O.B and Closure	Meeting was adjourned with the chairperson who thanked members present for their participation and called upon all the leaders present to work hand in hand with the consultation team during their local engagement with the communities.

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder: CENTRAL WARD - CIVIC + KIZONGI

Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓
	Sensitisation		**RAP**	
	Environmental Audit		**Other (specify)**	

Date: 17.02.2020

Project name: ESIA study for ARSDP Batch 2 Project Roads

Proponent: MINISTRY of Lands, Housing and urban Development

Name of person met:		**F/M**	**Village**	**Contact (Tel)**	**Sign/ initial**
Kwebiha	Dinah	F	Kizogi	—	KD
Birungi	Dorothy	F	Kizogi	—	[signature]
BIRUNGI	EDIFRANCE	F	KIZOGI cell	0758768138	[signature]
Kuinihira	Roda	F	Kizogi	0779043711	K
MUHANGI	EDWARD	M	KIZONGI	0770793936	[signature]
Geofrey	MULINDWA	M	KIZONGI cell	0773371506	[signature]
ABIKUHA	NORMAN	M	KIZONGI Cell	0782249174	[signature]
KIIZA	SEREMOTH	M	KIZONGI	078033502	[signature]
AYESIGA	ALLAN	M	KIZONG	0772395989	[signature]
KABASINDI	DARUSON	F	CIVIC CELL	0788441040	[signature]

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Butiisa Sub county - Kijangi village				
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓
	Sensitisation			**RAP**	
	Environmental Audit			**Other (specify)**	
Date:	13/feb/2020				
Project name:	ESIA FOR ARSDP - BUWSX BATCH 2 ROADS				
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.				

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
BABIHE STEPHEN	m	Kijangi	0787335672	Stephenic.
Barongeza Gilbert	m	Kijangi	—	
Yokisani Kaliisa	m	Kijangi	0180983733	Kaliisa
Jastine Adyeeri	F	Kijangi	0777608596	Adyeeri
ARUGONZA JOHN	F	Kijangi	0783076285	
BYARUHANGA YOSAMU	m	KIJANGI	0771490705	
Kabasindi Naume	F	Kijangi	——	Naume
Wandera Ateenyi	F	Kijangi	0772448058	Wandera
GEORGE Tumusiime	M	Kijangi	0788572131	
KASANGAKI DEO	m	"	0788770927	

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	KILYANGO VILLAGE.					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:	14.02.2020					
Project name:	ESIA STUDY FOR KRSDP BATCH 2 ROADS.					
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					
Name of person met:		**F/M**	**Village**	**Contact (Tel)**	**Sign/ Initial**	
Alithum Ronald		M	Kilyangu	0775584120		
BAGOLE RONICK		M	KILYANGO	0775236357		
JAKISA INNOCENT		M	KILYANGO	0775609342		
OROCHI DONALD		M	KILYANGO	0776253765		
Kabagambe Mayamuba		M	Kilyango	—		
KABAKAMA GLORIA		F	Kilyangu	—		
Beriyu Magrate		F	Kilyangu	—		
HABU CHRISTINE		F	Kilyangu	—		
OKUR BOTH Solomon		M	Kilyango	—		
OKUAI PASKAL			Kilyango	0787951650		

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder: KILYANGO VILLAGE					
Purpose of consultation (*tick appropriate box*):	Scoping		ESIA	✓	
	Sensitisation		RAP		
	Environmental Audit		Other (specify)		
Date: 14.02.2020					
Project name: FEASIBILITY STUDY FOR KRSDP BATCH 2 ROADS.					
Proponent: MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT.					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
Odaga peri Richard	M	Kilyangu	0779914454	[signature]
OSAGA EMMANUEL GERARD	M	Kilyango	0773544238	[signature]
OTOYURU RICHARD	M	Kilyango	0781159085	[signature]
ORONYA MANUEL.	M	KILYANGO	0773309557	[signature]
AKELLO CHARITY	F	KILYANGO	0782883598	[signature]
OTHUMA WILSON	M	KILYANGO	0789234880	[signature]
KUSIMA MIRIAM	F	KILYANGO	— — — —	[signature]
Okumu Richard wapokira	M	Kilyangu	0777484417	[signature]
OKUMU EMMANUEL	M	KILYANGO	0785056498	[signature]
DAWOKA GEOFREY	M	KILYANGO	0787052607	[signature]

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Meeting 12: Booma cell

Stakeholder Engagement Meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Boma Community **16th 02 2020** **Booma Trading Centre** **Compiled by:** Grace Baalikowa and Dianah Alinaitwe	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer** **2. Self-Introduction** **3. Welcoming remarks from the chairperson** **4. Remarks from the local leader representatives** **5. Communication from the consultant** **6. Discussion by members present** **7. A.O.B and Closure**	
1. Prayer	The opening prayer was led by one of the community members and this was followed by self-introduction of the consultancy team and community members present by identifying themselves by village.	
2. Welcoming remarks from the chairperson	The Chairperson welcomed the consultant to Booma village. He also appreciated the local leaders and the community members for attending the meeting. He briefed the community about the project, mentioning the different roads that are to be upgraded under this phase. He urged the community to participate in project activities whenever called upon as the project is meant to benefit them.	
3. Communication from the consultant	The sociologist thanked the community for the positive response towards the meeting by turning up in large numbers. She gave a brief description of the project, the assignment and the purpose of the meeting; highlighting that it was aimed at identifying likely impacts dur to project implementation and suggestions of the community on the measures that should be implemented to mitigate such impacts.	
Open discussions by members present	**Discussion**	
	Question: Will the roads have street lights? The roads should provide lighting because here in our village the most commonly used transport is boda and footing and also move at night **Response:** The proposed roads will be upgraded to tarmac. Street lighting will be provided to improve security at night as well as increase the working hours of the business community, traffic signs and road marking will be installed as	

	well as humps and rubble strips to control speeds at critical locations along the roads **Question:** How are the wastes going to be managed during and after construction? **Response:** i. Under this study, AWE will develop a plan for waste management for the contractor. ii. The contractor will develop a waste management plan that will outline the procedure for managing waste. He/she will also work with the district environmental officer to identify a suitable place to dispose waste. **Suggestion:** the contractor should employ a local liaison officer to mediate between the contractor and the local community. **Question:** Are there new roads that are going to be opened up or they are all already existing? **Response:** The roads for upgrade to tarmac are already existing roads.
	Recommendations by community i) Compensation should be considered especially for people in corners of the road where portions of the land are going to be taken up by the road ii) The contractor should inform the community in advance and give them time to harvest crops close to roads to avoid destruction during construction activities iii) Continuous sensitization of the community should be conducted to increase interest and participation of the community in the project iv) The local communities should be given first priority during recruitment of workers and they should be paid on time and fairly. v) The contractor should sprinkle water along dusty roads to suppress dust vi) Contractor's drivers especially truck drivers should control their speed to avoid accidents of animals and humans vii) Sign posts should be put in place being a grazing area and on-going school children to avoid accidents during construction. viii) Contractor's workers that commit crimes in community e.g. theft, family breakages and defilement should be punished by law
A.O.B and Closure	Meeting was adjourned with the chairperson who thanked members present for their participation and called upon all the leaders present to work hand in hand with all project teams.

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Community Engagement – Booma Village				
Purpose of consultation (*tick appropriate box*):	**Scoping**	☐	**ESIA**	☑	
	Sensitisation	☐	**RAP**	☐	
	Environmental Audit	☐	**Other (specify)**	☐	
Date:	16th/07/2020				
Project name:	ESIA Study for ARSDP Batch 2 Roads				
Proponent:	Ministry of Lands Housing & Urban Development.				

Name of person met:		F/M	Village	Contact (Tel)	Sign/ Initial
KATU	JACOB		M Booma	—	K.J.
Kisembo	Joyce	F	Booma	0775525251	KJ
AVAKA	CHRISTINE	F	Booma	0782777954	
Kabasindi	ROSET	F	BOOMA	0781311480	ROSE
AINYANGO	JACKLINE	F	Booma	0775646649	AJ
TIKISOBOKA	JOE	F	Booma	—	A.J.
KABAGUMBA	JANET	F	BOOMA	—	K.A
KATUSAMBE	JENIFER	F	Booma	—	K.J
NYADERA	JENIFER	F	BOOMA	—	
MACHELET	AGUTI	F	BOOMA	—	

STAKEHOLDER CONSULTATION

ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Booma Village					
Purpose of consultation (*tick appropriate box*):	**Scoping**			**ESIA**	✓	
	Sensitisation			**RAP**		
	Environmental Audit			**Other (specify)**		
Date:	16/02/2020					
Project name:						
Proponent:	Ministry of Lands Housing and Urban Development					
Name of person met:		**F/M**	**Village**	**Contact (Tel)**	**Sign/ initial**	
1.	KINTABOINE WAMAN MOSES	M	BOOMA	0775509209		
2.	KISEMBO Julius	M	Booma	0786073969		
3.	ASUMARWE MODESH	F	BOOMA	0759119673		
4.	ONGIERA PETERSON	M	BOOMA	0774293856		
5.	Bamutwaki George	M	BOOMA	0775365059		
6.	TIBALINKA GILBERT	M	BOOMA	0772257684		
7.	WINDERA MOSES	M	BOOMA	0788435483		
8.	ONEN CHNi		BOMA			
9.	ASIIMWE ASTON	M	BOOMA	0788204054		
10.	MUHAMMAD KYAJJALIA	M	BOOMA	0775313274		

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Booma Village.					
Purpose of consultation (*tick appropriate box*):	**Scoping**	☐		**ESIA**	☑	
	Sensitisation	☐		**RAP**	☐	
	Environmental Audit	☐		**Other (specify)**	☐	
Date: 16/02/2020						
Project name:						
Proponent: Ministry of Lands Housing and Urban Development						

	Name of person met:	F/M	Village	Contact (Tel)	Sign/ Initial
11	BARONGO DEO	M	BOOMA	0785975515	
12	BIJARUHANGA MOSES	M	BOOMA	0779759718	
13	KYAHI GONZA PHILLY	M	Booma	0778650532	K.Philly
14	AHEEBWA BRENDA	F	Booma	0780733317	
15	Byakagaba Francis Kidyeda	M	BOOMA	0776767311	
16	KWONKA ROBERT	M	Booma	0753355399	
17	MULYEKA SADIKI	M	BOOMA	0772130411	
18	DOROTYA HAPPY	F	BOOMA	—	HAPPY
19	Monday BRIGET	F	BOOMA	—	AA
20	KAHUSABE JULIET	F	Booma	0783042389	

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NAMES		F/M	VILLAGE	CONTACTS	SIGN
21 ASABA	EVELINE	F	BOOMA	—	A E
22 KATULINDE	EVERSE	F	BOOMA	—	K.E
23 ATUHAISE	MARINE	F	BOOMA	—	A.M
24 NGABIJAI	FRENCHER	F	WANTEMBO	—	[signature]
25 Kabajumbura	Goreti	F.	Booma	—	K.G.
26 AHEBWA	MELDRED	F	BOOMA	—	H.M
27 AHANIBWE	SYLVIA	F	BOOMA	—	R.S
28 ABITEGEKA	ROGGERS	M	BOOMA	0774264060	[signature]
29 KANGA	S	M	BOOMA	—	K
30 KAMARA	Julius	M	BOOMA	—	K.J
31 OPARI	ALBERT	M	BOOMA	—	O.P
32 KEMIS	ISMAIL	M	BOOMA	0783 449958	[signature]
33 WAHAN	JOSEPH	M			[signature]
34 BIHANGWA	JOHNSON	M	BOOMA	0779822984	[signature]
35 MUGUME	JULIUS	M	BOOMA	0784051151	M.J
36 BWINGE	INNOCENT	M	BOOMA	0773625833	R.N
37 Muhumuzi	HENNERY	M	BOOMA	—	M.H
38 NYAGANA	HARIET	F	BOOMA	—	N.A
39 KUSEMEREWA	MUHUMUZA	F	BOOMA	—	K.M

