Republic of Uganda

Ministry of Water and Environment

Integrated Water Management and Development Project-P163782

Environmental and Social Management Framework-ESMF

March 2018

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
ADB	Asian Development Bank
BADEA	Arab Bank for Economic Development in Africa
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
CAS	Country Assistance Strategy
CMP	Catchment Management Plan
CPF	Country Partnership Framework
DANIDA	Danish International Development Agency
DEA	Directorate of Environmental Affairs
DWD	Directorate of Water Development
DWRM	Directorate of Water Resources Management
FIRRI	The Fisheries Resources Research Institute
FPO	Focal Point Officer
FSTP	Feacal Sludge Treatment Plant
IWRM	Integrated Water Resources Management
JICA	Japan International Cooperation Agency
MFPED	Ministry of Finance, Planning and Economic Development
MoWE	Ministry of Water and Environment
NDP	National Development Plan
NEMA	National Environment Management Authority
NEMP	National Environment Management Policy
NFA	National Forestry Authority
NWSC	National Water and Sewerage Corporation
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SESA	Strategic Environmental and Social Assessment
SIDA	Swedish International Development Cooperation Agency
PIT	Project Implementation Team
UNICEF	United Nations Children's Education Fund
UWA	Uganda Wildlife Authority
UWASNET	Uganda Water and Sanitation NGO Network
UWCAS	Uganda Water Country Assistance Strategy
UWSS	Urban Water Supply and Sanitation
WMDP	Water Management and Development Project
WMZ	Water Management Zones
WUC	Water User Committee
WSDF	Water Sector Development Fund
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

INTRODUCTION AND PROJECT DESCRIPTION

The proposed Integrated Water Resources Management and Development Project (IWMDP-P163782) will be implemented by the Government of Uganda through the Ministry of Water and Environment (MOWE) and the National Water and Sewerage Corporation (NWSC). **The project development objective (PDO) is to (i) improve access to water supply and sanitation services (WSS); (ii) strengthen capacity for integrated water resources management; and (iii) enhance the operational performance of selected service providers.** The project builds on and scales up the achievements of the Water Management and Development Project (WMDP-P123204). The Project will also focus on improving water and sanitation services in small towns and rural growth centers (RGCs) with special attention to the vulnerable Northern and Eastern regions and those communities hosting refugees displaced from conflicts and famine. The Project will also support RGCs in Uganda's Central and Midwestern regions given low water coverage levels, high cholera cases, and the opportunity to spatially balance development. Furthermore, the Project will provide technical assistance aimed at consolidating water sector reforms to support efficient and effective service delivery models for small towns and rural growth centers areas. Specifically, the project will focus on; (i) improving access to water supply and sanitation services in urban, small town and rural growth centers, including refugee hosting communities in the country; (ii) improving water resources management; and (iii) institutional strengthening to ensure improved service delivery and sustainable water resources management in Uganda. In addition to design and construction of infrastructure, the projects shall encompass environmental and social safeguards, water source protection through the adoption, promotion and implementation of efficient environmental, social and water source protection strategies and management methods to ensure sustainability of the installed infrastructure as well as water sources and their catchments.

Project Components

The IWMDP is comprised of four (4) components, namely: (1) WSS in Small Towns and RGCs and Support to Refugee and Host Communities; (2) WSS in Urban Large Towns; (3) Water Resources Management and; (4) Project Implementation and Sector Support. These are briefly described below:

Component 1 –WSS in Small Towns and RGCs and Support to Refugee and Host Communities (US$163.3 million)

Subcomponent 1.1: Support to Small Town and RGCs (US$ 79.7 million)

Carrying out of activities to improve water supply and sanitation in selected small towns and rural growth centers[1] in the Recipient's territory, said activities to consist of: (i) constructing and rehabilitating water

[1] Small Towns mean any of the following areas of the Recipient's territory: Busia, Namungalwe-Kaliro, Kyegegwa-Mpara-Ruyonza, Namasale, or such other small towns as may be elaborated in the Project Implementation Manual from time to time. Rural Growth Centers means any of the following areas: Kasese cluster (Kyarumba, Kyondo, Lake Katwe, and Kisinga), Bitsya -Kurungu, and 30 rural growth centers benefiting from solar powered piped water systems as defined in the Project Implementation Manual.

supply and sanitation facilities, as well as providing associated services, including engineering, environmental and social studies and supervision of construction activities; (ii) providing technical assistance to selected small towns, including the preparation of fecal sludge management assessments and integrated sanitation plans; (iii) strengthening the capacity of selected Regional WSS Authorities (UOs)[2] in the areas of operational and financial management; and (iv) carrying out of environmental and social management related activities with a view to protecting water sources and sensitizing communities.

Subcomponent 1.2: Support to Refugee and Host Communities (US$83.6 million)

This subcomponent will, with financing from the IDA 18 Refugees Sub-Window, support activities designed to improve the sustainable provision of WSS services to refugee settlements and host communities.[3] This sub-component will target the districts of Yumbe, Arua, Moyo, Adjumani, and Lamwo in northern West Nile, where about 70 percent of the refugees in Uganda are being hosted, as well as the mid-west district of Kiryandongo, which is currently experiencing large inflows of refugees from South Sudan.

Carrying out of activities to improve water supply and sanitation in selected refugee hosting districts, said activities to consist of: (i) constructing and rehabilitating water supply and sanitation facilities, as well as providing associated services, including engineering, environmental and social studies and supervision of construction activities; (ii) providing technical assistance to selected small towns, including the preparation of fecal sludge management assessments and integrated sanitation plans; (iii) strengthening the capacity of selected Regional WSS Authorities (UOs) in the areas of operational and financial management; (iv) carrying out of environmental and social management related activities with a view to: (A) protecting water sources and sensitizing communities; and (B) addressing the specific needs of refugees and host communities; and (v) strengthening the capacity of [MOWE] to develop and carry out water supply and sanitation sector policies and programs with a view to promoting a more sustainable and efficient service delivery at refugee settlements.

Component 2 –WSS in Urban Large Towns (US$116.1 million)

Carrying out of activities to improve water supply and sanitation, said activities to consist of: (i) constructing and rehabilitating water supply and sanitation infrastructure in the municipality of Mbale and Mable Cluster4 ("Mbale Water and Sanitation Sub-Project"); (ii) constructing water supply system for the municipality of Gulu ("Gulu Water Supply Sub-Project"); and (iii) undertaking construction supervision activities; and (iv) carrying out of environmental and social management related activities with a view to protecting water sources and sensitizing communities.

Component 3 – Water Resource Management (US$18.5 million)

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[2] Selected Regional WSS Authorities refer to five regional Umbrella Organizations (Northern, Midwestern, Southwestern, Central and Eastern) appointed as the water authorities in change of specific water and sanitation service areas as gazetted by the MOWE on July 14, 2017 (The Uganda Gazette, Volume CX No. 39)

[3] Uganda's eligibility for the IDA 18 Refugee Sub-Window financing is stipulated in the September 29, 2017 Board document titled "IDA18 Refugee Sub-Window – Board Consultation on Eligibility – AFR, MNA, SAR."

[4] Mbale Cluster includes the towns of Butaleja- Busolwe and Budaka - Kadama-Tirinyi-Kibuku.

Carrying out of integrated water resources management activities, said activities to consists of: (i) undertaking catchment management measures in Selected Sub-Catchments[5], including soil and water conservation, riverbank protection and restoration, and alternative livelihood for affected communities; (ii) preparing a water resources strategy for the Albert Water Management Zone; (iii) preparing catchment management plans for Select Priority Sub-Catchments [6] ; (iv) undertaking a national groundwater management study; and (v) strengthening water resource monitoring and information systems, including (A) the carrying out of the Water Information System at the national level; (B) the installation of hydrologic monitoring systems; and (C) the rehabilitation of the National Water Quality Reference Laboratory.

Component 4 – Project Implementation and Sector Support (US$10.1 million)

Carrying out of Project implementation and coordination support activities, said activities to consist of: (i) coordinating planning, monitoring and reporting and supervision of the Project; (ii) providing training to Implementing Agencies on World Bank procurement, environmental and social policies and procedures, and financial management; and (iii) establishing the Project Support Team.

Undertaking of capacity building activities, such activities to consist of: (i) preparing a water supply and sanitation sector financing study with a view to support the Recipient's Strategic Sector Investment Plan; and (ii) strengthening MOWE's regulatory functions, including its: (A) Utility Performance Management and Information System (UPMIS); (B) the monitoring and operations and maintenance framework; (C) performance contracts with Water Supply and Sanitation Authorities[7]; and (D) preparing regulatory guidelines on water safety plans, sanitation and pro-poor approaches.

Uganda Refugee status

Uganda hosts a multi-ethnic group of refugees who include the Rwandese, Congolese, Ethiopians, Kenyans' Sudanese and Burundians. Uganda is the third largest refugee-hosting country in Africa. As a result of ongoing conflicts and instability in the Democratic Republic of Congo (DRC), Somalia and South Sudan, Uganda is currently hosting over 1,300,000 refugees and asylum-seekers. By October 2017, it estimated that, a total of 1,321, 207 refugees and asylum seekers were living in Uganda. Of these, 1,034,16 are South Sudanese. Under the Northern Cluster sub-component, IWMDP will support interventions in the refugee hosting districts of Yumbe, Adjumani, Moyo, Arua, Lamwo with refugee numbers standing at 1,082,667 based on UNCH October Report, 2017.

Common conflicts between refugees and host communities

The relationship between refugees and the host communities in Uganda has largely been peaceful, despite isolated clashes and disputes between the two sections of these communities. The conflicting relationship between hosts and refugees in many cases serves to emphasize the importance of identifying main sources of conflict and co-existence in the relationship for achieving a peacefully relationship. The combination of limited livelihood opportunities in the host community and imbalance of humanitarian assistance appear to be the greatest challenges for promoting more coexistence. Some collaboration between host and refugees are identified at individual levels through socio-economic impacts and

[5] Selected Sub-Catchments refers to Kochi, Aswa II, Lwakhakha and Awoja sub-catchments.

[6] Selected Priority Sub-Catchments will be defined in the Project Implementation Manual. These sub-catchments will be in the Albert and Kyoga WMZs.

[7] WSS Authorities include the National Water and Sewerage Corporation (which it is also the Project Implementing Entity) and Regional WSS Authorities – UOs.

humanitarian initiatives. Nevertheless, situations of conflict in the relationship are more common and a challenge towards coexistence. Research on this subject reveal that, host communities' experiences of refugees' impacts are much related to how their relationship with the refugee population develops.

The presence of refugees has on some occasions created tensions and conflicts with host communities which is manifest in areas such as increased ***pressure on natural resources especially wood and construction materials; conflicts over access to water,*** given isolated locations of the settlements, access to clean waters is still a challenge for the women and children and in some instances, women fallen victims of rape in the search for water over long distances; there are also ***counter allegations over thefts of crops by refugees, conflicts over delivery of social services*** occasioned by the huge influx of refugee population into the refugee hosting areas in West Nile thereby putting major strains on services in those areas which were already quite overburdened and/or lacked proper investment. ***Conflicts over limited livelihoods sources.*** Other sources of conflict include ***sexual and gender-based violence*** (SGBV) is among the most serious protection concerns and priorities in Uganda refugee operations and is manifested in various forms including rape, sexual assault, domestic violence, early and forced marriages, denial of resources and harassment.

Objective of the ESMF

Compliance of the project to environmental requirements of the World Bank and Government of Uganda shall be ensured through diligent application of an Environmental and Social Management Framework (ESMF) and site specific Environmental and Social Impact Assessments (ESIAs)/Environmental and Social Management Plans (ESMPs) during implementation. For subprojects that have complete detailed engineering designs, their specific ESIAs/ESMPs have reviewed and cleared by the Bank in 2016 and also have been consulted upon and disclosed. These subprojects include Mbale WSS (component 2) and Busia WSS (component 1). However, the Busia ESIA has been updated following three key changes in site/location of some components of the system:

a. the water intake,
b. the water treatment plant (WTP), and
c. the faecal sludge treatment facility (FSTF).

The Busia ESIA and RSA will be resubitted for Bank approval and disclosed. Mbale WSS shall also be re-disclosed to facilitate documentation and incorporation of any comments that the stakeholders may have before commencement of its works implementation. For all other subprojects included under Components 1, 2 and 3, MOWE has prepared this ESMF given that their feasibility and detailed design studies have not been undertaken. The ESMF has been prepared in accordance the WB Environmental and Social safeguards policies and Environmental Laws of Uganda.