Meeting 13: Piida and Kekeya

Stakeholder engagement meeting for the Consultancy Services for the Environment and Social Impact Assessment (ESIA) for Batch 2 Sub-Projects (Roads and Renovations of office)		
Client: **MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT (MLHUD)**	**Stakeholder:** Piida and Kekeya **15.02.2020** **Community hall** **Compiled by:** GB and DA	Consultant: **AIR WATER EARTH (AWE) Ltd.**
		
Agenda;	**1. Opening Prayer** **2. Self-Introduction** **3. Welcoming remarks by the chairpersons (Piida and Kekeya)** **4. Remarks by CDO** **5. Communication from the consultant** **6. Discussion by members present** **7. A.O.B and Closure**	
1. Prayer	The opening prayer was led by one of the community members and this was followed by self-introduction of the consultancy team and community members present identifying their cells	
2. Welcoming remarks from the chairperson	The chairperson LC1s of Piida and Kekeya villages thanked the community for turning up for the meeting and thanked AWE for considering to consult central ward regarding the proposed road project. In their remarks, they both emphasised that the community has long waited for the project and pledged their support in all project activities.	
3. Remarks from the CDO	The CDO of Butiaba Town Council thanked the community for turning up for the meeting. He urged the community to participate whenever called upon in engagements and activities whenever called upon; emphasising that this key to the success of the project.	
4. Communication from the consultant	The sociologist thanked the LC1, CDO and local leaders for welcoming them and the support provided while organising the meetings. She thanked the community for turning up in large numbers. She gave a brief description of the project, the proposed component and emphasised purpose of the meeting; to discuss the positive and negative impacts likely to arise during project implementation and purpose measures that should be implemented to enhance the positive impacts and mitigate the negative ones.	
5. Discussions	**Discussion** **Question:** Will all structures and crops along these roads be compensated? **Response;** The designs for the paved roads have utilised the existing alignment and so no structure will be demolished during road construction. However, any property that will be accidentally destroyed e.g. by machine moving or any construction activity will be compensated for through the right procedure	

	Question: What measures has the project put in place to ensure that local community members also get jobs and benefit from the project? **Response:** The contractor will display notices on community noticeboards and place adverts on local media regarding available jobs and provide guidance on how to apply. This will be monitored by the supervising consultant, District and town council leadership. The contractor will be required to involve the LC1 chairperson of the villages traversed by the roads in the recruitment process to ensure that local community that have the required skills are considered in job placement. **Recommendations** i) The contractor should pay equal money to locals and foreign workers for the same or similar work done. He/she should not discriminate against workers in terms of payment. ii) Casual laborers should not be hired from anywhere else, there a number of able youths in the project area that can-do casual work; this should be given to the locals iii) The contractor should sensitize his truck drivers to control speed in order to avoid accidents and in case of accidents, the contractor should bear the costs of treatment and compensate the casualties iv) The road user committees formed should be trained and the contractor should recognize their roles and cooperate with them v) The contractor should sprinkle water to suppress dust to avoid spread of flu and cough vi) Workers should be paid adequately and on time
A.O.B and Closure	Meeting was adjourned with the chairperson who thanked members present for their participation and urged them to continue supporting project activities.

Photos of the meetings

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Bulyabo sub county Kekeya & Piida B				
Purpose of consultation (*tick appropriate box*):	Scoping		ESIA	✓	
	Sensitisation		RAP		
	Environmental Audit		Other (specify)		
Date: 15/02/2020					
Project name: ESIA study for XRSDP Batch 2 Roads					
Proponent: Ministry of Lands, Housing and Urban development					

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
UPAR JULIUS	M	Piida 'B'	0755011376	[signature]
Nasuru Utembi	M	Kekeya (defence LCI)		[signature]
God MOGAN	M	MAGALI		[signature]
PIROWAMBE	M	JACKSON	0738184824	BLACK
FRED ACHDAF	M	KAKIRA	0775123541	[signature]
OKEWEGO William CHOYOM	–	PIIDA "A"	0772614603	[signature]
Magambo James	M	triangle	0772323482	[signature]
Sunday DOMINIC	M	PIR	0778600353	[signature]
AMANDA SHABAN	M	Kekeya	0774490372	

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder: Village Engagement Butiaba K Subcounty · Piida B & Kekeya

Purpose of consultation (*tick appropriate box*):				
Scoping			ESIA	✓
Sensitisation			RAP	
Environmental Audit			Other (specify)	

Date: 13th/02/2020

Project name: ESIA study for KRISAP Batch 2 Roads.

Proponent: Ministry of Lands, Housing and urban Development.

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
WANTUMBU NORMAN	M	KEKEYA	0779774965	NORMAN
ALIGUMA BEATRACE	FM	PIIDA B	0743 698833	Aliguma
BIGABWA ABDUL RAHIM	m	PIIDA. B	07764712,	[signature]
Komakech Denis	m	PIIDA · B	0771604527	[signature]
AMINA	F	PIIDA · B		amina
ODONGO ALFRED	m	PIIDA · B		Alfred
BAKASAMBYA RASHID	m	PIIDA B	0784876170	Bakasamba
BAMUTURAKI JOHN	M	PIIDA B	0777317756	[signature]
Asiimwe casebati	M	PIIDA B	0779016450	[signature]
NYOLONGA DENIS	M	PIIDA B.		[signature]

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	Village engagement - Buhimba TC/Subcounty				
Purpose of consultation (*tick appropriate box*):	**Scoping**		**ESIA**	✓	
	Sensitisation		**RAP**		
	Environmental Audit		**Other (specify)**		
Date: 15/02/2020					
Project name: ESIA Study for ARSAP for Batch Two Roads.					
Proponent: Ministry of Lands, Housing and Urban Development					

Name of person met:	**F/M**	**Village**	**Contact (Tel)**	**Sign/ initial**
ALINAITWE UNICE	F	Piida 'B'	0778106845	[signature]
KARUNGI MUGISA	F	PIIDA B.	0787873199	[signature]
ATUHAIRWE MOREEN	F	KEKEYA	0759119673	[signature]
ALITUHA FREDERICK	M	Piida 'B'	0772887130	[signature]
KAJAIJA SAM SAMAD	M	Piida 'B' GEN SEC	0773951045	[signature]

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ATTENDANCE REGISTRATION SHEET

Name of Agency/Stakeholder:	PIIDA VILLAGE.				
Purpose of consultation (*tick appropriate box*):	Scoping		ESIA	✓	
	Sensitisation		RAP		
	Environmental Audit		Other (specify)		
Date:					
Project name:	ESIA STUDY FOR ARSDP BATCH 2 ROADS				
Proponent:	MINISTRY OF LAND HOUSING AND URBAN DEVELOPMENT				

Name of person met:	F/M	Village	Contact (Tel)	Sign/ initial
KIINGI MUWRU ASADI	M	PIIDA B	0779801617	[signature]
Kawuka	M			Kawuka
Babyesiza Wilfred	M	PIIDA B		
Senkanja edward	m	Piida B	0787887449	Senkanja
MARACHTO SUZAN	F	Piida B.	—	Suzan.
KIIZA NOVISTA	F	Piida B.	—	Novista.

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Appendix III: Plant species in the project area

Family	Species	Plant life form	Conservation status
Palmae	Borassus aethiopum	Tree	LC
Cyperaceae	Cyperus articulata	Herb	LC
Cyperaceae	Cypha latifolius	Herb	LC
Mimosaceae	Acacia brevspica	Shrub	LC
Mimosaceae	Acacia gerrardii	Tree	LC
Mimosaceae	Acacia hockii	Shrub	LC
Mimosaceae	Acacia senegal	Shrub	LC
Mimosaceae	Acacia sieberiana	Shrub	LC
Euphorbiaceae	Acalypha neptunica,	Shrub	LC
Amaranthaceae	Achyranthes aspera	Herb	LC
Papilionaceae	Aeschynomene elaphroxylon	Shrub	LC
Caesalpiniaceae	Albizia grandibracteata	Tree	LC
Aloaceae	Aloe sp	Shrub	LC
Amaranthaceae	Alternanthera pungens	Herb	LC
Annonaceae	Annona senegalensis	Shrub	LC
Moraceae	Antiaris toxicaria	Tree	LC
Acanthaceae	Asystasia gangetica	Herb	LC
Salvadoraceae	Azima tetracantha	Shrub	LC
Balanintaceae	Balanites aegyptiaca	Tree	LC
Nyctiginaceae	Boerhivia diffusa	Herb	LC
Poaceae	Brachiaria brizantha	Grass	LC
Poaceae	Brachiaria sp	Grass	LC
Euphorbiaceae	Bridelia scleronuera	Tree	LC
Capparaceae	Cadaba farinosa	Shrub	LC
Capparaceae	Capparis fascularis	Shrub	LC
Capparaceae	Capparis tomentosa	Shrub	LC
Caesalpiniaceae	Cassia alata	Shrub	LC
Poaceae	Chloris gayana	Grass	LC
Asteraceae	Chromolaema odorata	Shrub	LC
Vitaceae	Cissus aralioides	Climber	LC
Vitaceae	Cissus quadragularis	Climber	LC
Combretaceae	Combretum aculeatum	Shrub	LC
Combretaceae	Combretum adenogonium	Tree	LC
Combretaceae	Combretum collinum	Tree	LC
Combretaceae	Combretum molle	Tree	LC
Commelinaceae	Commelina diffusa	Herb	LC
Capparaceae	Crateva adansonia	Tree	LC
Cucurbitaceea	Cucumis figarae	Climber	LC
Cucurbitaceea	Curcubita cylindrica	Climber	LC
Poaceae	Cynodon dactylon	Grass	LC
Ascelpidaceae	Dragea rubicunda	Climber	LC
Poaceae	Eichnnocloa colona	Grass	LC

Poitenderaceae	Eichornnia crassipes	Herb	LC
Poaceae	Eragrostis sp	Grass	LC
Papilionaceae	Erythrina abyssinica	Tree	LC
Euphorbiaceae	Erythrococa bongensis	Shrub	LC
Erythroxylaceae	Erythroxylum fischeri	Shrub	LC
Euphorbiaceae	Euphorbia candelabrum	Tree	LC
Euphorbiaceae	Euphorbia triculi	Shrub	LC
Euphorbiaceae	Flueggea virosa	Shrub	LC
Amaranthaceae	Gomphrena celesoides	Herb	LC
Malvaceae	Gossypium hirsuta	Shrub	LC
Tiliaceae	Grewia mollis	Shrub	LC
Tiliaceae	Grewia similis	Shrub	LC
Simourabaceae	Harrisonia abyssinica	Shrub	LC
Malvaceae	Hibiscus cannabis	Shrub	LC
Labiatae	Hoslundia opposita,	Shrub	LC
Poaceae	Hyparrhenia filipendula	Grass	LC
Poaceae	Hyparthelia dissoluta	Grass	LC
Poaceae	Imperata cylindrica	Grass	LC
Papilionaceae	Indigofera arrecta	Shrub	LC
Oleaceae	Jasminium eminii	Shrub	LC
Bignoniaceae	Kigelia africana	Tree	LC
Verbenaceae	Lantana camara	Shrub	LC
Poaceae	Leersia hexandria	Grass	LC
Capparaceae	Maerua angolensis	Shrub	LC
Anarcadiaceae	Mangifera indica	Tree	LC
Euphorbiaceae	Manihot esculenta	Shrub	LC
Celastraceae	Maytenus sengalensis	Shrub	LC
Meliaceae	Melia azederach	Tree	LC
Asteraceae	Microglossa pyrifolia	Shrub	LC
Mimosaceae	Mimosa pigra	Shrub	LC
Apocynaceae	Mondia whitei	Climber	LC
Musaceae	Musa spp	Tree	LC
Labiatae	Ocimum rothii	Shrub	LC
Oleaceae	Olea africana	Shrub	LC
Opiliaceae	Opilia celtidifolia	Climber	LC
Poaceae	Panicum maximum	Grass	LC
Poaceae	Panicum sp	Grass	LC
Leguminosae	Parkisonia aculeatum	Shrub	LC
Leguminosae	Philenoptera laxiflorus	Tree	LC
Poaceae	Phragmites mauritianum	Grass	LC
Labiatae	Plectranthus sp	Shrub	LC
Papilionaceae	Pseudartharia hookeri	Shrub	LC
Anarcadiaceae	Rhus natalensis.	Shrub	LC
Anarcadiaceae	Rhus vulgaris	Shrub	LC

Salviniaceae	Salivina molesta	Herb	LC
Draceanaceae	Sansaveria dawei	Shrub	LC
Anarcadiaceae	Sclerocarya birrea	Tree	LC
Caesalpiniaceae	Senna obtusifolia	Shrub	LC
Caesalpiniaceae	Senna occidentalis	Shrub	LC
Caesalpiniaceae	Senna samea	Shrub	LC
Poaceae	Setaria sphacelata	Grass	LC
Malvaceae	Sida ovata	Shrub	LC
Poaceae	Sprobolus africana	Grass	LC
Poaceae	Sprobolus pyramidilis	Grass	LC
Bignoniaceae	Stereospermum kunthianum	Tree	LC
Portulacaceae	Talinum portulacca	Shrub	LC
Rutaceae	Teclea nobilis	Tree	LC
Papilionaceae	Tephrosia linearis	Shrub	LC
Papilionaceae	Tephrosia voegellii	Shrub	LC
Combretaceae	Terminalia brownii	Tree	LC
Apocynaceae	Thevetia peruviana	Shrub	LC
Tiliaceae	Triumfetta macrophylla	Shrub	LC
Tiliaceae	Triumfetta rhomboidea	Shrub	LC
Asteraceae	Vernonia amygdalina	Shrub	LC
Asteraceae	Vernonia poiretiana	Shrub	LC
Poaceae	Vossia cuspidata	Grass	LC
Malvaceae	Wissadula amplissma	Shrub	LC
Rhamnaceae	Ziziphus pubscens	Shrub	LC

Appendix IV: Butterfly species distribution within the project area

Species	Ecotype
Acraeaencedon	W
Acraeanatalica	W
Acraeapharsalus	f.
Acraeapseudegina	W
Acraeazetes	W
Antheneamarah	O
Anthenedefinita	W
Antheneindefinita	O
Antheneotacilia	O
Appiasepaphia	M
Axiocercestjoane	O
Azanusjesous	M
Azanusmirza	W
Azanusmoriqua	W
Azanusnatalensis	W
Belenoisaurota	M
Belenoiscreona	M
Belenoissubeida	f.
Bicyclus anynana	O
Bicyclus milyas	O
Bicyclus pavonis	O
Bicyclus safitza	W
Borboborbonica	M
Borbofallax	O
Bybliaanvatara	M
Catopsiliaflorella	M
Charaxes brutus	f.
Charaxes candiope	W
Charaxes castor	W
Charaxes etheocles	F
Charaxes jasius	O
Charaxes varanes	W
Charaxes viola	f.
Chiladestrochylus	W
Coeliadesforestans	W
Colotisantevippe	O
Colotisaurigineus	W
Colotis aurora	O
Colotisauxo	W
Colotisdanae	W

Colotiseris	O
Colotis eucharis	W
Colotiseuippe	O
Colotisevagore	M
Colotisione	O
Colotisprotomedia	O
Colotisvesta	O
Cupidopsiscissus	W
Cupidopsisjobates	W
Danaus chrysippus	M
Deudorixantalus	W
Eicochrysopshippocrates	W
Eroniacleodora	O
Euchrysopsalbistriata	O
Euchrysopsmalathana	O
Euchrysopssubpallida	O
Eurema brigitta	M
Eurema desjardinsi	W
Eurema hapale	S
Eurema hecabe	M
Eurema regularis	W
Euryteladryope	W
Gnophodesbetsimena	F
Graphiumleonidas	M
Hypolimnasmisippus	M
Hypolycaenapachalica	O
Hypolycaenaphilippus	W
Junonia chorimene	O
Junonia hierta	M
Junonia oenone	W
Junonia orithya	M
Junonia terea	W
Lachnocnemabibulus	W
Lampidesboeticus	M
Leptosia nupta	f.
Leptotespirithous	M
Melanitis leda	W
Metisella midas	S
Nepheronia buqueti	O
Neptidopsis ophione	f.
Neptis morosa	W
Neptis saclava	W

Papilio demodocus	M
Papilio nireus	f.
Pelopidas mathias	M
Phalantaphalanta	M
Precisantilope	O
Precisoctavia	W
Precispelarga	f.
Sarangesaphidyle	O
Tirumalapetiverana	M
Tuxentiuscretosus	O
Ythimaasterope	O
Ythimadoleta	W
Zizeeria knysna	W
Zizina antanossa	W
Zizulahylax	W

Appendix V: Bird species recorded in the project area

Species	Habitat specialization
Abyssinian Ground hornbill *Bucorvus abyssinicus*	NF
Afep Pigeon *Columba unicincta*	FF
African thrush *Turdus pelios*	NF/g
African Black Duck *Anas sparsa*	NF/W
African Blue-Flycatcher *Elminia longicauda*	F
African broad bill *Smithorns capensis*	FF
African Citril *Serinus citrineloides*	F
African Cuckoo-hawk *Aviceda cuculoides*	F
African Dusky Flycatcher *Muscicapa adusta*	F
African Dwarf Kingfisher *Ispidina lecontei*	FF
African Finfoot *Podica senegalensis*	W
African Forest Flycatcher *Fraseria ocreata*	FF
African Golden Oriole *Oriolus auratus*	F
African Goshawk *Accipiter tachiro*	F
African Green Pigeon *Treron calvus*	F
African Hobby *Falco cuvierii*	F
African Jacana *Actophilornis africanus*	W
African Marsh-Harrier *Circus ranivorus*	W
African Openbill *Anastomus lamelligerus*	NF
African Paradise-flycatcher *Terpsiphone viridis*	F
African Pied Wagtail *Motacilla aguimp*	NF
African pitta *Pitta angolensis*	FF
African Wood-owl *Strix woodfordii*	F
Allen's Gallinule *Porphyrioalleni*	NF
Alpine Swift *Apus melba*	NF
Angola swallow *Hirundoangolensis*	NF
Augur Buzzard *Buteo augur*	NF
Ayres's Hawk-eagle *Hieraaetusayresii*	F
Bare-faced Go-away-bird *Corythaixoidespersonatus*	NF
Barn swallow *Hirundorustica*	NF
Bateleur*Terathopiusecaudutus*	NF
Black Bishop *Euplectesgierowii*	NF
Black Kite *Milvusmigrans*	NF
Black-and-white Shrike-flycatcher *Bias musicus*	F
Black-bellied Bustard *Lissotis melanogaster*	W
Black-capped Apalis *Apalis nigriceps*	FF
Black-headed Batis *Batis minor*	N
Black-throated Apalis *Apalis jacksoni*	FF
Blue billed malimbe/Gray's Malimbe*Malimbusnitens*	F
Yellow billed Barbet *Tracylaemuspurpuratus*	FF

Blue-shouldered Robin Chat *Cossyphacyanocampter*	F
Blue-throated brown sunbird*Nectariniacyanolaema*	FF
Brimstone Canary *Serinussulphuratus*	NF
Broad-billed Roller *Eurytomusglaucurus*	F
Bronze-tailed Glossy Starling *Lamprotornischalcurus*	NF
Brown Babbler *Turdoidesplebejus*	NF
Brown throated-Wattle-eye *P. cyanea*	F
Buff-throated Apalis*Apalisrufogularis*	FF
Cabain's Bunting *Emberizacabanisi*	NF
Cameroon Sombregreenbul*Andropaduscurvirostris*	FF
Cardinal woodpecker *Dendropicosfuscescens*	NF
Cassin's Spinetail*Neafrapuscassini*	FF
Cattle Egret *Bubulcus ibis*	NF
Chestnut Wattle-eye *Platysteiracastanea*	FF
Chestnut-breasted Negrofinch*Nigrita bicolor*	FF
Chestnut-winged Starling *Onychognathusfulgidus*	F
Chocolate-backed Kingfisher *Halcyon badia*	FF
Cinnamon-breasted Rock Bunting *Emberizatahapisi*	NF
Collared Flycatcher *ficedulaalbicollis*	NF
Collared sunbird *Anthreptescollaris*	F
Common Buzzard *Buteobuteo*	NF
Common Quail *Coturnixcoturnix*	G
Common Swift*Apusapus*	NF
Compact Weaver *Ploceussuperciliosus*	F
Copper sunbird *Nectariniacuprea*	F
Crested Malimbe*Malimbusmalimbicus*	F
Croaking Cisticola *Cisticolanatalensis*	G
Crowned Hornbill *Tockusalboterminatus*	F
Diederik Cuckoo *Chrysococcyxcaprius*	NF
Double toothed Barbet *Pogonornisbidentatus*	F
Dusky Blue Flycatcher *Muscicapacomitata*	F
Eastern Plantain-eater*Criniferzonurus*	NF
Egyptian Goose *Alopochenaegyptiacus*	W
Equatorial Akalat*Sheppardiaaequatorialis*	FF
Eurasian Reed-warbler *Acrocephalusscirpaceus*	NF
Fawn-breasted Waxbill *Estrildapaludicola*	NF
Fire-crested Alethe*Alethediademata*	FF
Forest Robin *Stiphrorniserythrothorax*	FF
Fork-tailed drongo*Dicrurusadsimilis*	F
Gabar Goshawk *Micronisusgabar*	NF
Garden Warbler *Sylvia borin*	F
Giant Kingfisher *Megaceryle maxima*	NF

Gray Crowned-Crane *Baleariceregulorum*	W
Greater Honeyguide*Indicator indicator*	F
Green Crombec*Sylviettavirens*	F
Green Hylia*Hyliaprasina*	F
Green long bill *Calothoraxlucifer*	NF
Green Sandpiper *Tringaochropus*	NF
Green-breasted pitta *P. reichenowi*	FF
Grey Apalis *Apalis cinerea*	FF
Grey Ground-Thrush *T. princei*	FF
Grey headed sparrow *Passer griseus*	NF
Grey Wagtail *Motacilla cinerea*	F
Grey-headed Kingfisher *Halcyon leucocephala*	F
Grey-headed Negrofinch *N. canicapilla*	F
Grosbeak Weaver *Amblyospizaalbifrons*	F
Hadada Ibis *Bostrychiahagedash*	NF
Hairly-breasted Barbet *Tricholaemahirsutus*	F
Hamerkop*Scopusumbretta*	NF
Harrier Hawk *Polyboroidesradiatus*	F
Helment Shrike *Prionopsplumata*	NF
Helmeted Guineafowl*Numidameleagris*	G
Holub's Golden Weaver *P. xanthops*	NF
Honey Buzzard *Pernisapivorus*	F
House Martin *Delichonurbica*	NF
Icterinegreenbul.*Phyllastrephusicterinus*	FF
Klaas' Cuckoo C. klaas	F
Lemon Dove *Aplopelialarvata*	FF
Lesser Moorhen *Gallinulaangulata*	NF
Lesser Striped swallow *Hirundoabyssinica*	NF
Levaillant's Cuckoo *Clamatorlevaillantii*	F
Little grey greenbul *A. gracilis*	FF
Little Sparrowhawk *A. minullus*	F
Little Swift *Apusaffinis*	NF
Long-crested Eagle *Lophaetusoccipitalis*	F
Mackinnin's Shrike *L. mackinnoni*	F
Marsh Tchagra *T. Minuta*	NF
Mountain greenbul*A. tephrolaemus*	FF
Moustached Warbler *Sphenoeacusmentalis*	NF
Narina's Trogon Apalodermanarina	F
Northern Black Flycatcher *Melaenornisedolioides*	NF
Northern Carmine Bee-eater *Meropsnubicus*	NF
Northern Olive Thrush *Turdusabyssinicus*	F
Olive long-tailed cuckoo C. olivinus	FF
Olive-green Cameroptera *C. chloronota*	FF