The purpose of the ESMF is to ensure that planned activities and interventions under the IWRDP are undertaken in a manner that avoids and minimizes environmental and social impacts as much as possible. Where they cannot be avoided, the ESMF identifies and assesses such impacts and outlines necessary mitigation measures following relevant Government of Uganda environmental and social legislation, and World Bank's safeguards policies amongst others as well as international best practice. It summarises likely environmental and social risks and their mitigation measures that need to be specified and managed during project implementation. Specific details of envisaged risks cannot be clearly stipulated for now since details of the projects as well as locations are not clarified and fully known. The ESMF describes the process of how risks will be identified, how corresponding plans are developed and how this ESMF will be amended to reflect these risks.

Thus, in summary, this document provides an Environmental and Social Management Framework (ESMF), which is to be used by the IWMDP to ensure that all environmental and social safeguards are adequately addressed. Specifically, the main purpose of the ESMF is to (a) Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of investments to be financed under the project; (b) Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project investments; (c) Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF and the subsequent ESIAs/ESMPs, as applicable; and (d) Provide practical information on resources required to implement the ESMF requirements.

Screening for climate change

Preliminary screening for climate change and disaster risks was done as per requirements for the project's three components. The identified risks included extreme temperature which will likely trigger an increase in potential evapotranspiration, an increase in the annual variability of precipitation and extreme precipitation events which also are likely to cause floods which can be hazardous to local communities, livestock and hinder agricultural activities. To address these risks, the project includes source protection measures such as restoration of riverine vegetation, reforestation, buffer zone protection that will help reduce effects of flooding and protect the surrounding environment. These practices also help increase groundwater recharge and ground cover which reduces evapotranspiration rates and helps conserve water resources. The project will undertake further consultations with the relevant stakeholders to ensure that the design of the water infrastructure considers the associated risks.

Legislative Framework and Environmental Assessment Category & Process

The National Environmental Act, 1995 is the principal law governing environmental management and conservation in Uganda. Many supporting regulations are also applicable to water resources management and include:

a. The Water Act, Cap 152, 1997;
b. The Land Act Cap 227, 1998;
c. The Water Resources Regulations, 1998;
d. The Water (Waste Discharge) Regulations, 1998;
e. The Environmental Impact Assessment Regulations, 1998;
f. The National Environment (Waste Management) Regulations, 1999;
g. The National Environment (Standards for Discharge of Effluent into water or on land) Regulations, 1999;
h. The National Environment (Wetlands, River banks and Lake Shores Management) Regulations, 2000.
i. Draft Standards for Air Quality Management, 2007;
j. The National Environment (Noise Standards and Control) Regulations, 2003;
k. National Environment Instrument (delegation of waste discharge functions) 1999;
l. National Environment Notice (designation of Environmental Inspectors), 2000;
m. National Policy for the Conservation and Management of Wetland Resources, 1995; and
n. The National Environmental Management Policy, 1994;

Implications on the World Bank Safeguard Policies

With regards to World Bank safeguard requirements, the following Operational Policies are triggered by the Project and will require specific safeguard provisions. The policies include:

a. Environmental Assessment (OP 4.01),
b. Natural Habitats (OP 4.04),

c. Forests (OP 4.36),
d. Physical Cultural Resources (OP 4.11),
e. Safety of Dams OP/BP 4.37,
f. Involuntary Resettlement (OP 4.12), and
g. Projects on International Waterways (OP 7.50).

The World Bank General Environmental Health and Safety Guidelines and the Industry Sector Guidelines for Water Supply and Sanitation also apply to the project. Following the environmental and social screening of the proposed project activities, the Project is classified as Environmental Assessment (EA) Category B because the anticipated negative impacts will be localized, site-specific and small to moderate in scale. The project is not anticipated to generate any potential large scale, significant and/or irreversible impacts. It is also not located in environmentally sensitive areas, and its associated impacts can be mitigated with relatively standard mitigation measures. This therefore qualifies the project to be EA Category B. Any subproject that will be screened as category A will be excluded from project financing until the project is restructured to make way for financing as category A types of subprojects.

Gaps in the Uganda Legal Framework Vs the World Bank Safeguard Policies

It is worth noting that environmental management in Uganda has been largely supported by the World Bank, right from the development of the National Environment Management Policy in 1994, the National Environment Act in 1995 and the accompanying Regulations. Owing to this, most of the environmental requirements are largely influenced by the World Bank's Environmental and Social Safeguard Policies. Most of the provisions of OP 4.01 were adopted and as such the screening and assessment methodology is virtually the same as seen in the Uganda's EIA Guidelines of 1997. However, some of the differences include the following: first and foremost, the Ugandan Laws do not provide for Framework Approach (ESMF and RPF) but rather only specific instruments (ESIA, ESMP, Environmental Audits). This ESMF prepared for IWMDP in line with OP 4.01 will guide the preparation of the specific instruments. Independent review is not specifically provided for under EIA Regulations of Uganda and as a result the review of ESIAs is commonly reviewed by government agencies, whereas the OP 4.01 provides for Panel of Experts to for Category A type projects. Under OP 4.04 Natural Resources, Uganda lacks Regulations to implement the National Forestry and Tree Planting Act and the Wildlife Act. Therefore, OP 4.04 and OP 4.36 on Forests shall be used to assess any impacts on natural habitats. On OP 4.11 Physical Cultural Resources, the Ugandan legal framework is limited in scope. For example, it does not cover certain aspects such as the intangible heritage. These are the salient environmental gaps between the Environmental Safeguard Policies and the Government of Uganda Environmental requirements. Where gaps exist, the World Bank Safeguard Policies shall take precedence especially on matters of preparation, review and approval of ESMF which is not explicitly provided in the National Environment Act Cap 135. The other area is under OP 4.12 (Involuntary Resettlement) whereby Uganda's Land Act legal framework is restricted to fair, adequate and prompt compensation (cash), while the World Bank policy requires the need to provide alternative land, resettling the Project Affected Persons (PAPs) to levels or standards of livelihood like or better than before compensation. The Ugandan legislation also does not provide for restoration of livelihoods, resettlement assistance and compensation at replacement value. Under circumstances like these regarding short-comings in the Uganda law on compensation and ESMF process, the provisions of OP 4.12 shall be applied.

The project will also apply the World Bank Industry Specific Water and Sanitation (and Waste Management Facilities) EHS Guidelines. In addition to this, the Bank has put in place a set of Environmental, Social, Health and Safety (ESHS) Enhancements for Standard Procurement Documents

(SPDs) and Standard Bidding Documents (SBDs) which shall be applicable for all new works contracts for which the relevant SBD/SPD are used.

ESIA/ESMP preparation, review and appraisal process

The ESMF provides the environmental impact assessment procedures, reporting systems, and responsibilities to be adopted by the implementing agencies during the implementation of IWMDP. The tools and mechanisms provided include:

a. Screening of proposed sub-projects;
b. Steps to be taken for preparation of an ESIA, including submission to the World Bank for clearance and to NEMA for environmental approval/ issuance of EIA-Certificate of Approval;
c. Preparation of periodic (12-36 months) environmental and social audits of the IWMDP;
d. Guidance for identification of the potential environmental and social impact of subprojects;
e. Compliance mechanisms; and
f. Sample terms of reference for preparation of ESIAs.

Stakeholder and Public consultations

To ensure that key interests of the public, at various levels of governance, are addressed and incorporated into the design and implementation of the IWMDP safeguard tools, stakeholder consultations were carried out as part of the ESMF and RPF preparation processes.

The Consultants in close collaboration with MoWE conducted rapid stakeholder consultations at various levels of governance to solicit information on the implementation of IWMDP subprojects, and at the same time tease out the likely generic impacts of the proposed sub-project types. This was undertaken between January 15-25, 2018 for the following districts:

a. MoWE and NWSC: to provide clarity and available information on the planned sub-projects, implementation experience of WMDP and safeguards capacity needs/gaps;
b. National level consultations with relevant Agencies: NEMA, NFA, UWA, MAAIF, MLHUD, UNHCR and UWASNET (Water NGO rep); aimed at identifying their institutional and sector requirements in relation to the proposed project, both during planning and implementation;
c. Local Government level (Districts and Urban Councils/Municipalities): Arua District and Municipality, Bushenyi Municipality, Katwe-Kabatooro, Koboko, to tease out the WMDP implementation lessons for Water Supply and Sanitation projects, Adjumani, Moyo and Arua to tease-out refugee host communities aspects that need to be taken into consideration, Gulu Municipality with associated small towns and rural growth centers (Kamdini, Minakulu, Bobi, Palenga, Barogal) and Kyegegwa-Mpara-Ruyonza to tease out aspects associated with water supply and sanitation management and Buhweju (Bitsya) to tease out aspects of Gravity Flow Schemes and CMPs.

Consultations were undertaken using key informant interviews and focus group discussions. Questionnaires were developed to guide the discussions and community meetings were held at the village level.

Based on the consultation findings, the IWMDP is supported by stakeholders especially where project investments will have a positive impact on improving social and public welfare and addressing environmental concerns primarily those related to wetland degradation, pollution of water resources and water shortage. Social concerns highlighted in the consultations relate to displacement of households, land availability and ownership, land conflict, and employment related to labor camps.

Resettlement is typically addressed during the sub-project development as well as planning by the respective Local Governments in ensuring availability of land for the respective sub-projects as captured in their Development Plans (District/Sub-County/ Municipal Development Plans). This is one of the key aspects looked at during the environmental and social screening and impact assessment. All sub-projects shall therefore be screened to confirm availability of land before proceeding with its preparation.

A consistent concern across the districts and urban areas is the need to address gaps and build capacity within the district, municipal councils and sub-counties to improve environmental management and ultimately support the development and implementation of water management projects. These concerns will be addressed in the IWMDP through the various training and capacity building initiatives proposed under Component 4 (Institutional Strengthening) which are budgeted for under the ESMF.

Main environmental and social impacts of the IWMDP

Typical positive impacts

The Project supports a number of infrastructure investments, including construction and rehabilitation of water supply systems, rehabilitation and expansion of wastewater treatment systems, construction of sewers and fecal sludge treatment facilities, on-site sanitation facilities, integrated water resources management measures, and renovation of water quality laboratories, among others. These sub-projects will largely generate positive impacts contributing to public health, provision of water to refugee hosting communities will address dire water needs in such communities and go along way to address conflict areas between the communities and refugees, availing water will go a long way to improved delivery of social services such as health and education in the target areas, improved water availability will enable women save time for other household engagements, and environmental sustainability through restoration of river banks amongst others.

Anticipated negative impacts

The associated negative impacts shall be generated during construction and operational phases. The subprojects are not likely to result in significant adverse environmental and social impacts if carefully managed as their main objective is to provide local communities with adequate financial and technical support for local level development linked with integrated water resources management, improved water supply and sanitation.

However, if not carefully designed and implemented, these types of subprojects can lead to negative environmental and social impacts, particularly those which entail investments in infrastructure development. Furthermore, weak or inadequate capacity for designing, managing and monitoring subprojects can lead to poor design and implementation and exacerbate adverse impacts both during construction and operation. Physical civil works are expected to generate negative environmental and social impacts including health and safety concerns, effluent discharge-related pollution, limited land take for water transmission and distribution infrastructure though these will lie close to the existing road reserve, and possibility of labour influx and associated impacts. Possible impacts during construction include impacts on water bodies associated to earthworks and wastewater generated from construction activities; emissions of particulate matter by earthworks and removal of vegetation cover; occupational, health, and safety (OHS) risks; and social misdemeanor by workers. Summary of other potential adverse environmental and social impacts (both direct and indirect) of the proposed IWMDP include the following: generation of cut to spoil materials whose transportation and disposal will require proper management, including generation of other solid waste during construction and operation of the planned facilities; impacts of water intake and discharge structures on the water bodies; HIV/AIDS concerns will

likely increase due to influx of people to the areas in search of employment opportunities; Indirect and induced impacts associated with accelerated socio-economic development due to improved water supply, sanitation and irrigation services. The impacts during construction phase will be temporary while works are carried out. During the operation phase, the potential risks include unpleasant odors and noise from the operation of sanitation facilities; inadequate sludge management and wastewater effluent discharges; possible impacts on surface and/or ground water due to leakages from and intrusion of storm water to the facilities (sewers, manholes, ponds, an septic tanks); and impacts of water intake on environmental flows and aquatic ecosystems, including migratory fish species.