Peregrine Falcon F. peregrines	NF
Pin-tailed Whydah *Viduamacroura*	NF
Plain-backed pipit	FF
Purple Glossy Starling *L. purpureus*	NF
Purple Swamphen *Porphyrioporphyrio*	W
Shoebill *Balaenicepsrex*	W

Appendix VI: Water Quality Analysis Certificate

MAKERERE UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
PUBLIC HEALTH AND ENVIRONMENTAL ENGINEERING LABORATORY

Tel: 041-4543152 E-mail: rkulaba@cedat.mak.ac.ug

CERTIFICATE OF ANALYSIS-WATER QUALITY

CLIENT: Air, Water and Earth Ltd (MLHUD)

PROJECT: Consulting service for preparation of Environment and Social Impact Assessment for Batch 2 sub projects (Roads and Renovations of office)

Sampling date: 14th -16th February 2020 **Delivery date**: 20th February 2020 **Analysis dates**: 20th – 3rd March 2020

	Surface water sources				Groundwater sources				
Sample ID/ Parameter	2	8	16	20	1	3	4	6	17
Apparent colour (ptCo)	159	54	317	57	0	0	27	549	28
Turbidity (FAU)	15	6	36	7	2	2	6	113	2
Total suspended solids (TSS) (mg/l)	38	16	82	102	nd	nd	846	210	6
Nitrates (mg/l)	9.1	3.9	8.4	2.7	5.2	4.1	2.8	15.5	2.6
Ortho Phosphorus (mg/l)	0.54	0.45	0.75	0.54	0.64	0.73	1.04	0.27	0.92
Total Iron (mg/l)	0.97	0.05	0.60	0.03	0.21	0.08	0.32	14.25	0.41
Manganese (mg/l)	nd	nd	nd	nd	nd	0.041	0.412	0.132	nd
Hardness (mg/l)	31.8	193.2	157.8	145.1	48.3	122.8	197.6	557.1	175.0

Key: 2 - River Nile; 8 - Lake Albert 16 - Lake Albert 20 - Lake Albert
ns-not specified; nd - not detected: Detection limit for TSS, and Manganese is 1.8mg/l and 0.01mg/l respectively.

Checked by: Mrs. R. Kulabako (PhD)
In-charge PHEE lab

CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT
Environmental Engineering
13 MAR 2020
Laboratory
MAKERERE UNIVERSITY
P.O.BOX 7062, KAMPALA

Appendix VII: Household survey questionnaire

GOVERNMENT OF UGANDA
MINISTRY OF LANDS, HOUSING & URBAN DEVELOPMENT

Batch 2 Roads Sub-projects (Roads and Renovations of Office)
for the Albertine Region Sustainable Development Project

SOCIAL-ECONOMIC SURVEY QUESTIONNAIRE

CONSULTANT

AIR WATER EARTH (AWE)
www.awe-engineers.com

February 2020

SOCIO-ECONOMICE SURVEY QUESTIONNAIRE – BATCH 2 SUB-PROJECTS ALBERTINE REGION SUSTAINABLE DEVELOPMENT PROJECT (ARSDP) FOR the affected Householder

My name is....., working for Air water Earth Ltd on behalf of Ministry of Lands, Housing and Urban Development (MoLHUD), undertaking an Environmental and Social Impact Assessment (ESIA). We are currently conducting a social survey study and you are being selected as one of the key respondents for this exercise. **Your** responses are aimed at aiding successful preparation of the ESIA study **only** and shall be treated with the highest level of confidentiality they deserve.

Date of interview: ____ /_____/2020

Village: _____ County _____ Sub-County: _____

Parish: _____ District: _____

SECTION A: FAMILY INFORMATION

1. Household Head (Surname, First Name) _____

2. Sex: _____ (M/F)

3. Age of respondent: _____

(15-25)	☐	(46-55)	☐
(26-35)	☐	(56 and above)	☐
(36-45)	☐		

4. Tribe:

Bagungu	☐	Banyoro	☐
Alur	☐	Bakiga	☐
Banyankole	☐	Kakwa	☐
		Others specify	

5. Marital status (tick appropriate response):

Single	☐	Widowed	☐
Married	☐ No:____	Others specify	
Divorced	☐		

6. What religious affiliation is the HH?

Catholic	☐	Pentecostal	☐
Protestant	☐	SDA	☐
Islam	☐	Others specify	

7. Have you attended any form of education? Yes ☐ No ☐

8. If yes, what is the highest level of education you/ attained/currently in?

9. How many people live in the household?

Adult Males	
Adult Females	
Children Males	
Children Females	

10a). How many people living in the household are elderly?.....

b). How many people living in the household are disabled?.....

c) What kind of vulnerability do these people have? (Can be multiple response)

1. Very Old (Aged 65+)		Widowed		Child- headed	
2.Disabled		Displaced		Others (specify)	
3. Chronically ill		Female-Headed			

11. In what capacity do you live on this land? (Tick appropriate response)

Land Owner ☐ Squatter ☐
Co-owner ☐ Licensee ☐
Others specify ..... ☐

12. What land type is your piece of land?

Customary ☐
Freehold ☐ Others specify ..... ☐
Lease Hold ☐

13. How long have you lived on / used this land? ..... (Years)

14. How did you acquire this land?

Bought ☐ Squatter ☐
Inherited ☐ Allocation by LC 1 ☐
Renting ☐

15. Apart from settlement, what do you use the land for?

Crop farming ☐ Residential dwelling ☐
Livestock grazing ☐ Others specify .....
Trading/business activities ☐

16a). Do you have a garden? Yes ☐ No ☐

b) . What is the size of your garden currently? ..... (Record as stated)

17a). Are there graves on your land? Yes ☐ No ☐

b). Are there areas / features of spiritual significance to you or your community on your land? Yes ☐ No ☐

c). If yes, what is the feature?_____

SECTION B: HOUSEHOLD ASSETS and livelihood Resources

18. Main source of income of head of household: _____

b) Main source of income		Subsistence	Commercial
	1 Agriculture, crop		
	2 Agriculture, Livestock		
	3 Fishing/Fish farming		
	4 Carpentry 5 Construction 6 Pension 7 Trade 8 Transportation 9 Remittance from abroad 10 Salary/Wage 11 Small business enterprise/ trade 12 Others (Specify)		

19. What is the average household income?

0 – 100,000	☐	300,000 – 400,000	☐
100,000 – 200,000	☐	400,000 – 500,000	☐
200,000 – 300,000	☐	Above 500,000	☐

20. Do you have any household member having access to regular source of income? Ye☐ 2. No ☐

a) For those household members who are participating in economic activities, what are their various sources of income?.....

21. What household basic necessities do you spend on?

Investing in agriculture (seeds, land rent, tillage etc)	☐	Food	☐
Investment in other business (shop, production etc)	☐	Medical expenses	☐
Household assets (phone, TV, motorbike, etc)	☐	Others (please specify).....	
Education	☐		

22. Do you have at least one of the following items in this household (read out)? 1. Yes 2. No

Information and communication		**b)Quality of life Assets**		**c)Productive Assets**	
1. Radio		6. Car		14. Kiosk/shop	
2. TV		7. Motorcycle		15. Commercial water tap	
3. Mobile Telephone		8. Bicycle		16. Plot of land	
4. Fixed telephone		9. Fridge		17. Rental house	
5. Clock/watch		10. Electricity supply		18. Commercial building	
		11. Reliable water supply		19.Cattle	
		12. Own descent House		20. Goats/Ships	
		13. Sofa seats		21. Poultry	

23. Do you have electricity in this area? 1. Yes 2. No

What type of energy is used for the following activities in your household? ***(Tick as applicable)***

Activity	Grid Electricity	Kerosene	Car Battery	Dry cell	Firewood	Charcoal	Engine	Gen-set	Solar system
Lighting									
Cooking									
Grinding/ milling									
Radio									
TV									
Cell phone									
Equipment									
Machinery									

24. What major problems do you experience in your area?

a) Major problems (circle the code)	b) Specify/What causes the problems
Income related problem?	
Production related problem	
Marketing problem	
Illiteracy and Ignorance	
Access to quality education	
Disease	
Access to quality healthcare	
Transport problems	
Remoteness and isolation	
Environmental problems	
Land wrangles	
Others (Specify)	

SECTION C: FARM PRODUCTION AND FOOD SECURITY
25. Does your homestead currently have access to arable land that you use for cultivation?
Yes ☐ No ☐

a) What is the total land that is owned by this household?
1=Less than one acre 2=Between 1 and 2 acres 3=Between 2 and 5 acres
4=Between 5 and 10 acres 6=Ten and more acres

b) What is the major land tenure system for your household land?
1=Customary 2= Free hold tenure 3= Leasehold 4= Mailo 5= Kibanja 9= Other *(specify)*.....

c) Under what use/ purpose have you put your household land?
1= Crop growing 2= Livestock keeping 3= Forestry 4= Fish farming 5= Residential purpose
6= Other commercial purpose (e.g. built rental buildings, rented out) 7= Not in use/fallow

d) What is the major source of food for this household?
1= Buy from the market 2= Grown on this parcel 3= Grown elsewhere 9= Other *(specify)*.....

e) Where do you usually sell your produce?
1= Don't sell at all 2= Local market 3= Outside market (far from home)
4= Outside the district 5= Co-operatives 9= Other *(specify)* .....

f) What problems have you experienced in your production activities? ***(Multiple response - Probe for: water, soils, land size, capital, attitude etc.)***
1= Drought/water 2= Lack of sufficient land 3= Lack of tools, like hoes 4= Lack of markets
5= Lack of good access to markets 6= Poor post-harvest handling 7= Poor technology
8= Lack of credit 9= Other *(specify)* .....

g) Does this HH keep any animals or birds?
1= Yes 2= No *(Skip to Q.4.08)*

If yes, which animals?
1= Birds Poultry 2= Piggery 3= Goats 4= Cows 9= Other *(specify)*.....

If Yes, where do you graze the livestock?
1= Private own land 2= Private borrowed land 3= Customary land
4= Public land 5= Hired 9= Other *(specify)* .....

h) What problems have you experienced in livestock rearing? ***(Probe for: water, soils, land size, capital, attitude etc.)***
1= Inadequate/Lack of water 2= Inadequate/Lack of pasture land 3= Animal disease
4= Cattle theft 5= Expensive drugs 6= No help from government 9= Other *(specify)* .....

i) Do you experience severe dry condition in this area?
Yes every year 2. Yes in some years 3. I do not know

If Yes, in which months of the year does the drought occurs? Tick the number

1	2	3	4	5	6	7	8	9	10	11	12
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Domestic Food Production

26. Do you have access to land? *Whether personal or borrowed*
Yes *2. No* ***(skip to a)***

If yes, how many are under cultivation? _____

a) How many acres owned?	b) Of those, how many are under cultivation?

a) Do you participate in agriculture?
1. Yes 2. No (Skip to)

b) What agricultural activities are done on that land?
1. Crop farming 2. Animal rearing 3. Poultry 4. Bee keeping 4.Earth work
5. Fishing 6. Forestry 7. Extraction (quarry) 8. Under fallow 9.Other

If crop farming, tell me, what types of crops are grown? (***Fill in table below)***

a)Crops	b) Acres	c) How many seasons
Banana		
Sweet potato		
Cassava		
Rice		
Sorghum		
Maize		
Millet		
Simsim		
Ground nuts		
Peas		
Beans		
Fruits *(specify)*		
Vegetables *(specify)*		
Others *(specify)*		

If this household rears animals/poultry ***?***

a) What are they?	b) Number you currently have
Cattle	
Goats	
Sheep	
Pigs	
Poultry	
Other	
How does the household graze their animals?	Free range (common property) Grazing on private/household property Others (specify).....

Availability of Food at Market Outlets

Do you suffer from periodic food shortage in this house?
1. Yes 2. No

If yes, how often do you buy food?
All the time 2. Occasionally 3. Rarely 4. Not at all

In times of food shortage, do you seek outside food assistance?
1. Yes 2. No (Skip to)

If yes, where do you seek food assistance from? ***(Code all that apply)***
1. Neighbour/Friends 2. Local markets 3. Shops
4. International Agency 3. Government 4. Other (specify)

What is the distance to the market outlet? _____

Access To Business Opportunity

Do you have any business or commercial enterprise from which you earn income? *(answer must be consistent with Household income question)*
1. Yes 2. No

If yes, which one?

Type of Business (specify)	a)Ownership 1. Sole proprietor 2. Family owned 3. Partnership 4. Corporation	c)Where is that enterprise located 1. Trading centre 2. Rural
Retail shop		
Mobile trade		
Space/accommodation		
Social Service (Sch HF)		
Small business & Service (specify)*		
Value addition (crops & livestock)		
Small manufacturing		
Construction		
Professional services		
Transport services		
Microcredit		
Mining/quarry		
Other		

***Example of Small Business and Service:** hairdressing, carpentry, electrician, restaurant, internet, preaching. **Professional services:** Accountant, Lawyer, Internet, Veterinary

Do you have financial services in this area?
Yes 2. No

If yes, which one?

What financial institution is available	How many Km
1. Bank	
2. SACCO	
3. MFI	
4. Other (specify)	

What services do you obtain from such MFI *(multiple responses)*
1. Credit 2. Saving 3. Insurance 4. Financial training 5. Business Advice/Entrepreneurship

6.Other

23 Among the household members, whose primary responsibility is it to: ***(Tick)***	Activity	Adult male	Adult Female	Young Male	Young Female	All household Members
	1). Cultivation					
	2).Harvesting					
	3).Fire wood collection					
	4).Water collection					
	5).Building house					
	6).Purchase household items					
	7).Paying for health					
	8).Paying for school fees					

SECTION D: ACCESS TO WATER:

24 What is the main source of water for your household?	*Source of water*	*Distance from household (meters)*	
	1. River	1-1.5 km 1.5-2.5km 2.5-3.5km	3.5- 5km Over 5km
	2. Rain water/ harvesting Tanks		
	3. Yard Taps/ Public stand posts	10-1.5 km 1.5-2.5km 2.5-3.5km	3.5- 5km Over 5km
	4. Communal borehole	10-1.5 km 1.5-2.5km 2.5-3.5km	3.5- 5km Over 5km
	5.Protected Springs	10-1.5 km 1.5-2.5km 2.5-3.5km	3.5- 5km Over 5km
	6.Other (specify)	10-1.5 km 1.5-2.5km 2.5-3.5km	3.5- 5km Over 5km
a) Are you satisfied with the quality of drinking water? (Taste, colour, odour, hardness)	Fully satisfied ☐ Satisfied ☐ Neutral ☐	Not very satisfied ☐ Not satisfied at all ☐	
b) What are the reasons for non – satisfaction with the quality?	Taste ☐ Colour ☐ Odour ☐	Hardness ☐ Others specify ☐	
c) What problems do you encounter with the water sources?	1. Too steep 2. Too expensive 3. It dries up 4. Long distance	5. Swampy 6. Long Queue 7. Others (Specify).....	
d) Do you boil Water for drinking?	Yes ☐	No ☐	

SECTION E: ACCESS TO HEALTH SERVICES

25 Has anyone in your household been ill, had an accident in the last six month? Yes ☐ No ☐

a) If yes what kind of illness/Accident was this?

1. Malaria	6. Cholera	11. Flue/cough
2. Diarrhea	7. Eye infection	12. Kwashiorkor
3. Intestinal worms	8. Typhoid	13. Motor vehicle accident
4. Dysentery	9. Dehydration	14. Motor cycle Accident
5. Bilhazia	10. Skin diseases	15. Others (specify)

b) What are the most common illnesses, health issues in your household?		Which of these long term illness (chronic)/conditions do members of your household have	
1. Malaria	6. Eye infection	1. Diabetes	7. Paralysis
2. Diarrhea	7. Typhoid	2. Hypertension	8. Nodding disease
3. Intestinal worms	8. Dehydration	3. HIV/AIDs	9. Speech impairment
4. Dysentery	9. Flue/cough	4. TB	10. Blindness
5. Cholera	10. Kwashiorkor	5. Cancer	11. Hearing Disability
	11. Others (specify)	6. Epilepsy	12. Others (specify)

c) What kind of health facility does your household use?

Facility	Name	Facility	Name
Government Health Centre	.....	NGO hospital	.....
Private hospital	.....	Herbalist	.....
Private clinic	.....	Do not use any	.....
Pharmacy	.....	Other (specify)	.....
	.....		

d) How far is the nearest health center in kilometers?

0-1.5 km ☐ 1.5-2.5km ☐ 2.5-3.5km ☐ 3.5- 5km ☐ Over 5km ☐

e) How satisfied are you with the services offered at the health facility?

Very satisfied ☐ Dissatisfied ☐ Indifferent ☐
Satisfied ☐ Very Dissatisfied ☐

If Yes/ No, state the reason.....

f) 28a). Is every child of 5 years and below in your Household fully immunized?

Yes ☐ No ☐

If No, what is the reason they are not immunized?

Not interested ☐ Do not know ☐
Afraid of immunizing ☐ Far off the facility ☐ Others, (Specify).....

g) Do all members of your household have access to mosquito nets?

Yes ☐ No ☐

h) Are you knowledgeable of HIV/AIDs means of contraction and its effects? Yes ☐ No ☐

SECTION H: COMMUNICATION

28	How does the household/community access/receive information and news? (multiple)	1. Community meetings 2. Formal sensitization sessions 3. Local Council Leaders 4. IEC materials, posters 5. Radio programs/talk shows/calls in sessions 6. Extension work by government officials	7. Group members 8. Traders 9. Boda boda 10. Television others (specify
a)	What the prefered source of information?		
b)	Name the radio stations that you access most easily, whether within or outside the country.		
c)	Do you own a mobile phone? Yes ☐ No ☐		

SECTION I: ENVIRONMENTAL ISSUES

29	What are some of the major environmental problems in your household?	1. Soil erosion 2. Reduction in Agriculture production. 3. Famine/ Drought	4. Loss of soil fertility 5. Flooding. 6. Over-use of agro-chemicals 7. Others specify.
a)	In your opinion what can be done to mitigate these environmental problems?	1. Public education 2. Re-afforestation 3. Control of soil erosion terracing	4. Heavy penalty on polluters 5. God's intervention 6. Others (specify)
b)	What are the **main** sources of information on environmental issues?		

SECTION J: COMMUNITY INVOLVEMENT AND PARTICIPATION IN DEVELOPMENT PROJECTS

30	What is the major attitude of community members towards participation in development activities? 1. Positive 2. Very positive 3. Negative
a)	What is a major cause of problems/violence in the community?
b)	How would you want to participant in the project development?

SECTION K: HOUSEHOLD ACTIVITIES, GENDER BASED VIOLENCE AND CONFLICTS							
31	Who is the main participant in the following activities in your household?	Activity	Adult male	Adult Female	Young Male	Young Female	All household Members
		1). Cultivation					
		2).Harvesting					
		3).Fire wood collection					

i) How can HIV /AIDs be avoided?.....

j) Are there any HIV and AIDS services available to the people in this community? Yes ☐ No ☐ Don't know ☐

k) If yes, what HIV and AIDS services are available to the community?

l) What challenges do people face in accessing these services?

m) 30 Do you practice family planning in your household? Yes ☐ No ☐

SECTION F: SANITATION FACILITIES AND PRACTICES

26 What is the common facility of disposing human waste?

Pit latrine ☐ Bush/open disposal ☐
Pour/ flush toilets ☐ Others specify.....
Community Latrine ☐

a) Do you have a working hand washing facility next to the latrine /toiled? Yes ☐ No ☐

b) Does your household have a drying rack? Yes ☐ No ☐

c) What is the **major** method of disposing household waste?

Burn ☐ Backyard ☐
Dig a hole ☐ Others (specify).....
Communal dump ☐

SECTION G: EDUCATION

27	Do you know how to read and write in the official language?	Yes ☐ No ☐
a)	Do you know how to read and write in the local language?	Yes ☐ No ☐
b)	Do you have any school going child in the Household	Yes ☐ No ☐
c)	How far is the nearest primary school (km)	
d)	How far is the nearest secondary school (km)	
e)	Do you have tertiary or vocational school?	Yes ☐ No ☐
f)	How do you access the schools?	1. Footing 3. Motorcycle 2. Bicycle 4. Others (specify)
g)	what problems affect the quality of education at school attended by your child?	High cost of tuition Scholastic materials Class room overcrowding Few teachers Dangerous road condition Distance to school Others Specify

		4).Water collection					
		5).Building house					
		6).Purchase household items					
		7).Paying for health					
		8).Paying for school fees					

SECTION L: KNOWLEDGE OF THE PROJECT

32 Is there any Livelihood group in your community? Yes ☐ No ☐
a) Do you belong to any of them? Yes ☐ No ☐

If yes, what is the name of the group? _____

Do you know about the proposed Road project? Yes ☐ No ☐

If yes, what do you know about it? _____

SECTION M: CHALLENGES AND OPPORTUNITIES:

33 What positive outcomes do you or your community anticipates benefiting from the implementation of the road upgrade project-?

1 _____
2 _____
3 _____

a) What negative outcomes do you and your community expect from the implementation of this proposed project?

1 _____
2 _____
3 _____

What are the biggest challenges with which you as a household must cope?

1 _____
2 _____
3 _____

THANK YOU

Appendix VIII: National Air quality Standards

POLLUTANT	AVERAGING TIME FOR AMBIENT AIR	EXAMPLES TO WHICH STANDARDS ARE APPLICABLE TO	STANDARD FOR AMBIENT AIR	STANDARD FOR EMISSIONS (POINT SOURCES)
Acid mist	24 hr	Acid manufacture, battery manufacture and acid changing, chemical stores and labs	100 µgNm^{-3}	
Ammonia	24 hr	Refrigeration, chemicals stores and labs, fish processing Combustion processes, boilers or any process involving sulphur burning	200 µgNm^{-3}	50 mg/Nm^3
Asbestos	24 hr	Construction industry, garages/car repairs, asbestos manufacture	0.01 fibres ml^{-1}	
Baggase	24 hr	Sugar processing plants	200µNgm^{-3}	
Carbon dioxide	8 hr	Breweries, soft drink industries, burning processes	9.0 ppm	
Carbon monoxide	8 hr	Combustion processes, boilers	9.0 ppm	
Cement	24 hr	Cement industries, construction	200 µgNm^{-3}	50 mg/Nm^3
Ceramics	24 hr	Tile and brick industries, ceramic industries, construction	200 µgNm^{-3}	
Chlorine	24 hr	Water treatment, fish processing, chemical stores and labs	200µg Nm^{-3}	< 3mg/Nm^3
Cobalt	1 month	Cobalt processing, copper mining	1.0 µgNm^{-3}	
Coffee dust	24 hr	Coffee processing and trading	200 µg Nm^{-3}	
Cotton fibres	24 hr	Cotton farming, ginning and export, textile manufacture	200 µgNm^{-3}	
Copper dust	1 month	Copper mining and processing, metal works and fabrication	1.0 µgNm^{-3}	0.5 mg/Nm^3
Electrode manufacture emissions	24 hr	Electrode manufacture, garages/car repairs, welding, metal fabrication	150 µgNm^{-3}	20 mg/Nm^3
Grain dust	24 hr	Grain milling, bakeries, feed mills, breweries, agriculture	200µgNm^{-3}	
Hydrocarbons	24 hr	Chemical stores and labs, fuel depots and stations	5 mgm^{-3}	
Hydrogen Sulphide	24hr	Waste water treatment, tanneries	15 µgNm^{-3}	15 mg/Nm^3
Lead	1 month	Battery manufacture and repair metal fabrication	1.0 µgNm^{-3}	0.5 mg/Nm^3