The following are the likely positive environment and social (direct and indirect) impacts of the Program and will contribute to other beneficial initiatives supporting the Project:

a. Construction and rehabilitation of water and sanitation facilities will have significant positive impacts on the health of the communities and populations in the project targeted areas. This will go a long way towards contributing to Uganda's achievement of the Sustainable Development Goals; SDG#3 - ensuring healthy lives and promoting well-being for all, at all ages, SDG#4 - ensuring availability and sustainable management of water and sanitation for all and SDG#10 - reducing inequalities within and among countries;
b. Overall, the concept of catchment management planning of environmental resources as advanced in the program has a number of benefits especially its holistic approach to the conservation and protection of ecosystem goods and its services. It builds complementarity, synergy and eliminates duplication of effort in environmental management;
c. The IWMDP is cognizant of the transboundary nature of environment hence, it seeks to bring related and key stakeholders responsible for the management of given natural resources in neighbouring districts and countries on board in the management of the project interventions;
d. Investments geared towards developing capacities of the stakeholder institutions that manage the natural resources will go a long way to ensuring good environmental governance of the natural resources, hence ensuring their sustainability;
e. The boreholes, wells and supplies derived from springs will make safe water fully available to the populations as well as their assets emanating from projects in livestock watering points and associated animal tracks (reducing or eliminating prevailing agriculturalist/pastoralist conflicts) and small scale agricultural activities and essentially improve their quality of life;
f. Investments in river banks stabilization will protect the rivers from siltation and sedimentation from run-off;
g. Investments in rainwater harvesting will ensure availability of water supply for domestic and agricultural use including livestock production. This will help communities move from rain fed agricultural production and reduce water use conflicts during the rainy seasons;
h. Afforestation programmes will have a multiplicity of social, economic and environmental benefits in terms of contribution to carbon sequestration, supply of firewood and source of income at household and local government levels;
i. The activities of the program will help to identify and to implement the necessary measures for the protection of biodiversity areas thus conserving the wealth of the species at the local and national level. Also, these investments will contribute to combating desertification; enhancing reforestation, soil restoration and the implementation of national conservation activities.
j. The water catchment basins will be better used for the socio-economic benefits of the communities whilst at the same time establishing sound management practices to conserve water resources.

Mitigation plans

The associated environmental and social impacts can be reversed, are temporary in nature and scope, and can be easily and cost-effectively mitigated. It is also expected that impacts will be site-specific and may not affect an area broader than the sites of the physical works, suffice to add that implementation will be cognizant of environmental and social context where the subproject will be situated. The anticipated negative impacts will be localized, site-specific and small to moderate in scale. All project adverse impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance. For instance, the treated effluents from wastewater facilities (ponds and fecal sludge treatment facilities) will not generate significant impacts, if the facilities are operated and maintained according to design standards. With respect to AC, the environmental management plan will include management measures for the removal, packaging, transportation and disposal of existing asbestos waste, following additional guidance that will be provided by NEMA for handling such hazardous materials, and in line with the World Bank's Water and Sanitation (and Waste Management facilities) Environmental Health and Safety Guidelines. Works and equipment will be designed based on technical studies to ensure safe yield from groundwater and surface water resources. The water and sanitation facilities are relatively small. The largest interventions are in Gulu (pop. 300,000) with the construction of a new surface water supply system of 30,000 m3/day and Mbale (pop. 163.314) with the construction and rehabilitation of water supply works and sanitation facilities.

As part of the ESIA process, site specific Environmental and Social Management Plans (ESMPs) containing among other mitigation measures listed in the previous paragraph above will be prepared and implemented. Effective implementation of ESMPs will ensure that the appropriate mitigation measures have been undertaken to avoid and/or minimize any potential impacts resulting from the proposed project activities. The MoWE shall put in place coordination arrangements to closely work with NEMA and D/MEOs on the supervision of the ESMPs implementation within the overall plan for the project. Accordingly, the supervision arrangements for the ESMPs shall summarize key areas on which supervision will focus such as critical risks to implementation of the ESMPs and how such risks will be monitored during implementation and any required remedial measures undertaken. If identified as a requirement of the subproject through the screening process, a Resettlement Action Plan, a Physical Cultural Resources Management Plan, dam safety measures or a combination of these, will be prepared alongside or as an integrated part of the ESMPs. A generic Chance Finds Procedure has been prepared as part of this ESMF and shall be customized to each ESMP. Finally, a Grievance Redress Mechanism has also been recommended to be part of all the ESMPs developed during implementation. This is aimed at ensuring transparency and accountability. The GRM will have a clear set of goals and objectives and a well-defined scope for its interventions and will contain set of procedures for receiving, recording, and processing complaints. The feedback mechanism is emphasized as one of the key aspects of GRM that require constant checking and supervision by the client/ MOWE.

To ensure proper implementation of the ESMPs, the client (MoWE/NWSC) will provide budget for implementation of the required mitigation measures. Actions that will be implemented by the Contractors shall be included in the respective bidding documents, Contracts and Contractors' ESMPs. Those that shall be implemented by MoWE/NWSC/Local Governments shall equally be included in Annual Work-plans and Budgets, and accordingly implemented, monitored and reported.

Cumulative impacts of sub-projects

Based on availble information and in ordinary perception of the project, it gives impression that, the works will trigger large negative impacts which trigger its possible categorization as a Category A type. However, the study has analyzed project information, conducted consultations and well as site visits and based on all these, it is concluded IWMDP is a category B type taking into account the following:

a. The proposed subprojects are geographically dispersed; water supply systems will withdraw from different water sources; and wastewater treatment systems will discharge in different and separate waterway. Furthermore, wastewater systems are designed to meet effluent standards and constructed wetlands are also added to fecal sludge treatment facilities to further reduce flow and pollution loads into waterways. Above all, only a limited number of communal sanitation facilities per town (for markets and schools) are proposed and their location will follow design standards to avoid contamination of waterbodies;
b. Secondly, water supply systems will be designed based on technical studies to ensure safe yield from groundwater and surface water resources. In addition, IWMDP will finance a national groundwater management study to support implementation of groundwater development and management strategies to regulate and control activities that might compromise groundwater availability and quality;
c. It is also noted that, the proposed project activities are not located in any environmental sensitive areas or in areas where indigenous populations live;
   The Project will support a range of infrastructure investments, including construction and rehabilitation of water supply systems, rehabilitation and expansion of wastewater treatment systems, construction of sewers and fecal sludge treatment facilities, on-site sanitation facilities, integrated water resources management measures, and renovation of water quality laboratories, among others. These interventions will instead address the current public health risks in urban areas whose systems are glaringly characterized by broken and over-loaded sewers;
d. Physical resettlement is considered minimal and mostly temporarly because most of works involve installation of transmission and distribution lines, which will to a large extent, run along the existing road reserves. Fences, walls, kiosks, and crops are what will be mostly impacted - Very few homes and businesses will need relocation from land to be acquired for larger interventions (reservoirs, fecal sludge treatment, etc.)
e. No doubt, the planned physical civil works in the sub-projects are expected to generate negative environmental and social impacts including health and safety concerns, effluent discharge-related pollution, land take, and possibility of labor influx. These impacts can be reversed, largely of temporary nature and scope, and can be easily and cost-effectively mitigated. It is also noted that, that impacts will be site-specific and may not affect an area broader than the sites of the physical works.

In all, based on the environmental and social screening of the proposed project activities, the Project is anticipated to generate negative impacts which will largely will be localized, site-specific and small to moderate in scale. The project is not anticipated to generate any potential large scale, significant and/or irreversible impacts. Generally, project activities and its associated impacts can be managed with relatively standard mitigation measures. Overall by their nature, location, scale and scope, including the environmental and social context where the subproject will be situated. It is also important to note that, IWMDP subprojects will, individually have minimal adverse environmental and social impacts in their respective localities. Therefore, despite having several sub-projects, the cumulative negative environmental and social impacts of the project, virtually its negative impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance which correctly places the project under **Category B Type.**

Institutional roles and responsibilities

The Project will utilize similar implementation arrangements set up for the ongoing Water Management Development Project (WMDP) (P123204). The Project will be implemented by two agencies: Ministry of Water and Environment (MoWE) through line departments and National Water & Sewerage Corporation (NWSC). Within MoWE, three departments will be implementing the Projects: Directorate of Water

Development (DWD)- Urban Water and Sewerage Department, DWD- Rural Water and Sanitation Department, and Directorate of Water Resources Management (DWRM). NWSC, DWD- Urban, DWRM have satisfactorily implemented water and sanitation (WSS) and water resources management projects with the current WMDP, and therefore have accumulated extensive experience with Bank safeguards procedures. Under the proposed ESMF, there are several agencies that will play a key role in ensuring that mechanisms and recommendations provided in the ESMF for management of environmental and social aspects are implemented effectively. These include at the national level, the overall coordinating and implementing agency the Ministry of Water and Environment (MoWE), the key implementing agency the National Water and Sewerage Corporation (NWSC), and the National Environmental Management Authority (NEMA). DWD- Rural is new to WB financed operations, but it has implemented rural WSS projects with the African Development Bank. Knowledge transfer is expected between DWD- Urban and Rural given that they are under the same directorate.

At the local level, District Local Governments and Municipal Local Governments have supporting roles in implementing environmental and social requirements of the project. At the local level, the focal point persons shall include the District Environment Officers and Community Development Officers, Municipal Environment Officers and Community Development Officers.

The implementing agencies have a responsibility to ensure preparation and implementation of the specific safeguards instruments (ESIAs/ESMPs), as well as overall compliance enforcement of relevant national safeguards requirements and Bank safeguards policies

A capacity assessment of IAs revealed acceptable and satisfactory levels of technical know-how within these IAs for planning, design and implementation of WSS and WRM investments and technical assistance. There are four qualified safeguards staff in each implementing agency responsible for day to day implementation and supervision of safeguards requirements for the Project. There is also a Safeguard Coordinator who will provide technical advice, consolidate the progress reports from the project safeguards specialists, monitor the implementation of the ESMF, RPF and specific safeguards documents, and liaise with the Water Manamento Zones (WMZs) and other stakeholders (national, regional and district) on environmental and social issues related to the Project. The assessment indicates that there are dedicated and qualified staff to carry out safeguards activities. The proposed safeguards team will manage both the current WMDP and IWMDP for an estimated period of 6 months. The assessment concluded that there is not a need to add additional safeguards staffing at MoWE and NWSC given that the WMDP is closing in December 2018 and a projected low work load in 2018 for IWMDP given effectiveness period and planning phase. However, the Bank team in coordination with the IAs will monitor and assess the need of additional staff during implementation support missions.

The ESMF/RPF includes a section on implementation arrangement with the roles and responsibilities of key actors, technical assistance to support the capacity needs of the implementing agencies and supporting organizations (local government, consultants and contractors), and a detailed budget for the implementation of the ESMF/RPF and other social and environmental aspects. At least two training events per year will be conducted and they will be tailored to different target groups, including national implementing agencies, local and regional supportive structures, and contractors and supervision consultants. The ESMF includes tailored training and workshop programs. The Borrower is committed to implement the institutional strengthening and capacity building aspects included in the ESMF and RPF and the Bank will ensure that adequate budget is allocated to implement all proposed safeguards measures.

The ESMF outlines a number of indicators as part of the ESMF implementation which will be included in the overall project monitoring. In addition, a periodic (12-36 months) Environmental and Social Audit of project activities will be undertaken by the project and submitted to NEMA for review and advice on the corrective measures and compliance schedule.

Funds allocated to Component 4 of the IWMDP will be used to provide the technical assistance to support the capacity needs of the implementing agencies to apply the ESMF tools and requirements. Funding under this component would be used to undertake workshops, trainings and Environmental & Social monitoring which are needed to ensure effective implementation of the ESMF/ESMPs throughout the life of the Project.

Proposed implementation budget

It is estimated that the implementation of the ESMF including the management of associated environmental and social aspects of the project, training and capacity building will cost approximately **$2,500,000**. A 0.96% of total project amount has been recommended as budget allocation to environmental and social management. The breakdown is as follows:

a. Component 1: Small Towns and Rural Water Supply and Sanitation ($1,600,000)
b. Component 2*:* Large Towns Water Supply and Sanitation ($600,000)
c. Component 3: Water Resources Planning and Management ($200,000)
d. Component 4*:* Institutional Strengthening ($100,000)

The provisions proposed under Component 1 and 2 accounts for most of the costs in line with the proposed Project budget. The costs of preparing and implementing the safeguards aspects of the project are estimates as the size, type and location of the subprojects are not fully determined at this stage. It is not expected that there will be any significant land acquisition as part of the project; however, some financial provision has been made under contingencies in case there is any need. In there is a need for land acquisition, RAPs will be prepared and the project will consider any further re-allocation of budgets as needed when the project is reviewed at supervision and mid-term stages. Land acquisition and any associated compensation, shall be the responsibility of Government of Uganda, in accordance with provisions of OP 4.12.

Conclusion

The proposed project once implemented shall have more of positive benefits to the host communities and surrounding environment. The project impacts can easily be identified, medium to short term, site-specific, limited in scope, and readily mitigated using available technologies, and practices. The project EA Category is B, given the likely overall low impact of the project activities. The project will require establishment of clear implementation arrangements, and budget provision to ensure actual implementation of the environmental and social aspects, without which, the positive and expected benefits of the project will not be realized. Specific measures shall be implemented by Contractors, and such measures shall form part of the Contractors' ESMPs. Socio-economic impacts such as those associated to involuntary resettlement and compensation can be easily dealt with through appropriate Resettlement Action Plan in accordance with anticipated social impacts of the project in line with World Bank Involuntary Resettlement (OP 4.12) provisions.

1 INTRODUCTION

1.1 BACKGROUND

This document presents an Environmental and Social Management Framework (ESMF) for the Integrated Water Management and Development Project (IWMDP) [the Project] prepared under a consultancy for the Ugandan Ministry of Water and Environment (MOWE). The ESMF has been developed in tandem with a Resettlement Policy Framework (RPF) as one of a set of due diligence instruments required to address and manage environmental and social impacts associated with the IWMDP. The framework has been prepared to meet the Government of Uganda's and the World Bank's Environmental and Social safeguard requirements and will be disclosed as part of the project appraisal process. The MOWE is the agency responsible for implementing the provisions and recommendations outlined in the ESMF.

To aid various stakeholders to identify and effectively manage potential environmental and social impacts of the proposed project during implementation, environmental and social due diligence instruments must be prepared in accordance with international good practice as well as the World Bank Safeguards Policies and Government of Uganda (GoU) requirements.

This Environmental and Social Management Framework (ESMF) is prepared in compliance with the Safeguard Policies established by the funding agency, the World Bank (WB) as well as by the Government of Uganda Environmental and Social Management legal provisions which stipulate that funding of development plans and programs shall be subject to prior assessment and the mitigation of potential environmental and social effects of planned projects.

The ESMF has several principles which include will the following:

a. A systematic procedure for a participative process of environmental and social screening of the specific project areas and activities;
b. A stepwise process to identity and prevent potential environmental and social impacts of the planned project activities;
c. An environmental and social management plan to deal with arising environmental and social aspects during the implementation of the project;
d. A monitoring and evaluation system for the implementation of mitigation measures and actions;
e. Draft recommendations for training needs requirements for planning and monitoring of the project; and
f. A budget to ensure that the project has the necessary resources to achieve the desired objectives, particularly those related to the preparation and implementation of sub-projects/sub-components.

Thus, in summary, this document provides an Environmental and Social Management Framework (ESMF), which is to be used by the IWMDP to ensure that all environmental and social safeguards are adequately addressed for subprojects that will be identified during implementation. Specifically, the main purpose of the ESMF is to (a) Establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of investments to be

financed under the project; (b) Specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project investments; (c) Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF and the subsequent ESIAs/ESMPs, as applicable; and (d) Provide practical information on resources required to implement the ESMF requirements.

For subprojects that have complete detailed engineering designs, specific ESIAs/ESMPs were reviewed and cleared by the Bank in 2016 and also have been consulted upon and disclosed. These subprojects include: Mbale WSS (component 2) and Busia WSS (component 1). However, the Busia ESIA has been updated following three key changes in site/location of some components of the system: the water intake, the water treatment plant (WTP) and the faecal sludge treatment facility (FSTF). Mbale WSS shall also be re-disclosed to facilitate documentation and incorporation of any comments that the stakeholders may have before commencement of its implementation. For all other subprojects included under Components 1, 2 and 3, d this ESMF will be applied. A preliminary pre-screening of subprojects is also done as part of this ESMF to identify most likely instruments to be prepared.

1.2 METHODOLOGY

Since the IWMDP is a follow-on of WMDP, the ESMF of WMDP has been adopted and updated as appropriate. The updated ESMF clearly provides environmental and social screening guidance which must be undertaken as part of the design of each sub-project investment or intervention, and where necessary further Environmental and Social Assessment undertaken, and associated Environmental and Social Management Plans developed. These plans shall be reviewed and included as appropriate in all project implementation arrangements, including works procurement Bidding Documents and Contracts (for both construction and supervision).

The methodology used to prepare this ESMF was based on the following:

a. Literature review - of existing policies and legislation Government of Uganda and of World Bank Safeguard Policies, other ESMFs in the areas of water and sanitation;
b. Policy analysis - analysis of relevant national policies and legislation that are likely to have an impact on the implementation of the project;
c. The framework also considers findings of the Country Partnership Framework (CPF) for 2016-2021, the Uganda Water CAS (UWCAS), the Country Environmental Analysis (Oct 2011) and similar environmental and social assessments and frameworks undertaken for related initiatives such as the Nile Basin Initiative and the Lake Victoria Environmental Management Projects;
d. Interviews with key stakeholders - from relevant Ministries, Government Agencies, District Local Governments, Municipalities, NGOs, and World Bank staff;
e. Public Consultation process - public consultation meetings took place as part of compilation of this ESMF and a copy will be made available to the public for comments through the MOWE, WMZ offices as well as on the web of MOWE, NWSC, MGLSD, and selected participating Local Governments.

This ESMF is structured as follows: i) introduction and the objectives of the Environmental and Social Management Framework (ESMF); ii) Project Description; iii) an overview of the World Bank Safeguard Policies; iv) overview of Uganda's Environmental Policy and regulatory framework; v)description of possible environmental and social impacts of the project as well as recommendations for mitigation measures and actions; and vi) guidelines on how the environmental and social screening process should be conducted.

1.2.1 STAKEHOLDER AND PUBLIC CONSULTATIONS

To ensure that key interests of the public, at various levels of governance, are addressed and incorporated into the design and implementation of the IWMDP safeguard tools, stakeholder consultations were carried out as part of the ESMF and RPF preparation processes.

The Consultants in close collaboration with MoWE conducted rapid stakeholder consultations at various levels of governance to solicit information on the implementation of IWMDP subprojects, and at the same time tease out the likely generic impacts of the proposed sub-project types. This was undertaken between January 08-12, 2018 for the following districts:

a. MoWE & NWSC: to provide clarity and available information on the planned sub-projects, implementation experience of WMDP and safeguards capacity needs/gaps;
b. National level consultations with relevant Agencies: NEMA, NFA, UWA, MAAIF, MoLHUD, UNHCR and UWASNET (Water NGO rep); aimed at identifying their institutional and sector requirements in relation to the proposed project, both during planning and implementation;
c. Local Government level (Districts and Urban Councils/ Municipalities): Arua District and Municipality, Bushenyi Municipality, Katwe-Kabatooro, Koboko, to tease out the WMDP implementation lessons for Water Supply and Sanitation projects, Adjumani, Moyo and Arua to tease-out refugee host communities aspects that need to be taken into consideration, Gulu Municipality and associated small towns and rural growth centers (Kamdini, Minakulu, Bobi, Palenga, Barogal) to tease out aspects associated with water supply and sanitation management and Kyegegwa-Mpara-Ruyonza to tease out aspects of Gravity Flow Schemes and CMPs.

Consultations were undertaken using key informant interviews and focus group discussions. Questionnaires were developed to guide the discussions and community meetings were held at the village level. The ESMF has incorporated these consultations into the framework and will ensure that through the ESMF tools, concerns raised during the consultation are addressed. Where capacity building and training needs have been identified in these meetings, the ESMF has proposed a budget under the Project to accommodate these concerns.

1.2.2 PUBLIC DISCLOSURE

For projects such as the WMDP, the World Bank's Access to Information Policy requires that the ESMF and RPF are prepared and publicly disclosed in-country and at the Bank's website prior to project appraisal. This allows the public and other stakeholders to comment on the possible environmental and social impacts of the project, and for the World Bank Appraisal Team to strengthen the frameworks, particularly measures and plans to prevent or mitigate any adverse environmental and social impacts. To this end, this document will be publicly disclosed through the World Bank's website, and in public locations and websites in Uganda prior to project appraisal. The stakeholder consultations undertaken during compilation of the ESMF partly served the purpose of disclosing the

project to the stakeholders and their views, concerns and input has been considered, and will accordingly inform different design aspects of the project.

1.3 PROJECT BACKGROUND AND DESCRIPTION

1.3.1 BACKGROUND

Uganda, a low-income country of 39.3 million people (2015), has made significant progress in economic growth and poverty reduction over the last 30 years. Following policy reforms that allowed market liberalization and led to political stability, Uganda registered high economic growth between 1987 and 2010, with Gross Domestic Product (GDP) averaging 5.1 percent in the last five years[8]. Despite its economic growth, over a third of the population (34.6 percent) still live below the international poverty line of $1.90 per day in 2012).[9] The north-eastern region stands out as one of the most disadvantaged parts of the country with 43 percent of the residents living on less than one dollar a day and where 84 percent of the country's poor live. The main poverty challenges in rural areas are food insecurity, low agricultural productivity, a degrading natural resource base, and low access to basic infrastructure and services. In urban areas, the primary challenges are inadequate planning for rapid growth and low investment in infrastructure and services.

Rapid urbanization and increasing inequality between regions and between rural and urban areas pose a daunting challenge to Uganda and underscore the need to improve access to basic services. Uganda's population growth of over three percent per year is one of the highest in the world, and puts a considerable strain on public services**.** The urban population has increased from 12 percent in 2000 to 16 percent in 2015, compelling the government to act promptly to address the effects of rapid urbanization. Several urban small towns have emerged around the country, exerting more pressure as demand for basic services continue to escalate**.** Meanwhile, about 84 percent of the total population reside in rural areas where access to adequate water and sanitation services are significantly lagging, particularly in the northern and eastern parts of the country where poverty incidence is highest. Furthermore, the influx of more than 1.3 million refugees, from South Sudan but also from the Democratic Republic of Congo (DRC) and Burundi, settling mostly in the northern region has significantly increased the pressure on the already strained land, water resources and basic services.[10]

1.3.2 SECTORAL AND INSTITUTIONAL CONTEXT

Since the early 1990's, Uganda has made significant strides to build a comprehensive legal and well defined institutional framework to improve water supply and sanitation and water resources management. The Ministry of Water and Environment (MOWE) is responsible for determining priorities, setting policies and standards for water development as well as managing and regulating

[8] World Bank Data: Uganda Economic Overview (2017)

[9] Based on 2011 Purchasing Power Parity

[10] West Nile Region in the western part of northern Uganda is where most of the refugees are located.

water resources including water and sanitation services.[11] The National Water and Sewerage Corporation (NWSC), an autonomous public utility owned by the Government under the MOWE, is responsible for WSS provision in 30 large and 170 small towns.[12] Local authorities supported by the MOWE are responsible for provision of water and sanitation services in small towns and rural areas through direct provision, community-based organizations, or private companies. Significant policy reforms included the commercialization and modernization of the NWSC, decentralization and private sector participation in small towns, adoption of integrated water resource management (IWRM) principles in national policies, and creation of four Water Management Zones (WMZ). These reforms, coupled with significant capital investments have led Uganda to remarkable improvements in water supply service provision, especially in urban areas where coverage increased from 43 percent in 1990 to 77 percent in 2017, and have contributed to the existing capacity and professionalism of Uganda's water institutions.

Despite considerable progress in the water sector, challenges remain to improve water and sanitation delivery in small towns and rural areas, as well as to ensure water security and adequate sanitation in large urban centers. National water supply coverage of 77 percent in urban areas and 67 percent in rural areas mask service quality disparities between urban and small towns/rural areas. Except in Kampala and a few regional towns with piped water systems, most of the water supply is in the form of community point water sources.[13] In urban areas, 48 percent of households use piped water but that percentage falls to 33 percent in small towns and to nine percent in rural areas. Despite an acceptable level of functionality (80 percent in rural and small towns), a significant number of households still travel long distance to fetch water reducing their human capital opportunities. In large towns, sustaining expanded coverage and service improvements, while ensuring water security to support economic growth is one of the main challenges given insufficient public investments, technical difficulties to reach the most vulnerable as well as increasing climate variability. Per the United Nations Joint Monitoring Program (JMP) only 29 and 17 percent of the urban and rural population respectively have access to individual improved sanitation facilities. Sewerage coverage is very low, less than 7 percent for large towns and next to negligible in small towns. The low sanitation coverage indicates poor on-site sanitation conditions from unlined public and household toilets and inadequate wastewater treatment and fecal sludge management causing severe water pollution and related environment and public health issues.