POLLUTANT	AVERAGING TIME FOR AMBIENT AIR	EXAMPLES TO WHICH STANDARDS ARE APPLICABLE TO	STANDARD FOR AMBIENT AIR	STANDARD FOR EMISSIONS (POINT SOURCES)
Lime	24 hr	Lime and cement industries, agriculture, construction	200 µgNm^{-3}	
Nitrogen oxides (NO_x)	24 hr 1 year Arithmetic mean	Combustion processes, welding	0.10 ppm	300 mg/Nm^3
Ozone	1 hr		0.10 ppm	
Pesticides	24 hr	Pest control and plant protection		
Phosphates	24 hr	Fertiliser manufacture, soap and detergents industry	200 µgNm^{-3}	50 mg/Nm^3
Silica	24 hr	Construction industry, detergent and manufacture, quarries	200 µgNm^{-3}	
Smoke	Not to exceed 5 min. in any one hour	Industry, trade or nay combustion process	Ringlemann scale No.2 or 40% observed at 6m or more	
Soot	24 hr	Combustion, charcoal and brick making, boilers	500 µgN m^{-3}	
Sulphur dioxide	24 hr	Combustion processes, boilers or any process involving sulphur burning	0.15 ppm	400 mg/Nm^3
Sulphur trioxide	24 hr	Sulphur burning, sulphuric acid manufacture	200µgNm^{-3}	
Synthetic fibres	24 hr	Synthetic textiles manufacture	0.01fibres ml^{-1}	
Tea dust	24 hr	Tea processing and manufacture	200 µgNm^{-3}	
Tobacco dust	24 hr	Cigarette manufacture including tobacco curing, tobacco farming	200µgN m^{-3}	
Total suspended particles/ particulate emissions	24 hr	Industries (e.g. cement, lime), quarries, grain milling, coffee processors, pharmaceuticals and any other trade	300 µgN m^{-3}	<50mg/Nm^3
Wood dust	24 hr	Saw mills, timber works and furniture making, construction	1 mgNm^{-3}	20mg/Nm^3
VOCs	24 hr	Breweries, fuel depots and stations	6 mgNm^{-3}	20mg/Nm^3

Appendix IX: Noise Quality Standards

Regulation 6(1)

Maximum Permissible Noise Levels for General Environment

Column 1	Column 2	
Facility	**Noise Limits B (A) (Leq)**	
	DAY	**NIGHT**
A. Any building used as hospital, convalescence home, home for the aged, sanatorium and institutes of higher learning, conference rooms, public library, environmental or recreational sites.	45	35
B. Residential buildings	50	35
C. Mixed residential (with some commercial and entertainment)	55	45
D. Residential + industry or small-scale production + commerce	60	50
E. Industrial	70	60

Time Frame: use duration

Day : 6.00 a.m - 10.00p.m.

Night : 10.00p.m - 6.00a.m

Appendix X: Clauses for Construction Work Contracts on Environmental Compliance

General Environmental Management Conditions for Construction Contract

General

1. In addition to these general conditions, the Contractor shall comply with the requirements of the Environmental and Social Management Plan (ESMP). The Contractor shall familiarise himself with the ESMP and prepare his work strategy and plan to fully take into account relevant provisions of that ESMP. If the Contractor fails to implement the approved ESMP after written instruction by the Supervising Engineer (SE) to fulfil his obligation within the requested time, the developer reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.

2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in an EMP. In general, these measures shall include but not be limited to:

   (a) Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity dust producing activities.

   (b) Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.

   (c) Ensure that existing water flow regimes in rivers, streams and other natural channels is maintained and/or re-established where they are disrupted due to works being carried out.

   (d) Prevent bitumen, oils, lubricants and waste water used or produced during the execution of works from entering into rivers, streams and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.

   (e) Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.

   (f) Upon discovery of ancient heritage, relics or anything that might or believed to be of archaeological or historical importance during the execution of works, immediately report such findings to the SE so that the appropriate authorities may be expeditiously contacted for fulfilment of the measures aimed at protecting such historical or archaeological resources.

   (g) Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.

   (h) Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.

   (i) Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.

(j) Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long-distance transportation.

(k) Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.

3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.

4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan / strategy to ensure effective feedback of monitoring information to project management so that impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.

5. Besides the regular inspection of sites by the SE for adherence to the contract conditions and specifications, the District and Town Councils will oversee the compliance with these environmental conditions and any proposed mitigation measures. In all cases, as directed by the SE, the Contractor shall comply with directives from these local government officials to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

Worksite/Campsite Waste Management

6. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals shall be bunded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed of at designated disposal sites in line with applicable government waste management regulations.

7. All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with applicable government water pollution control regulations.

8. Used oil from maintenance shall be collected and disposed of appropriately at designated sites or be re-used or sold for re-use locally.

9. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains etc. to reduce the potential of soil erosion and water pollution.

10. Construction waste shall not be left in stockpiles along the road, but removed and reused or disposed of on a daily basis.

11. If disposal sites for clean spoil are necessary, they shall be located in areas, approved by the SE, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoil materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.

Material Excavation and Deposit

12. The Contractor shall obtain appropriate licenses/permits from relevant authorities to operate quarries or borrow areas.

13. The location of quarries and borrow areas shall be subject to approval by relevant local and national authorities, including traditional authorities if the land on which the quarry or borrow areas fall in traditional land.

14. New extraction sites:

    a) Shall not be located in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on high or steep ground or in areas of high scenic value, and shall not be located less than 1km from such areas.

    b) Shall not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.

    c) Shall not be located in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.

    e) Shall be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.

    f) Shall have clearly demarcated and marked boundaries to minimize vegetation clearing.

15. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.

16. Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.

17. The Contractor shall deposit any excess material in accordance with the principles of these general conditions, in areas approved by local authorities and/or the SE.

18. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the SE and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.

Rehabilitation and Soil Erosion Prevention

19. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.

20. Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.

21. Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.
22. Re-vegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.

23. Locate stockpiles where they will not be disturbed by future construction activities.
24. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.

25. Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute groundwater and soil.

26. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.
27. Ensure reshaped land is formed so as to be inherently stable, adequately drained and suitable for the desired long-term land use, and allow natural regeneration of vegetation.

28. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.
29. Minimize erosion by wind and water both during and after the process of reinstatement.
30. Compacted surfaces shall be deep ripped to relieve compaction unless subsurface conditions dictate otherwise.

31. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local authority and the local people.

Water Resources Management

32. The Contractor shall at all costs avoid conflicting with water demands of local communities.

33. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.

34. Abstraction of water from wetlands shall be avoided. Where necessary, authority has to be obtained from relevant authorities.

35. Temporary damming of streams and rivers shall be done in such a way avoids disrupting water supplies to communities downstream, and maintains the ecological balance of the river system.

36. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.

37. Wash water from washing out of equipment shall not be discharged into water courses or road drains.

38. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

Traffic Management

39. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.

40. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.

41. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

Blasting

42. If new quarries are acquired for sourcing aggregate, blasting activities shall not take place less than 2km from settlement areas, cultural sites, or wetlands without the permission of the SE and approval from NEMA and licensing of the blaster by Ministry of Internal Affairs.

43. Blasting activities shall be done during working hours, and local communities shall be consulted on the proposed blasting times.

44. Noise levels reaching the communities from blasting activities shall not exceed 90 decibels.

Disposal of Unusable Elements

45. Unusable materials and construction elements such as electro-mechanical equipment, pipes, accessories and demolished structures will be disposed of in a manner approved by the SE. The Contractor has to agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.

46. AC-pipes as well as broken parts thereof have to be treated as hazardous material and disposed of as specified above.

47. Unsuitable and demolished elements shall be dismantled to a size fitting on ordinary trucks for transport.

Health and Safety

48. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of HIV/AIDS and other STIs.

49. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.

50. Construction vehicles shall not exceed maximum speed limit of 40km per hour.

Repair of Private Property

51. Should the Contractor, deliberately or accidentally, damage private property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.

52. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has to be informed by the Contractor through the SE.

Contractor's Environment, Health and Safety Management Plans (EHS-MP)

53. Within 6 weeks of signing the Contract, the Contractor shall prepare EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an ESMP for the works. The Contractor's EHS-MP will serve two main purposes:

    - For the Contractor; for internal purposes, to ensure that all measures are in place for adequate HSE management, and as an operational manual for his staff.

- For the Client, supported where necessary by a SE; to ensure that the Contractor is fully prepared for the adequate management of the HSE aspects of the project, and as a basis for monitoring of the Contractor's HSE performance.

54. The Contractor's EHS-MP shall provide at least:
    - a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in the ESMP;
    - a description of specific mitigation measures that will be implemented in order to minimize adverse impacts;
    - a description of all planned monitoring activities (e.g. sediment discharges from borrow areas) and the reporting thereof; and
    - the internal organizational, management and reporting mechanisms put in place for such.

55. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all of the identified impacts, and has defined appropriate measures to counteract any potential impacts.

HSE Reporting

56. The Contractor shall prepare bi-weekly progress reports to the SE on compliance with these general conditions, the project ESMP if any, and his own EHS-MP. An example format for a Contractor HSE report is given below. It is expected that the Contractor's reports will include information on:
    - HSE management actions/measures taken, including approvals sought from local or national authorities;
    - Problems encountered in relation to HSE aspects (incidents, including delays, cost consequences, etc. as a result thereof);
    - Lack of compliance with contract requirements on the part of the Contractor;
    - Changes of assumptions, conditions, measures, designs and actual works in relation to HSE aspects; and
    - Observations, concerns raised and/or decisions taken with regard to HSE management during site meetings.

57. It is advisable that reporting of significant HSE incidents be done "as soon as practicable". Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keep his own records on health, safety and welfare of persons, community engagements and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. Example formats for an incident notification and detailed report are given below. Details of HSE performance will be reported to the Client through the SE's reports to the Client.

Training of Contractor's Personnel

58. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, the project ESMP, and his own EHS-MP, and are able to fulfil

their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the EHS-MP. General topics should be:

- HSE in general (working procedures);
- emergency procedures; and
- social and cultural aspects (awareness raising on social issues).

HIV/AIDS: The contractors should have an HIV/AIDS policy and a framework (responsible staff, action plan, etc) to implement it during project execution.

Example Format: HSE Report

Contract:
Period of reporting:
HSE management actions/measures:
Summarize HSE management actions/measures taken during period of reporting, including planning and management activities (e.g. risk and impact assessments), HSE training, specific design and work measures taken, etc.

HSE incidents:
Report on any problems encountered in relation to HSE aspects, including its consequences (delays, costs) and corrective measures taken. Include relevant incident reports.

HSE compliance:
Report on compliance with Contract HSE conditions, including any cases of non-compliance.

Changes:
Report on any changes of assumptions, conditions, measures, designs and actual works in relation to HSE aspects.

Concerns and observations:
Report on any observations, concerns raised or decisions taken with regard to HSE management during site meetings and visits.

Signature (Name, Title Date):
Contractor Representative

Example Format: HSE Incident Notification

Provide within 24 hrs to the Supervising Engineer

Originators Reference No:
Date of Incident: **Time:**

Location of incident:

Name of Person(s) involved:

Type of Incident:

Description of Incident:
Where, when, what, how, who, operation in progress at the time (only factual)

Immediate Action:
Immediate remedial action and actions taken to prevent reoccurrence or escalation

Signature (Name, Title, Date): ……..… Contractor Representative

Appendix XI: Code of Practice for Construction Workers

Part I: Code of Practice

Part I: Code of Practice

This provides general operational guidance to contractors.

Part II: Code of Conduct

This entails governance/management and regulation of social behaviour of contractors at work.

1. INTRODUCTION

This code of practice provides guidance to contractors who will undertake construction of healthcare facilities associated with this project.

Construction work is work carried out in connection with construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure.

Construction workers must always:

- take reasonable care for their own health and safety
- take reasonable care that their acts or omissions do not adversely affect the health and safety of other persons, and
- comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.

This Code should also accommodate provisions for grievance redress for workers in case of any complaint from direct or indirect workers.