In response to these challenges, the Government has developed programs and policies focused on improving WSS services in poor small towns and rural areas. In larger towns, the GoU is focusing on water and sanitation infrastructure investments to boost economic growth and water security in the

[11] Other relevant ministries include, the Ministry of Education and Sports (MoES) which is responsible for hygiene education and provision of sanitation facilities in schools; the Ministry of Agriculture, Animal industry and Fisheries (MAAIF) which is responsible for on-farm water use; and the Ministry of Health (MoH) which is responsible for hygiene and sanitation promotion for households through the Environmental Health Division (EHD). However, EHD has limited capacity hence MOWE is taking the lead in providing financing for hygiene and sanitation promotion.

[12] Large towns are identified as areas with a population greater than 15,000; small towns are between 5,000-15,0000 inhabitants; and rural areas are lower than 5,000 inhabitants.

13 Community point sources include protected springs, deep and shallow wells fitted with hand pumps. Piped water systems comprise a water source (spring, surface or borehole), storage tank and pipe distribution network with standpipes or household connections.

north and east districts. The Government is prioritizing Gulu and Mbale given their contributions to the country's economy and unmet demands. Gulu, the economic capital of the northern region is experiencing high population growth averaging 5.2 percent per year[14], with at least 70 percent of the population living below the poverty line. The town lies in the Upper Nile WMZ which is susceptible to dry spells often plunging the town into severe water shortages. Moreover, water supply coverage is extremely limited in the town, with piped water reported to be only four percent. The water supply situation is largely due to the absence of infrastructure development stemming from two decades of civil unrest. Since 2006, GoU is committed to revitalizing the north to enable the region to catch up with the rest of the country. The proposed project will support GoU's commitments to the north by augmenting water from the Nile to help meet Gulu's long term demand. Further to the east, Mbale a largely coffee producing district is dubbed the business hub of eastern Uganda due to its proximity to Kenya which allows for easier trade. Economic opportunity has spurred migration, which in turn has triggered rapid population growth and a mushrooming of new settlements that is stretching the capacity of service providers to deliver. By improving water supply and sanitation services in the town, the Project aims to uncover the town's economic potential.

While water resources support key sectors of the economy, namely hydropower generation, agriculture, fisheries, domestic water supply, industry, and navigation, the efficiency and sustainability of intervention under these sectors have recently been a concern in Uganda. This is mainly due to inadequate sectoral collaboration in planning and implementation, increasing frequency of floods and droughts, rapid population growth, environmental degradation and pollution of water resources leading to increased risks and vulnerability of Uganda's hydrological systems. Currently, surface water is depleting with over 50 percent of districts already facing water stress and scarcity. In addition, synergies are needed among various sectors to promote efficient use of water resources to meet various social and economic demands. To that end, the MOWE has adopted a catchment management approach for natural resources planning and development with multiple stakeholder involvement. The MOWE led the preparation of four Catchment Management Plans (CMPs) in two of the four WMZs, and is working on implementing their action plans, including water source protection to ensure adequate quantity and quality of water for meeting the various demands including domestic water supply. GoU has initiated several interventions based on the framework for catchment based IWRM that is aimed at strengthening water resources management and development that need to be consolidated and fully implemented across the country. This will be key in ensuring water security and sustainability of the rural and urban water supply and sanitation infrastructure among others.

The proposed Integrated Water Management and Development Project (the Project) builds on and scales up the achievements of the WMDP. It will ensure that WMDP meets its development objectives by implementing key water and sanitation investments in Gulu and Mbale and IWRM activities at the national, regional, and local levels. The Project will also focus on improving water and sanitation services in small towns and rural areas with special attention to the vulnerable northern region and those communities hosting refugees displaced from conflicts and famine. Furthermore, the Project

[14] NWSC 2014/5 Gulu Report

will provide technical assistance aimed at consolidating water sector reforms to support efficient and effective service delivery models for small towns and rural areas.

1.4 PROJECT DESCRIPTION AND COMPONENTS

The project development objective (PDO) is to (1) improve access to water supply and sanitation services; (2) strengthen capacity for integrated water resources management; and (3) enhance the operational performance of selected service providers. The Project will achieve this PDO through three strategic areas: (i) delivering the necessary water and sanitation infrastructure in targeted areas; (ii) supporting water related institutions (MOWE, local government, and service providers) develop and strengthen measures to establish and consolidate operational efficiency and service quality in small towns and rural areas; and (iii) strengthening national and regional capacity to improve IWRM. The Project's implementation approach will consider spatial differences between rural, small towns and urban large towns. It will also ensure that citizen engagement strategy, gender approaches, and sanitation and hygiene campaigns are included to foster behavior change and ownership within the population. Combined with infrastructure investments to support WSS services, the Project will integrate water source and catchment protection measures, comprehensive sanitation planning and service delivery support to ensure sustainability and increase resilience to climate variability.

1.5 PROJECT COMPONENTS

1.5.1 COMPONENT 1 – SMALL-TOWN AND RURAL WATER SUPPLY AND SANITATION

SUBCOMPONENT 1.1: SUPPORT TO SMALL TOWNS

The Ministry of Water and Environment is implementing WMDP to provide sustainable Water Supply and Sanitation Systems in the Towns of Rukungiri, Katwe-Kabatooro, Koboko and Palisa, Ngora-Nyero-Kumi. Construction is ongoing in the mentioned towns. However, it is worth noting that the due to budget shortfalls, works could not be undertaken the towns of Busia, Budaka, Busolwe, Butalejja, Tirinyi and Kibuku hence the need for reconsideration in the IWMDP to ensure provision of complete and appropriate services to these towns. This subcomponent will therefore finance activities designed to improve water supply and sanitation services in small towns, including (i) construction and rehabilitation of water supply systems coupled with water source and catchment protection; (ii) provision of sanitation facilities and technical assistance activities to support sanitation service chain management including fecal sludge management, integrated sanitation (i.e. fecal waste, solid waste, and drainage) planning, and Community Led Total Sanitation (CLTS)[15]; and (iii) utility management related activities, including communication, client identification surveys, improving billing and collection systems, and NRW reduction, to support operational and financial performance of participating service providers.

[15] Community Led Total Sanitation (CLTS) is an innovative methodology for mobilizing communities to completely eliminate open defecation (OD). Communities are facilitated to conduct their own appraisal and analysis of open defecation (OD) and take their own action to become ODF (open defecation free).

This subcomponent includes four subprojects: (i) Busia, (ii) Namungalwe-Kaliro, (iii) Kyegegwa-Mpara-Ruyonza, and (iv) Namasale,. This subcomponent is expected to be implemented by the MoWE, and its regional offices in the districts, in coordination with NWSC and local authorities.
The details of the sub-projects to be undertaken are hereby presented below:

PRIORITY 1 –BUSIA WATER SUPPLY AND SANITATION PROJECT

The Busia Water Supply and Sanitation Project Facilities will be located in Busia District, south-eastern part of the Eastern region of Uganda. At 202 km by road from Kampala, and at an average elevation of 1,180 m AMSL, Busia is located approximately between 33°05' E 00°10' N and 34°01' E 00°35' N (Busia District Report, 2009; NEMA, 2004). Covering 730.9 km² in land size, Busia District is bordered by Tororo District to the north, Kenya to the east, Lake Victoria to the south, Namayingo District to the southwest and Bugiri District to the west.

Though the Busia Project is planned with a focus on the Municipality, the Water Supply and Sanitation Project will equally serve satellite towns in the Sub-counties of Majanji, Lumino, Buhehe, Masafu, Masaba, Dabani, Buteba, Masinya and Sikuda. The proposed satellite towns in the Sub-counties of Majanji, Lumino, Buhehe, Masafu, Masaba and Dabani are located between the proposed water source (Lake Victoria) and Busia Municipality. Meanwhile, the satellite towns in the Sub-counties of Masinya, Sikuda and Buteba border Busia Municipality to the North.

The project is designed to serve the Municipality as well the satellite towns of sub-counties of Majanji, Lumino, Masafu, Dabani, Buhehe, Buteba, Masaba, Sikuda, and Masinya. The system will serve a population of 186,296 in 2040 as shown below:

Year	2018	2023	2028	2038	2040
Estimated Population	103,670	118,442	135,319	176,630	186,296

For water supply, water will be abstracted from L. Victoria in Majanji village, Majanji sub-county. The detailed scope of the work includes:

a. Lake Intake Structure
b. 9,100m^3/day Water treatment plant consisting of pre-chlorination, chemical coagulation and flocculation, sedimentation, filtration, clear water storage, final chlorination, wash water system and treated water pumps.
c. Treated water transmission consisting of two stages pumping i.e. treatment works to Butangasi, and boosting from Butangasi (150 m^3) to Dabani reservoir.
d. Storage reservoirs at Butangasi (500m^3) and Daban (1500 m^3)
e. Laying of 23.44 km of the transmission main
f. 44.640 km Distribution network for Busia town

The detailed design and tender documentation for Busia water supply and sanitation was carried out under the Water Management and Development Project Phase I. A comprehensive resettlement Action Plan was completed for Busia and approved by the Chief Government Valuer. This report will guide the compensation of Project Affected Persons. The ESIAfor this town sub project was completed in April 2017 with its approval and clearance from NEMA. The Busia ESIA was cleared by the World Bank on July 20, 2017.

However, three key changes in the site location of the Water Intake, Water Treatment Plant (WTP) and the Fecal Sludge Treatment Facility (FSTF)] have since been made. The WTP is located in the same locality (Majanji Village) as the Water Intake. The new site for FSTF is in Okame-Abochet Village in Busia Municipality (land title is available). Given the above changes, it is therefore necessary to update the ESIA and RAPs of Busia WSS to incorporate the new sites before its implementation under IWMDP. The updated Busia ESIA and RAPs will be disclosed both in-country by the MoWE and the World Bank at their Website.

SOURCE PROTECTION

Sub-catchment and Water Source Protection plans for Busia water supply was developed and will be used to guide source protection measures. The main activities to be carried out include; use of riverine vegetation to prevent run-off and sediment load, fencing/demarcation of lake shore and river banks, reforestation of native species and plantation of native fast-growing shrubs in immediate vicinity of water supply, restoration, improvement and protection of buffer zones including education and sensitization programs**.**

PRIORITY 2 – NAMUNGALWE-KALIRO WATER SUPPLY AND SANITATION PROJECT

Kaliro town council is located in Kaliro district about 35 km from Iganga town in Eastern Uganda. The scheme will be able to serve other RGCs along the Iganga-Kaliro stretch that are currently unserved with piped water. These include: Bukaye, Namunkesu, Namungalwe, Nambale, Nasuti, Naibiri and Nabitende. Based on a preliminary study, water supply would be from a tee-off the existing DN 300mm Steel NWSC Jinja-Iganga transmission main at Iganga Town. The scope of the work would also include a transmission main pipe, storage tank, distribution pipe networks, public stand posts, consumer connections, public toilets and household Ecosan Toilets. The client will conduct a feasibility study and detailed engineering designs. ESIA and RAP shall be undertaken following the guidance provided in this ESMF, during project impementation.

PRIORITY 3 – KYEGEGWA-MPARA-RUYONZA WATER SUPPLY AND SANITATION PROJECT

Kyegegwa, Mpra and Ruyonza RGCs are located in Kyegegwa District in Western Uganda.
The system will serve a projected population of 99,909 in 2040 as on Table 1 below:

Table 1: Kyegegwa-Mpara-Ruyonza Water Supply and Sanitation Project

Water schemes	Population Projections				
	2018	2023	2028	2038	2040
Kyegegwa and Mpara Towns Water Supply and Sanitation Project	**44,924**	**53,873**	**64,604**	**92,907**	**99,909**

Water would be extracted from River Katonga, have a water treatment station and a pumping station where water can be pumped to Izina hill at a capacity of 720 l/s. The potential scope would include an intake, water treatment plant, transmission system, and distribution networks. The client will conduct a feasibility study and detailed design to determine the adequate scope for this project. A comprehensive resettlement Action Plan and Environmental and Social Impact Assessment ESIA will

be carried during the project implementation following guidance provided in this ESMF and RPF and necessary approvals/clearances sought before commencement of any civil works.

SOURCE PROTECTION

The main activities to be carried out include; use of riverine vegetation to prevent run-off and sediment load, fencing/demarcation of lake shore and river banks, reforestation using indigenous species and planting of native fast-growing shrubs in immediate vicinity of water supply, restoration, improvement and protection of buffer zones including education and sensitization programs**.**

PRIORITY 4 – NAMASALE WATER SUPPLY AND SANITATION PROJECT

Namasale Town Council is a landing site located close to the shores of Lake Kyoga in the Northern District of Amolatar. The system will serve a projected population of 19,583 in 2040 as shown in Table 2 below:

Table 2: Namasale Water Supply and Sanitation Project

Area	2018	2023	2028	2038	2040
Central Parish Total	2,893	3,442	4,093	5,790	6,205
Kayago Parish Total	3,031	3,606	4,290	6,068	6,505
Wabinua Parish Total	1,775	2,113	2,515	3,556	3,812
Aweipeko Parish Total	1,428	1,698	2,019	2,856	3,061
Namasale Project Area Total	9,127	10,858	12,917	18,271	19,583

SCOPE OF WORK FOR NAMASALE WATER SUPPLY AND SANITATION

Water would be abstracted from Lake Kyoga at Mbiko Landing Site. The scope of works would include a conventional treatment plan, transmission line, distribution networks, a new office building, and installation of power line depending on the final location. The client will conduct a feasibility study and detailed design.

A comprehensive resettlement Action Plan and Environmental and Social Impact Assessment will be carried during the project implementation following guidance provided in this ESMF and RPF and necessary approvals/clearances sought before commencement of any civil works.

SOURCE PROTECTION

The main activities to be carried out include; use of riverine vegetation to prevent run-off and sediment load, fencing/demarcation of lake shore and river banks, reforestation of native species and plantation of native fast-growing shrubs in immediate vicinity of water supply, Restoration, improvement and protection of buffer zones including education and sensitization programs**.**

SANITATION FACILITIES

The Project will finance institutional sanitation facilities at markets, health posts and schools in the small towns and RGCs. The benefitting schools will have pupil-stance ratios over 70:1 as well as committed school management and administrative teams. Other benefitting public places will be

determined by the state of the structure, availability of land, number of intended users, and local government development plan for the specific area. The component will support the establishment of proper fecal sludge management systems in small towns that include collection, treatment, reuse and disposal, including the construction of Fecal Sludge Treatment Facilities (FSTFs). The first phase of sanitation investment will include the construction of FSTFs in the small towns of Busia, Rukungiri, Koboko and Budaka based on high demand, improved fecal sludge management, and clustering opportunities with other towns. After completion of full sanitation service chain studies, fecal sludge related investment in other small towns (financed by IWMD or WMDP) may be included. Technical assistance will be provided to targeted small towns to develop integrated sanitation plans (i.e. fecal sludge, solid waste and stormwater) in the context of land use planning. Finally, the Project will support sanitation and hygiene promotion activities, including the application of CLTS for mobilizing communities to eliminate open defecation (OD) and sanitation marketing to change behaviors and to scale-up effective and sustainable demand and supply for improved sanitation and hygiene by using social and commercial marketing practices. Sanitation and hygiene promotion activities applied to the Project will follow specific steps and guidelines included in the MoWE's Hygiene Education and Sanitation Promotion Template.

Site specific assessments shall determine final disposal and reuse options based on local context, which cannot be prescribed at this stage. Dried stabilized sludge from drying beds will be used for agricultural reuse or disposed to a solid waste landfill during low demand periods. Adequate training will be provided to operators of the treatment facilities to ensure that dried stabilized sludge is only reused once it is safe for human handling and agricultural purposes (i.e. levels of pathogenic bacteria, viruses and protozoa reduced to appropriate levels.) Sludge emptying and transportation equipment will also be provided for improving sanitation service chain in these towns.

It should however be noted that, due to absence of such facilities in the vicinity of the above planned towns, the population of all RGS within 20km expected to take advantage of these facilities and therefore extensive sensitization will be done to create awareness on the availability of these services during construction and after completion.

Solid Waste Management

MoWE acknowledges the need to carry out full scale intervention of solid waste management in all the proposed Project towns of Busia, Butaleja-Busolwe, Budaka-Kadama-Tirinyi-Kibuku, Namasale, Namungalwe-Kaliro, Kyegegwa-Mpara-Ruyonza and Adjumani II–Pakele which requires provision of solid waste trucks, garbage collection centers and construction of engineered solid waste disposal sites.

The budget for this priority is estimated at USD 4 million, however full-scale investment to implement meaningful infrastructure investments in solid waste management cannot be catered for under the provided budget, hence the need of more funding for this priority. It is therefore recommended that Solid Waste management strategies be developed for each cluster area, to inform the exact solid waste management interventions that may be undertaken/funded by the project. These sub-projects shall take into consideration the provisions and requirements of WBG EHS Industry Sector Guidelines for Waste Management Facilities.

Figure 1: Burning Solid Waste in Kyegegwa Town Coucil, Kyegegwa District.

SUBCOMPONENT 1.2: SUPPORT TO RURAL GROWTH CENTERS

This subcomponent will finance activities designed to improve water supply and sanitation services in rural areas, including (i) construction and rehabilitation of water supply systems coupled with water source and catchment protection; (ii) provision of on-site sanitation facilities and technical assistance activities to support sanitation service chain management including fecal sludge management and Community Led Total Sanitation (CLTS); and (iii) technical assistance and training to support community-based organizations and their supporting structures as well as hygiene and sanitation promotion coupled with sensitization activities, including care of domiciliary installations, tariffs, water conservation, and water resources management.

This subcomponent will support gravity fed or solar pumped piped water supply systems comprising of water source (spring, surface or borehole), storage tank and pipe distribution network feeding multifamily taps and/or household connections. On sanitation, the subcomponent will finance on-site sanitation facilities, such as pour-flush toilets with a range of superstructures and septic tanks, targetting public spaces, schools and institutions. Two specific gravity flow schemes have been identified to support rural communities in the districts of Kasese (Nyamugasani) and Buhweju (Bitsya). The subcomponent will also support a national rural water supply program aimed at increasing access to safely managed drinking water service through solar technology. The MoWE is introducing solar-powered water supply schemes to eliminate long queues and supply more people at each source. The scheme is comprised of a borehole equipped with a solar-powered submersible pump, storage and a distribution pipe network (including public stands, household connections, and

meters). The capital cost is high but is balanced by the benefits of reduced O&M costs over the lifespan of the systems. The water supply systems planned under this Project include borehole yields of greater that $5m^3$/hr and aim at serving a population between 1,500 to 5,000 people in RGCs. The approach targets areas that have limited surface water resources but have good ground water potential as per groundwater assessments and have limited access to the electricity grid. The targeted RGCs have water access levels below 40 percent. Thirty potential schemes have been identified in 20 district located in Central/Mid -Western and Mid-Eastern sub regions. This subcomponent is expected to be executed by the MoWE, DWD-Rural with its regional offices in close coordination with key stakeholders (local authorities and community organizations). It will also take a community participation approach throughout the project cycle – identification and preparation, execution, and assistance operation to foster sustainability.

SUBCOMPONENT 1.3: SUPPORT TO REFUGEE HOST COMMUNITIES

With a refugee population of 970,238 people settled only in West Nile/North, the region has become a hub of humanitarian activities and over 22 Development partners (NGO's) are active in the 6 major districts of Arua, Yumbe, Koboko, Moyo, Adjumani and Lamwo. Although there are designated areas for refugee settlements, some of the refugees have settled among the host communities (self-settlers) and currently an estimated 80,000 self-settlers exist in the region of West Nile alone. The existing refugee policy of integration has also facilitated and enabled self-settling among host communities in addition to the fact that some of the migrating South Sudan refugees are relatives of the Ugandans in the region.

Estimates from UNHCR put the current refugee population in Uganda at over 1.2 million people. 51% of these are female and 49% male; children make 56% of the refugee population and women and children combined make 79% of the refugee population in Uganda. Table 3 below indicates the refugee population per settlement in Uganda and the corresponding host population. As of April 2017, the refugee population was 29% of the aggregated host population from all affected districts. The refugee population in Bidi-Bidi settlement alone makes 56% of the entire host population of Yumbe district, while the refugee population in Adjumani is 99% of the district population. Moyo district hosts more refugees than the host communities.

Figure 2: A man collects from a stream on a roadside in Lamwo district

Table 3: Settlement Population as of 20th April 2017

District	Settlement	No. of Refugees	Host Population	% of Refugees of Host Population
Yumbe	Bidi	272,206	484,822	56
Arua	Rhino	86,770	782,077	18
	Imvepi	55,778		
Moyo	Palarinya	148,381	139,012	107
Adjumani		222,475	225,251	99
Lamwo	Palabek	5,738	134,379	4
Hoima	Kyangwali	45,057	572,986	8
Kiryandongo	Kiryandongo	52,381	266,197	20
Isingiro	Nakivale	125,398	486,360	27
	Oruchinga	5,406		
KaMoWEnge	Rwamwanja	63,253	414,454	15
Kyegegwa	Kyaka	24,457	281,637	9
Total		**1,107,300**	**3,787,175**	**29**

Source: UNHCR/OPM, 2017 (refugee data); UBOS Report,2016 (Population data)

Currently there are challenges faced in provision of WASH services to refugees and host communities. The negative impact of refugees on water resources and the environment in the refugee settlements and hosting communities are already being felt. Water supply to the refugee settlements has become costly due to declining water quantities and quality in some sources near refugee settlements while wood for construction and fuel continues to be scarce and costly. There also concerns over sustainability of the humanitarian assistance especially the need to transition from emergency

towards longer-term development solutions. There is therefore a need for ensuring water and environmental sustainability within the refugee settlements and hosting communities by integrating humanitarian assistance with protection of water sources and catchments, restoring degraded landscapes and promoting efficient water and biomass energy use practices and technologies. There is also a need to promote transition from emergency to development through implementation of systematic, well planned and structured mechanisms for refugee management that also aim at integrating delivery of social services in host communities in the refugee management programs as well as ensuring sustainability of refugee programs and rendering refugees more productive.

This sub-project is aimed at improving the sustainable provision of water supply and sanitation services to the host communities and refugee population in the Refugee Host Districts through provision of sustainable safe water supplies and sanitation services, and management and protection of water source catchments.

This subcomponent will finance activities designed to improve water supply and sanitation services in refugee host communities and refugee population, including (i) construction and rehabilitation of water supply systems coupled with water source and catchment protection; (ii) provision of sanitation facilities and technical assistance activities to support sanitation service chain management including fecal sludge management and Community Led Total Sanitation (CLTS); (iii) technical consultancies to prepare engineering designs, safeguards documentation, and construction supervision; and (iv) establishment of service providers when needed and utility management related activities, client identification surveys, improved billing and collection systems, and NRW reduction, to support operational and financial performance of participating service providers. It is anticipated that the delivery technology for this sub-component may include: Surface Water Based Gravity Systems, Ground Water Based Solar Powered Systems, Water Borne Sanitation Facilities, and FSM Facilities.

This subcomponent will, with financing from the IDA 18 Refugees Sub-Window, support activities designed to improve the sustainable provision of WSS services to refugee settlements and host communities.[16] This sub-component will target the districts of Yumbe, Arua, Moyo, Adjumani, and Lamwo in northern West Nile, where about 70 percent of the refugees in Uganda are being hosted, as well as the mid-west district of Kiryandongo, which is currently experiencing large daily inflows of refugees from South Sudan. Proposed interventions include improved water and sanitation systems for either host districts (small towns) or specific refugee settlements. The project will take a long-term and systematic approach to water and sanitation service delivery at the district level while addressing some immediate needs at the community level. Some of the target host institutions may include: Health Centers, Schools, and Administrative Centers. Preliminary targets include: 2 Surface water systems built, 22 Solar powered systems built, 130 Institutional/Public toilets built, 1 FSM facility built, 5 Cesspool emptiers procured, Stakeholder driven micro-catchment management and source protection plans developed and adopted and Physical and natural water infrastructure constructed or renovated. To that end, the MOWE will hire a consultancy to prepare detailed designs

[16] Uganda's eligibility for the IDA 18 Refugee Sub-Window financing is stipulated in the September 29, 2017 Board document titled "IDA18 Refugee Sub-Window – Board Consultation on Eligibility – AFR, MNA, SAR."

for immediate actions (short term interventions) to mitigate the impacts of water scarcity, droughts and recurrence of waterborne diseases. The consultancy will also include water and sanitation master plans that specify medium and long-term solutions to improve access to safe drinking water and provide sustainable sanitation that addresses the entire service chain, including containment, collection and transportation, treatment, reuse, and disposal. Detailed designs of specific investments will not be ready by appraisal and therefore this subcomponent will rely on a comprehensive technical and ESMF guidance to prepare and implement appropriate activities. This subcomponent will be implemented by the MOWE in close consultation with other key stakeholders, such as the Office of the Prime Minister (OPM), the UNHCR and local authorities. The Project Steering committee will include MOWE, Districts, UNHCR/OPM. The service delivery model will vary depending on the characteristics of the community (small town or rural), large towns are not expected to be served under this subcomponent.