2. MANAGING RISKS WITH CONSTRUCTION WORK

The first step in the risk management process is to identify the hazards associated with construction work. Examples of hazards include:

- collapse of trenches
- falling objects, for example tools, debris and equipment
- hazardous manual tasks
- structural collapse
- the construction workplace itself, including its location, layout, condition and accessibility
- the handling, use, storage, and transport or disposal of hazardous chemicals
- the interface with other works or trade activities
- the physical working environment, for example the potential for electric shock, immersion or engulfment, fire or explosion, slips, trips and falls, people being struck by moving plant, exposure to noise, heat, cold, vibration, radiation (including solar UV radiation), static electricity or a contaminated atmosphere, and the presence of a confined space.
- the presence of asbestos and asbestos-containing materials
- the use of ladders, incorrectly erected equipment, unguarded holes, penetrations and voids, unguarded excavations, trenches, shafts and lift wells, unstable structures such as incomplete

scaffolding or mobile platforms, fragile and brittle surfaces such as cement sheet roofs, fibreglass roofs, skylights and unprotected formwork decks

- welding fumes, gases and arcs

3. SAFE WORK METHOD STATEMENTS (SWMS)

All persons who are involved in high risk construction work must develop and implement arrangements to ensure the work is carried out. This necessitates a SWMS, which is a written document that details high risk construction work activities to be undertaken, hazards or risks arising from those activities and measures to control the risks. All workers who will be involved in high risk construction work must be provided with information and instruction so they:

- know what to do if the work is not being conducted in accordance with the SWMS.
- understand and implement the risk controls in a SWMS
- understand the hazards and risks arising from the work

This information and instruction may be provided during general construction induction training, workplace-specific training or during a toolbox talk by the principal contractor, contractor or subcontractor.

4. OCCUPATIONAL HEALTH SAFETY (OHS) MANAGEMENT PLANS FOR CONSTRUCTION PROJECTS

An OHS management plan is a written plan that sets out the arrangements for managing some site health and safety matters. The intention of an OHS management plan is to ensure the required processes are in place to manage the risks associated with a complex construction project, as there are usually many contractors and subcontractors involved and circumstances can change quickly from day to day. An OHS management plan must be in writing and must be prepared by the principal contractor before a project commences. It should be easily understood by workers (including contractors and subcontractors). It may not be necessary to communicate the entire OHS management plan to all workers; however, they must be made aware of the parts that are applicable to the work they are carrying out. The OHS Management Plan must contain:

arrangements for consultation, cooperation and coordination

- arrangements for managing incidents
- arrangements to collect and assess, monitor and review SWMS.
- names of persons at the workplace whose positions or roles involve specific health and safety responsibilities, for example site supervisors, project managers, first aid officers
- site-specific health and safety rules and how people will be informed of the rules

While an OHS management plan is required for every construction project, a principal contractor may prepare a generic OHS management plan that applies to several construction projects, if the arrangements to manage work health and safety are the same for each construction project. However, the principal contractor must review and revise the plan to ensure it addresses the risks

of the actual workplace.

5. INFORMATION, TRAINING, INSTRUCTION AND SUPERVISION

All contractors and subcontractors must provide relevant information, training, instruction and supervision to protect all persons from risks to their health and safety arising from construction work carried out.

A range of activities can assist in ensuring people have the necessary knowledge and skills to complete the work safely, including general construction induction training and other training that may be specific to the workplace or the task the person is performing.

Information that might be provided includes workplace health and safety arrangements and procedures, such as for emergency evacuations. Information can be provided in various forms, including written formats or verbally, for example during workplace-specific training, pre-start meetings or toolbox talks.

General construction induction training provides basic knowledge of construction work, the work health and safety laws that apply, common hazards likely to be encountered in construction work, and how the associated risks can be controlled.
Any person who is to carry out construction work must successfully complete general construction induction training, for example project managers and engineers, foreman, supervisors, surveyors, and labourers.

6. GENERAL WORKPLACE MANAGEMENT ARRANGEMENTS

The principal contractor must put in place arrangements for ensuring compliance with the following duties:

- providing a safe working environment
- Zero tolerance to Child Labour
- providing and maintaining adequate and accessible facilities
- providing first aid
- preparing, maintaining and implementing emergency plans
- providing workers with PPE, if PPE is to be used to minimise a risk to health and safety
- managing risks associated with airborne contaminants
- managing risks associated with hazardous atmospheres including ignition sources
- storage of flammable and combustible substances
- managing risks associated with falls, and
- managing risks associated with falling objects.

The principal contractors may put in place arrangements for ensuring compliance with the above requirements through contractual arrangements, but they cannot rely only on these arrangements to ensure compliance. The principal contractor may also coordinate with other subcontractors, and check compliance whenever the principal contractor attends the construction site.

Part II: Code of Conduct for Contractors

Each employee including trainee or volunteer of a **Contractor** who have interaction with the project must sign this "Code of Conduct."

In this Code, "Contractor" shall mean and apply to the contractor, its employees, sub-contractor, officers, agents, representative or those contracted through the Contractor to perform services authorized by the contract.

The contractor agrees to adhere to this Code of Conduct when providing services to this project. The Code of Conduct is in addition to all other contract requirements, policies, rules and regulations governing delivery of services. The purpose of the code is to protect vulnerable people from abuse, neglect, maltreatment and exploitation. It clarifies expectation of conduct of the parties and their employees, which includes administrative staff, care staff, support services staff and any others when interacting with the project.

Contractor, its agents or representatives authorized through it shall not abuse, sexually abuse or sexually exploit, neglect, exploit or maltreat any fellow employees or people from general public/ community. Additionally, no person shall cause physical injury to any other person.

The Contractor shall not by acting, failing to act, encouragement to engage in, or failure to deter from will cause any person to be subject to physical or mental abuse, sexual abuse or sexual exploitation, neglect, exploitation, or maltreatment. The Contractor shall not engage any person as an observer or participant in sexual acts.

Contractor understands and acknowledges that failure to comply with this Code of Conduct may result in corrective action, probation, suspension, and/or termination of contract.

Equally important to realise is that this Code also protects any person under the age of 18 years and any person 18 years of age or older who is physically or mentally **handicapped or impaired** due of mental illness, mental deficiency, physical illness or disability, or other temporary or permanent cause, to the extent that he is unable to care for his own personal safety.

1) Abuse shall include the following, but is not limited to:

a) Harm or threatened harm, meaning damage or threatened damage to physical or emotional health and welfare of any person.

b) Unlawful confinement.

c) Deprivation of life-sustaining treatment.

d) Physical injury including, but not limited to, any contusion of the skin, laceration, malnutrition, burn, fracture of any bone, subdural hematoma, injury to any internal organ, any injury causing bleeding, or any physical condition which imperils a person's health or welfare.

e) Any type of physical hitting or corporal punishment inflicted in any manner upon the body.

2) Sexual misdemeanor will include, but not be limited to:

a) Engaging in exploitive or manipulative sexual intercourse with any person. There will be zero tolerance to sexual misdemeanor including rape, defilement of minors/ sexual child abuse, sexual harassment and elopement.

b) Taking indecent liberties with a person, or causing an individual to take indecent liberties with a person, with the intent to arouse or gratify sexual desire of any person.

c) Employing, using, persuading, inducing, enticing, or coercing a person to pose in the nude.

d) Employing, using, persuading, inducing, enticing or coercing a person to engage in any sexual or simulated sexual conduct for the purpose of photographing, filming, recording, or displaying in any way the sexual or simulated sexual conduct. This includes displaying, distributing, possessing for the purpose of distribution, or selling material depicting nudity, or engaging in sexual or simulated sexual conduct.

e) Use of profanities and obscene language in communities or when instructing others.

3) Neglect may include but is not limited to:

a) Denial of sufficient nutrition to any person.

b) Denial of sufficient sleep to nay person.

c) Denial of sufficient protective gear to any person.

d) Failure to provide adequate supervision; leading to drug use in workplaces, accidents and impairment of employees.

e) Failure to arrange for medical care and/or medical treatment for any person in an emergency.

f) Failure to drive courteously at all times, leading to accidents.

g) Failure to avoid damage public property.

h) Neglecting public and employee complaints.

4) Drug abuse may include but is not limited to:

a) Smoke in public or smoking in undesignated areas

b) Consumption of alcohol while on duty/at work

c) Use and trading in narcotics

5) Illegal trade activities without necessary licenses:

a) Trade in protected fauna or flora species

b) Trade in ivory or similar regulated wildlife products including game meat

c) Trade in processed, semi-processed minerals and their ores

6) Financial exploitation will include, but is not limited to:

Utilizing labor of without paying for it, or at a non-commensurate financial rate/ wage.

7) Mistreatment will include, but is not limited to:

a) Physical exercises, such as running laps or performing pushups,

b) Unauthorized chemical, mechanical or physical restraints except,

c) Assignment of unduly physically strenuous or harsh work.

d) Failure to behave in a polite and courteous manner to the general public

e) Requiring or forcing the individual to take an uncomfortable position, such as squatting or bending, or forcing people to repeat physical movements when used solely as a means of punishment.

f) Group punishments for misbehavior of individuals except in accordance with the written policy.

g) Verbal abuse: engaging in language whose intent or result is demeaning

h) Denial of any essential service solely for disciplinary purposes

i) Denial of visiting or communication privileges with family or significant others

j) Requiring the individual to remain silent for long periods of time solely for the purpose of punishment.

Contractor agrees to document and report abuse, sexual abuse and sexual exploitation, neglect, maltreatment and exploitation as outlined in this Code and cooperate fully in any resulting investigation. Contractor shall prominently display a poster, notifying contractor employees of their responsibilities and to report violations and giving appropriate phone numbers.

Contractor/ Employee/ Volunteer/ subcontractor

Signed: ……. Date (dd/mm/yyyy):

Name: ……

Appendix XII: Contractor's EHS policy statement

……. Company is committed to fully comply with all the relevant National and International Environment and Social Safeguards, statutory and contractual requirements as applicable to its operations.

This policy is the basis of our Environmental, Health and Safety Management System and provides a framework for setting our EHS objectives and targets.

The Company is committed to take all necessary actions to promote good health, welfare of employees, provide safe working conditions, protect and conserve the environment and thus prevent accidents, injuries, pollution and any adverse effects on the Environment, Employees, the community and other stakeholders and company assets. This will be achieved by controlling significant hazards and impacts identified through a structured risk assessment for Environment, Health and Safety issues and complying with the conditions of approval of the work sites by NEMA and other statutory guidelines and requirements.

The Project Manager has the overall responsibility for Environmental, Health and Safety management, will give priority to EHS in all project issues, and will provide adequate resources. However, it is the responsibility of all managers, engineers, supervisors/foremen and workforce to understand their role in implementing this policy and comply with all requirements.

The policy is applicable to all project components, including the quarries, campsites; borrow pits, and the roads, among others. Our commitment to the Health, Safety and Environment is communicated to all employees and stakeholders by prominent display of this policy on the project sites and offices, and during induction and routine training.
The management believes that effective management of Environmental, Health and Safety issues is fundamental to success, and is therefore committed to continually improve the EHS performance through setting and monitoring of objectives and targets, periodic audits, necessary training, encouraging new ideas, employee participation, coordination with all involved stakeholders, and Subcontractors and management reviews.

……
PROJECT MANAGER

Appendix XIII: Contractor's Anti Retaliation Policy

Prohibition of Retaliation:

The Company will not engage in nor tolerate retaliation against an individual who makes a report of discrimination, harassment, and/or retaliation or provides information concerning an act of discrimination, harassment, and/or retaliation. Retaliation is a serious violation of this policy. Any acts of retaliation or threatened retaliation should be reported immediately to the **HR department**. Any person found to have retaliated against another individual in violation of this policy will be subject to appropriate sanctions. Individuals, who believe they have been subject to any acts of retaliation or threatened with retaliation, should promptly report the same pursuant to the complaint procedure outlined in this policy.

Options for Addressing Discrimination/Harassment/Retaliation:

The Company encourages individuals to report all incidents of harassment, discrimination and/or retaliation. If you feel that you have been harassed, discriminated against, subjected to retaliation, or otherwise experienced inappropriate treatment in violation of this policy, you have a variety of options. Please review options 1 through 5 below and use and consider the option(s) to which you feel most comfortable.

1. Tell the person who is harassing you or treating you unfairly to stop. The Company encourages individuals who feel they have been subjected to treatment in violation of this policy to notify the offender firmly and promptly that the offender's behavior is unwelcome. However, the Company recognizes that in some instances such action may not be appropriate and you are not required to do so. In the event that such informal, direct communication between individuals is either ineffective or too difficult you are encouraged to file a formal complaint as explained below. Further, you are not required to use these informal communications if your allegation involves sexual violence

2. Seek a confidential consultation. Again, this option is available to you. Employees may seek support from the HR department.

3. Tell someone. If you believe that you may have been, or anyone else may have been, unlawfully discriminated against, harassed by, or retaliated against by any management, faculty of all departments, site supervisors and working staff or other non-employee with regard to any term or condition of employment in violation of this Anti-Retaliation Policy you should report your concerns to the Director of HR department. (With regard to unlawful retaliation, you also should report any alleged retaliation unrelated to work but which you believe is as a result of your having made a complaint, of unlawful discrimination, harassment, or retaliation, served as a witness or otherwise participated in the investigatory process.) Please speak with whichever person you feel the most comfortable, whatever your reasons.

Similarly, if you have any question as to whether certain conduct is unlawful discrimination, retaliation, or harassment, you are encouraged to speak with any of the individuals identified above.

Please speak with whomever you feel the most comfortable.

4. Informal Resolution. Disagreements and conflicts often vary in the level of seriousness. In some instances, an individual may feel that the conflict may be resolved informally by direct communication by the individuals involved or with the assistance of a facilitator. If you are interested in informal resolution, employees should contact the Director of Human Resources who can assist in identifying appropriate facilitators. These facilitators will assess the conflict, engage in fact gathering and seek to resolve the matter. Situations that are resolved through informal resolution will be subject to follow-up after a period

of time to assure that resolution has been implemented effectively. Individuals who engage in discrimination, harassment, or retaliation are subject to disciplinary action.

While the Company encourages early resolution of a conflict, the Company does not require that parties participate in the informal resolution process. Moreover, the parties have the right to end the informal resolution process at any time and begin the formal investigation stage of the complaint process. Finally, some reports of discrimination, harassment, ethnic intimidation, racial incidents, or hate crimes and incidents are never appropriate for informal resolution and will require a formal investigation. These include, but are not limited to, complaints involving sexual violence and other physical assault.

5. File a Written, Internal Complaint. If the matter cannot be resolved through one of the above approaches, or an individual chooses not to pursue one of the above methods, students, faculty, or employees may file a written complaint. Employees should report matters of alleged discrimination, harassment, or retaliation directly to the Director of Human Resources.

The Director of Human Resources and/or designees will investigate all allegations of discrimination, harassment, or retaliation in as thorough, prompt, and confidential a manner as is reasonably possible. Individuals who engage in discrimination, harassment, or retaliation are subject to disciplinary action.

Interim Protections

The Company may at any point in the complaint process elect to place the respondent on leave, reassignment, or authorize other types of temporary measures to ensure the safety and well-being of the complainant and the employee while the complaint process is pending.

Resolving the Complaint:

Upon completing the investigation of a discrimination, harassment, or retaliation complaint, the Company will communicate its conclusion, subject to any limitations set forth in national law. Both parties will be afforded an opportunity to file an appeal of the resolution in accordance with established Company grievance policy. If the Company determines after an investigation that there is no substantial basis to conclude that there has been discrimination, harassment, or retaliation in violation of this policy, the Company will inform the complainant and the respondent that a thorough investigation has been conducted and the Company determined that there is no substantial basis to determine that there has been discrimination, harassment or retaliation.

If the Company determines after an investigation that there is a substantial basis to conclude that there has been discrimination, harassment, or retaliation in violation of this policy, appropriate disciplinary action will be taken. Any management, faculty of all departments, site supervisors and working staff or other nonemployee who, after appropriate investigation, has been found to have engaged in unlawful discrimination, harassment, or retaliation and/or inappropriate behavior inconsistent with this policy (even if not unlawful) will be subject to appropriate disciplinary and/or corrective action.

……..

PROJECT MANGER

Appendix XIV: Sample of the Consent to the Road Reserve and Right of Way

BULIISA TOWN COUNCIL LOCAL GOVERNMENT

CONSENT TO THE ROAD RESERVE & RIGHT OF WAY (*Fill in Triplicate*)

I / We MUHEREZA KYAMALIRE WILFRED Tel. No. ..... and National ID No. CM58073101 27RC (*attach photocopy of National ID of owner-s*) do acknowledge that I / We own land on plot ..... along ..... MUHINDA Road located in KITYANGA Cell WESTERN Ward.

I / We acknowledge and confirm that:

1. My / Our land is located 15 meters off the road center-line.
2. I / We neither have any claim of ownership nor compensation in the current or future period over the 15 meter land between my / our plot and the road.
3. I / We do not have any claim for this strip of land in front of our land.
4. Any infrastructure developments that I / We shall undertake in our piece of land shall respect the 15 meter road reserve between our land and road center-line.
5. I / We have no any reservation/objection for the Town Council to use the road reserve for public infrastructure development including roads, water or other services

This consent and declaration is made on this 22 day of Aug 20 19 between MUHEREZA KYAMALIRE (Owner) of the property and ***Bulisa Town Council Local Government.*** The provisions of this consent and declaration will come into force from the date of signing of this consent.

TOWN CLERK Bulisa Town Council

Signed (Owner of the property): .....

Name & Tel Contact: MUHEREZA KYAMALIRE

Signed Town Clerk .....

Stamp & Date: 22/8/19

CHAIRPERSON LC I KITYANGA CELL 22 AUG 2019 BULISA TOWN COUNCIL

In the presence of: LC 1 Chairperson (sign) .....

Stamp & Tel Contact: .....

LC III Chairperson (sign) .....

Stamp & Tel Contact: 0777[illegible]532

CHAIRMAN LC III BULISA TOWN COUNCIL

Owner's witnesses (specify relationship):

..... (.....)

..... (.....)

(Each Consenting Party (ies) to attach copy of title or Land Purchase Agreement and Copy of National ID)

OFFICE OF CHAIRPERSON LC I KITYANGA CELL

WESTERN WARD BULIISA TOWN COUNCIL

P.O BOX BULIISA

Date: 23. / 08/ 2019

The Town Clerk

Buliisa Town Council

Dear Sir

RE: CONFIRMATION OF LAND OWNERSHIP

This is to confirm that the Family of ..... represented by Mr/Miss: ..... are the true owners of the land of size ..... Meters projecting along ..... Road in Kityanga cell Western ward.

Any assistance rendered to the family in regards the land use shall highly be appreciated.

Thanks

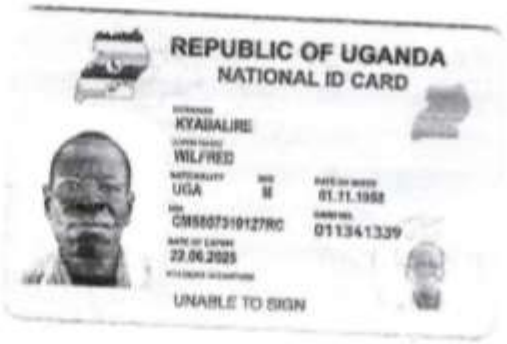
Yours in Service

Tibananuka Godfrey

LC 1 CHAIRPERSON

CC: File Copy

CHAIRPERSON L.C.I KITYANGA CELL 28 AUG 2019 BULIISA TOWN COUNCIL



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KYABALIRE<<WILFRED<<<<<<<<<<<<

Appendix XV: Summary of Criminal Cases and Domestic Violence cases reported

Re oc CPPU Assist and answer this question

THE PROPOSED UPGRADE OF 12.07 KM ROADS TO TARMAC IN BULISA TOWN COUNCIL AND BUTABA TOWN COUNCIL AND RENOVATION OF BULISA TOWN COUNCIL OFFICES UNDER ARSDP BATCH 2 PROJECTS

Domestic violence

			Year 2019			Year 2018			Year 2017		
1	Total number of domestic violence cases registered in year?		393			277					
2	Categorical number of domestic violence cases registered in year? Such as; Rape, assault, etc. GENDER BASED VIOLENCE (GBV)	Category	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
		① RAPE	08		08	02	02	—			
		② ASSAULT (Physical)	58	58		26	—	26			
		③ Domestic Violence (OTHERS)	82	82	—	99	—	99			

Crime rates

			Year 2019			Year 2018			Year 2017		
3	Categorical number of registered crime cases in year? Such as; Theft, child neglect VIOLENCE AGAINST CHILDREN (VAC)	Category	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
		① DEFILEMENT	52	—	52	56		56			
		② CHILD NEGLECT	87	75	12	72	72	—			
		③ CHILD DESERTION	—	—	—	15					
		④ CHILDREN IN CONFLICT WITH LAW	10	—	10	16					
		⑤ CHILDREN IN CONTACT WITH LAW	62	10	52	56					

NOTE: 1- MEN AS PERPETRATORS
2- WOMEN/GIRLS AS VICTIMS/ SURVIVORS

Page 1 of 2

Traffic related

			Year 2019			Year 2018			Year 2017		
4	Number of traffic accident cases registered in year?										
5	Categorical number of traffic related injuries cases registered in year? Such as; Fatality, serious, minor etc.	Category	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
6	Which are the Hot spot areas/ major concern roads in relation traffic accident										

Compiled by: Signature and stamp Apera Ben-Lino

Name A/1471 AIP ADERA-ALLI BEN-LINO

Page 2 of 2

Re: Oc traffic Please assist and answer Part 4 of the question traffic related issues

THE PROPOSED UPGRADE OF 12.07 KM ROADS TO TARMAC IN BULIISA TOWN COUNCIL AND BUTIABA TOWN COUNCIL AND RENOVATION OF BULIISA TOWN COUNCIL OFFICES UNDER ARSDP BATCH 2 PROJECTS

Domestic Violence

			Year 2019			Year 2018			Year 2017		
1	Total number of domestic violence cases registered in year?										
2	Categorical number of domestic violence cases registered in year? Such as; Rape, assault, etc.	**Category**	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women

Crime rates

			Year 2019			Year 2018			Year 2017		
3	Categorical number of registered crime cases in year? Such as; Theft, child neglect	**Category**	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women

Traffic related

			Year 2019			Year 2018			Year 2017		
4	Number of traffic accident cases registered in year?										
5	Categorical number of traffic related injuries cases registered in year? Such as; Fatality, serious, minor etc.	**Category**	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
		FATAL	05	04	01	02	01	01	05	04	01
		SERIOUS	18	17	02	15	17	03	27	24	11
		MINOR	14	—	—	06	—	—	14	—	—
			37	21	03	23	18	04	46	28	12
6	Which are the Hot spot areas/ major concern roads in relation traffic accident										

Compiled by: Signature and stamp...

Name ....

Re: OC CID (Records) assist and ensure that

D.C STATION BULIISA DISTRICT P.O. BOX 35, BUNDIBUGYO

THE PROPOSED UPGRADE OF 12.07 KM ROADS TO TARMAC IN BULIISA TOWN COUNCIL AND BUTIABA TOWN COUNCIL AND RENOVATION OF BULIISA TOWN COUNCIL OFFICES UNDER ARSDP CATCH 2 PROJECTS.....

Domestic violence											
1	Total number of domestic violence cases registered in year?		Year 2019			Year 2018			Year 2017		
			.....			.....			.....		
2	Categorical number of domestic violence cases registered in year? Such as; Rape, assault, etc.	**Category**	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
Crime rates											
3	Categorical number of registered crime cases in year? Such as; Theft, child neglect	**Category**	Year 2019			Year 2018			Year 2017		
			Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
		THEFT	61	56	05	115	110	05	42	41	01

Traffic related											
4	Number of traffic accident cases registered in year?		Year 2019			Year 2018			Year 2017		
			.....			.....			.....		
5	Categorical number of traffic related injuries cases registered in year? Such as; Fatality, serious, minor etc.	**Category**	Total No	Men	Women	Total No	Men	Women	Total No	Men	Women
6	Which are the Hot spot areas/ major concern roads in relation traffic accident										

Compiled by: Signature and stamp.....

Name .....