1.5.2 COMPONENT 2 –URBAN LARGE TOWNS WATER SUPPLY AND SANITATION (ESTIMATED COST US$65.0 MILLION)

This component will directly support the GoU's growth strategy to revitalize Uganda's Eastern and Northern Regions. This component will finance activities designed to improve WSS services in the municipalities of Mbale (Eastern Region) and Gulu (Northern Region) as well as nearby small towns. The activities include: (i) construction and rehabilitation of WSS infrastructure investments in Mbale; (ii) construction of a new water supply scheme for Gulu; (iii) construction supervision consultancies; and (iv) environmental and social management activities, including water source protection and community mobilization and sensitization. The component will also support mitigation measures to ensure adequate implementation and O&M of the infrastructure investments. The investments will improve Gulu and Mbale's resilience to floods and droughts.

Mbale Municipality WSS Subproject. This subproject will finance (i) catchment management measures for protecting the current water sources at Nabijjo and Nabiyonga Dam and at the new Namtala intake; (ii) construction of a new intake and water mains at Namtala; (iii) rehabilitation and expansion of the water treatment plants at Bungokho and Manafwa; (iv) rehabilitation and expansion of the water mains and distribution networks, including storage capacity, metering and water connections; and (v) rehabilitation and expansion of the Mbale town sewerage system. The subproject will also finance WSS activities in two nearby small-town clusters: Butaleja- Busolwe and Budaka - Kadama-Tirinyi-kibuku. Activities for the small towns will include (i) construction and rehabilitation of water mains, reservoirs and distribution networks to connect to the Mbale main water supply system and (ii) construction of fecal sludge treatment facilities and public sanitation facilities following a similar approach described in component 1. This subproject will also include community mobilization and sensitization and cross cutting activities as described in component 1 as well as consultancy services for construction supervision and engineering support. The design indicates that 333,792 people will benefit from this subproject.

Since these activities were originally included under the current WMDP, project preparation is quite advanced. For Mbale, detailed designs have been finalized and associated ESIA was approved by the World Bank on July 7, 2017 and disclosed in the World Bank Web Site on February 3, 2018. The Mbale RAP is currently being revised to udpdate the 2016 Valuation and Survey Report.

Gulu Water Supply Subproject. The Gulu water supply subproject is part of the Integrated Program to Improve the Living Conditions in Gulu (IPILC), which aims to invest in basic infrastructure to support the GoU's national objective of revitalizing Gulu's economy. A feasibility study conducted under the IPILC recommended a new water supply system using the Nile River to ensure water production capacity to meet 2040 water demands. The Gulu water supply subproject includes the construction of new intake structure at the Nile River, a water treatment plant, pump station, a 70-km transmission pipeline from Karuma to Gulu and distribution systems, including reservoirs, metering and public standpipes and household connections. The Project will also include installation of branch off systems to connect six small towns to the Gulu water supply subproject, as well as improvements to the small-town distribution network. The cost estimate for the Gulu water supply subproject is budgeted at US$53.6 million, and it will be co-financed with the KfW Development Bank. The World Bank will finance the Karuma – Gulu transmission pipeline, improvements to the Gulu distribution networks, and improvements to the small-town water supply networks for an estimated amount of US$24.3 million. The KfW will finance the water intake, water source protection, and water treatment plant for an estimated amount of US$24.3 million. The GoU will contribute US$3.9 million to cover contingencies and RAP-related compensations. Both the KfW and the World Bank will follow Uganda and World Bank safeguards guidelines. Sanitation investments are not included under the Project as they are already covered and financed under the overall IPILC. The design indicates that 300,000 people will benefit from this subproject.

Feasibility study is underway and will not be completed by the time of project appraisal. Accordingly, the ESIA process and related safeguard management plans shall be developed in line with the guidance provided in this ESMF.

Implementation and Financing.
The NWSC is responsible for managing the WSS system in Mbale and Gulu; therefore, this component will be implemented by NWSC in close coordination with the MoWE and local authorities. The cluster towns are currently managed by local authorities, but once proposed works are completed they will be transferred to the NWSC in accordance with the MoWE's guidelines. Detailed Engineering Designs, RAP, ESMP, and bidding documents for Mbale were completed under the current WMDP. The NWSC has engaged a consulting firm to carry out the detailed designs for Gulu, which are expected to be completed by August 2018. Given the financial capacity of the NWSC and the revenue generating potential of Component 2, the GoU will have an on-lending arrangement with the NWSC for the full IDA amount under this component.

1.5.3 COMPONENT 3 – WATER RESOURCE MANAGEMENT (ESTIMATED COST US$25.0 MILLION)

This component will finance project activities designed to plan and implement IWRM, including (i) preparation of key water resources planning instruments, including the Water Resources Strategy for the Albertine Water Management Zone, four integrated catchment management plans that will include a Water Allocation Tool, and a national groundwater management study; (ii) implementation of selected priority investments identified in existing catchment management plans (CMPs) aimed at ensuring sustainability and water security for all in targeted sub-catchments; and (iii) provisions to

strengthen water resources monitoring and information systems nationally, including the operationalization of the Water Information System (WIS 2.0), installation of hydro-meteorological stations, renovation to the national water quality laboratory, and institutional strengthening of the National Water Resources Institute.

Uganda is divided into four water management zones - the Upper Nile; Kyoga; Albert; and Victoria WMZs respectively. The current WMDP has focused mainly on two zones – the Upper Nile and Kyoga WMZs, while the LVEMP II has focused on the Victoria WMZ. The proposed Project will provide support for the Albert WMZ which lies in the western part of Uganda characterized by a high topography with a high potential for hydropower generation and water supply through gravity feed systems. Several water supply schemes in the zone have been facing great seasonal fluctuations in water quantity, poor water quality and occasional washing away by landslides. The water demand in this zone is expected to grow, particularly with the expected increase in investments of oil production due to start by 2020. Several rural water schemes proposed in this project including the two gravity flow systems are in this zone. It is therefore important for the project to support the Albert WMZ in an integrated manner. The proposed activities are building on what has been done under the WMDP, but will be scaled up to effectively support the sustainability of infrastructure to be developed under the other components in terms of water allocation, protection of catchments around the water supply systems to mitigate the impacts of climate change and environmental degradation, and to ensure that there is coordinated development and management of water and related resources. Preparation of this component is quite advanced with terms of reference for consultancies and technical specifications for priority catchment management investments completed. This component will be implemented by the MoWE, Directorate of Water Resources Management (DWRM).

Figure 3: Hydrological station on R. Tochi in Oyam district

1.5.4 COMPONENT 4 – PROJECT IMPLEMENTATION AND SECTOR SUPPORT (ESTIMATED COST US$10.0 MILLION)

This component will finance activities designed to strengthen the capacity of the Recipient for Project management, implementation and coordination, and monitoring and evaluation (M&E), including (i) establishment and implementation of a comprehensive M&E system; (ii) training of the implementing agencies and local governments on implementation of safeguard and fiduciary policies; and (iii) financing studies identified during implementation and preparation of follow-on subprojects as needed. Activities to support sector reform include (a) technical assistance to NWSC for the creditworthy rating and commercial financing preparation and to small towns to ensure technical and financial sustainability of WSS systems; (b) development of appropriate management service delivery models for small towns and rural areas (O&M Models); and (c) development of the service provider performance monitoring and information system to support the Ministry's regulatory function. This component will be implemented by the MOWE and NWSC in close coordination with key stakeholders.

1.5.5 PROJECT COST, DURATION, AND FINANCING

The estimated total project cost is US$260 million financed by IDA 18 funds to address water supply, sanitation and water resource management. Subcomponent 1.3: Support to Refugee Host Communities (US$60 million) would be financed by the IDA 18 sub window for refugee and host communities (USD 25 million credit and USD 25 million grant) and by national IDA (USD 10 million). The government will be responsible for counterpart financing to cover some operating costs, the acquisition of land, and any compensation due to project-affected people. The Project will be implemented over a period of five years to allow sufficient time for successful achievement of the PDOs.

1.5.6 PROPOSED INVESTMENTS

The Project supports a range of infrastructure investments, including construction and rehabilitation of water supply systems, rehabilitation and expansion of wastewater treatment systems, construction of sewers and fecal sludge treatment facilities, on-site sanitation facilities, integrated water resources management measures, and renovation of water quality laboratories, among others. The project will also develop Catchment Management Plans and support implementation of some selected investments. The CMPs will contribute to overall environmental and social sustainability. In addition to including safeguards in all subprojects, it will finance environmental improvement measures, designed to address degradation, improve conservation, protect ecosystems, etc. Typically, a CMP would entail investments listed under Table 4 below:

Table 4: Indicative Range of Investment Options Typically Considered in Catchment Plans

Option	Description
Valley Tanks	Small water storages used primarily for livestock, groundwater recharge for drinking water and livestock limited irrigation and fisheries

Dam and reservoir	Larger multi-purpose water storage – possible purposes include agriculture production, urban and industrial water supply, energy production, flood risk reduction.
Sand dams	Sediment capture and water infiltration and storage
Sub-surface dams	Prevention of excessive sub-surface outflow
Rainwater harvesting (off-farm)	Small dams, ponds and tanks that harvest rainwater runoff used for small scale irrigation and flood management
Water off-take (from river or water body) & distributary canal for irrigation	Diversion and delivery of bulk irrigation water supplies by gravity
Pump & distributary pipe/canal for irrigation	Pump diversion and delivery of bulk irrigation water supplies by gravity
Small scale irrigation (including drought protection)	Treadle pumps (shallow groundwater) or small pumps (dug wells, water bodies) with low pressure pipe water distribution
Water saving irrigation technology	Introduction of drip (especially for orchard crops) and sprinkler irrigation on a selected basis with private sector participation
Mini- & micro-hydropower	
Solar power for pumps refrigeration (fisheries)	
Check dams	Small dams to stop gully erosion
Contour bunds	Small raised bunds aligned with the contour to slow or stop surface runoff of rainfall
Flood risk management and preparedness	Flood proofing, measures flood warning and communications, relocation of activities from flood risk zones
Drain and waterway improvements	Reconstruction and stabilization of degraded waterways
River bank stabilization	A combination of revetments (stone, gabions) and vegetative planting (trees, shrubs) to stabilize degrading river banks
Reforestation and afforestation	Tree planting to reestablish forest cover, reduce soil exposure to erosion, reduce runoff rates and increase groundwater recharge
Wetland restoration	Restoration and improvement of environmental services

1.5.7 SUB-PROJECT EXCLUSIONS

The World Bank Operational Policies set out subproject investments which are ineligible for investment as these may conflict with World Bank safeguard policies and the Bank's operational mandate. These include:

a. Religious infrastructure;
b. Headquarters for cooperatives, groups, or executing organizations;
c. Acquisition of equipment for government services. This will be financed if government services mean services to be provided to strengthen water resources monitoring and information systems management nationally, including the operationalization of the Water Information System (WIS 2.0), installation of hydro-meteorological stations, renovation to the national water quality laboratory, and institutional strengthening of the National Water Resources Institute.

d. Administrative buildings (except accommodations for health workers, and primary school teachers)[17];
e. Activities already covered by other sources of financing or are already included in other national, regional public development programs and where financing has been secured;
f. Subprojects with significant adverse and unprecedented impacts commensurate to a Category A subproject based on screening per OP 4.01 will not be financed under the project, unless the project is restructured and upgraded from EA Category B to EA Category A, and approved by the World Bank Board of Directors.
g. Purchase of mechanical equipment (e.g. trucks, tractors)[18];
h. Salaries to any persons other than providers of frontline services;
i. Contributions to political parties, trade unions or any other interest groups; and
j. Projects that may lead to pollution, deforestation, or other significant environmental and social problems, summarized in the Table 5 below:

Table 5: Ineligible sub-projects

Natural Resource Management	Sub-projects involving significant conversion or degradation of critical natural habitats. Sub-projects involving the use of unsustainably harvested timber or fuel-wood
Cultural and Heritage Sites	Damages cultural property, including but not limited to, any activities that affect the following sites: archaeological and historical sites; and religious monuments, structures and cemeteries As well as significantly damage non-replicable cultural property.
Involuntary Resettlement	Requires involuntary acquisition of land or any resettlement of people affecting more than 200 persons.

The actual activities included in the list will vary according to the project and country context and should reflect the views of the major stakeholder groups, with constant guidance from Government of Uganda and the World Bank.

2 PROJECT TARGET AREAS AND BASELINE

[17] Water Management Zone offices will be built / refurbished with IDA financing.

[18] Under the WMDP, some equipment may need to be financed and will be identified during pre-appraisal.

2.1 OVERVIEW OF THE PROJECT

The Project will have a large focus on the northern and eastern regions given severe water scarcity and low socio economic living conditions. The identified areas include (i) four water scheme systems of small towns: Busia, , Namungalwe-Kaliro, Kyegegwa-Mpara-Ruyonza, and Namasale; (ii) RGCs in the districts of Kasese (Nyamugasani) and Buhweja (Bitsya); (iii) refugee hosting communities in the Northern districts including Yumbe, Adjumani, Moyo and Lamwo which lie along the West Nile region; and (iv) two large towns – Gulu and Mbale. Other specific locations for the solar piped water systems under the rural component (1.2) will be determined during preparation. The classification is based on population per area whereby large towns have a population greater than 15,000; small towns have between 5,000-15,0000 inhabitants; and rural areas have lower than 5,000 inhabitants. Gulu and Mbale have a population of 300,000 and 163,000, respectively.

Component 3 will include water resources measures in four sub-catchments refers to Kochi, Aswa II, Lwakhakha and Awoja sub-catchments. These measures are aimed to safeguard the land and water resources to support the sustainability of the infrastructure investments under components 1 and 2.

Based on the information available, the proposed activities are not located in environmental sensitive areas or in areas where indigenous populations live.

The Project supports a range of infrastructure investments, including construction and rehabilitation of water supply systems, rehabilitation and expansion of wastewater treatment systems, construction of sewers and fecal sludge treatment facilities, on-site sanitation facilities, integrated water resources management measures, and renovation of water quality laboratories, among others.

The Project will largely generate positive impacts contributing to public health, economic growth, and environmental sustainability through (i) rehabilitation and construction of centralized wastewater systems, feacal sludge treatment facilities, and on-site sanitation facilities to reduce contamination of surface water, groundwater sources and drinking water networks; (ii) reducing the discharge of untreated wastewaters to land and waterways; and (iii) increasing coverage and improving service quality of drinking water systems.

There are no anticipated large scale, significant or irreversible negative environmental impacts associated with the Project. However, development of the Project may result in potential adverse environmental and social impacts. Possible impacts during construction include impacts on water bodies associated to earthworks and wastewater generated from construction activities; emissions of particulate matter by earthworks and removal of vegetation cover; improper handling of asbestos cement (AC) pipes; Occupational, Health, and Safety (OHS) risks; and social misdemeanor by workers (labor influx). The impacts during construction phase will be temporary while works are carried out. During the operational phase, the potential risks include unpleasant odors and noise from the operation of sanitation facilities; sludge management and wastewater effluent discharges that exceed standards; possible impacts on surface and/or ground water due to leakages from the facilities (sewers, manholes, ponds, and septic tanks) as a result of storm flows overloading the system; and impacts of water abstraction on environmental flows and aquatic ecosystems, including

migratory fish species. All project adverse impacts are expected to be mitigated with known technology, good practices and management solutions.

This ESMF provides framework guidance to identification and management of environmental and social impacts. All site specific impacts shall be assessed based on the context and given site specific characteristics to determine likely impacts and mitigation measures. Some of the identified measures based on the type of investments are summarized below.

- Treated effluents from wastewater treatment plants and feacal sludge treatment plants (FSTP) will not generate significant impacts if the facilities are operated and maintained according to design standards. The leakages from sewers, sludge drying beds and wastewater stabilization ponds (proposed in Mbale town only) will be minimized by regular monitoring and maintenance of the network; connections between sewers will be made water-tight to prevent leakages of wastewater to groundwater; and frequent effluent quality monitored to avoid release of poorly treated effluents into waterways. In addition, desludging and transportation of sludge will be safely managed by the provision of training to sludge emptiers on safe sludge handling measures, monitoring and enforcement of sludge handling practices, the provision of adequate transportation and personal protective equipment, and public education campaigns about the treatment system and the required sludge management and reuse requirements. Dried stabilized sludge from drying beds will be used for agricultural reuse or disposed to a solid waste landfill during low demand periods. Adequate training will be provided to operators of the treatment facilities to ensure that dried stabilized sludge is only reused once it is safe for human handling and agricultural purposes (i.e. levels of pathogenic bacteria, viruses and protozoa reduced to appropriate levels).

- All requirements for construction of the sludge drying beds, especially for providing water impermeable basins, efficient drainage system for leachate and flood protection structures like cut-off drains and small embankments will be put in place when needed.

- Unpleasant odors and noise, if any, will be mitigated by correct operation and maintenance of the plant along with siting of the facilities away from habitations – all in line with Government specifications.

- For AC pipes the environmental management plan will include management measures for the removal, packaging, transportation and disposal of existing asbestos waste, following additional guidance that will be provided by National Environment Management Authority (NEMA) for handling such hazardous materials.

- Raw water abstractions will be designed based on technical studies to ensure safe yield from groundwater and surface water resources. Water abstraction from surface water will be designed to ensure downstream users and biodiversity are not impacted under the Project.

- Surface water intake structures will be designed taking in consideration the aquatic ecosystem baseline of specific ESIAs. The baseline will informed the type of design features to protect fish

migration. For instance, mitigation measues can include constructing fish pass structures or installing fish screens at the abstracition point .

- Awareness campaign will be launched for the residents about proper operation and maintenance of both water supply and sanitation facilities to reduce the introduction of grease, solid waste and other non-biodegradable particulates into the sewerage network and on-site sanitation facilities. Awareness campaigns as well as other type of citizen engagement will take in consideration the interaction between refugee and host communities during planning and implementation.

- Measures to address labor influx include (i) hiring local workforce as much as possible; (ii) active engagement with the communities, particularly targeting the vulnerable groups including women and girls, on raising the awareness of the potential arrival of external workers, social conducts and behaviors; (iii) mandatory training for all employees on legal conducts in local communities and legal consequences for non-compliance, sensitize them not to engage in relationships with underage girls and married women, and on issues relating exploitation HIV/AIDs and STDs; and (iv) maximize the distance of the camp sites from the communities and provide provision of services and entertainments within the camps to reduce the need to use community facilities and interacting with the local community, as well as providing opportunities for workers to regularly return to their families.

2.2 WATER MANAGEMENT ZONES

The project will be implemented at national and sub-national levels all over Uganda divided into the four Water Management Zones (WMZs). The following section outlines the key geographical, hydrological, ecological and socio-economic features of each target area.

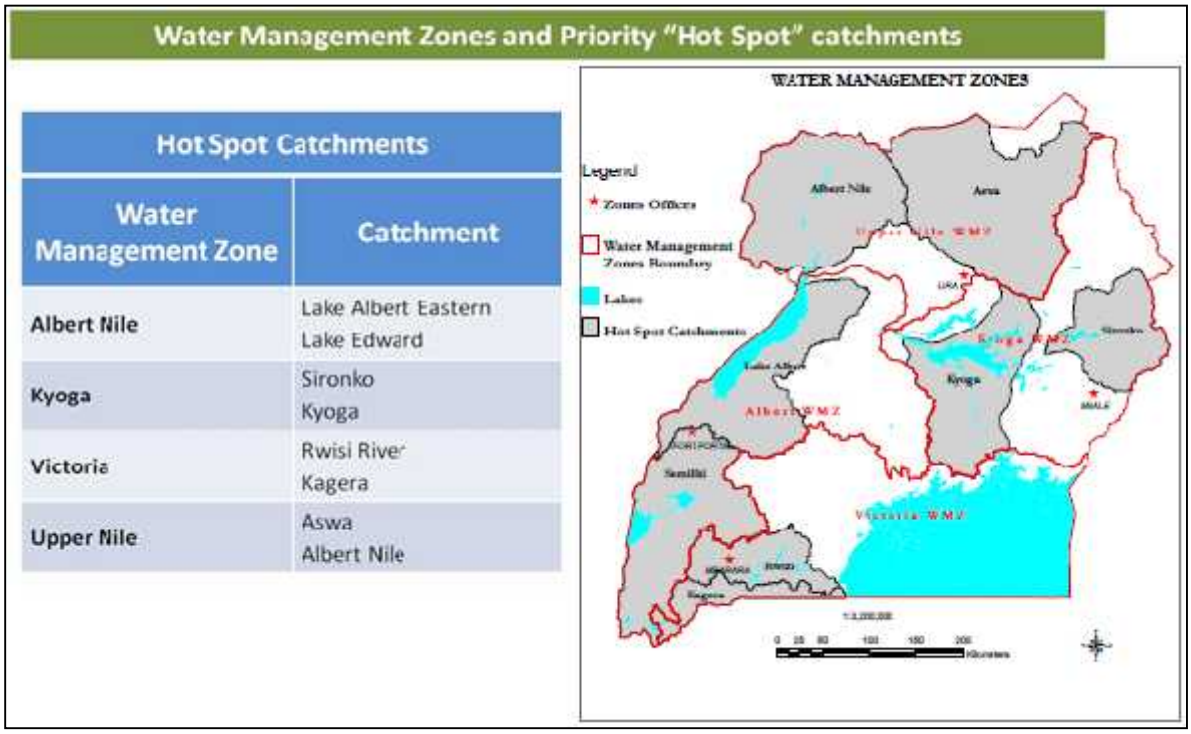

Figure 4: Water Management Zones and Priority Hotspots Catchments

2.3 LAKE KYOGA WATER MANAGEMENT ZONE

Figure 5:: KWMZ

Table 6: KWMZ key features

Feature(s)	Description
Socio-economics	Commercial rice production in the Butaleja area started in 1976 with the Doho Rice Scheme, a government run enterprise involving the local communities. Rice is grown in the wetlands of the R. Manafwa basin. Expanding rice production in the wetlands is likely to cause further deterioration to the freshwater ecosystem in the area and may reduce wetland functionality in the future if no alternatives emerge in the medium and long-term. The other lake systems in the Kyoga WMZ are the Bisina and Opeta Lakes which very important for the surrounding communities in terms of fishing, transport and supply of water for domestic use and livestock. A rhizome of the Nymphea genus also acts as a source of food during the dry season. With the changing seasons and extreme weather patterns as a result of climate change, the dry seasons in this region pose potential challenges for wildlife, livestock and farming systems. Most of the wetland fringes have been converted into rice schemes while other areas are being continuously degraded through over use by livestock. On the ecotourism front, currently there is no significant activity by way of tourism and recreation. However, the area is a potential site, especially given the proximity to the Kyoga minor lakes. The districts should take the initiative to develop the tourism sector. The various dimensions of poverty in the Kyoga catchment area include landlessness, large families, inadequate access to water and sanitation, access to education, and the degradation of land and natural resources.
Physiography and Land Use Pattern	Lake Kyoga Catchment area is part of the larger River Nile Basin, which stretches from the Great Lakes region (Burundi, Rwanda, The Democratic Republic of Congo, Tanzania, Uganda and Kenya) to North Africa. The Nile flows through Sudan, with tributaries in Ethiopia, Eritrea and Somalia and connects to the Mediterranean Sea through Egypt. The Lake Kyoga catchment includes a series of lakes: Kyoga, Bisinia and Kwania and the numerous wetlands in central Uganda. The main inflows are the Victoria Nile and river flows from Mount Elgon to the east. Lake Kyoga is downstream from Lake Victoria. It drains out through the Kyoga Nile connecting to Lake Albert. The Lake Kyoga catchment is among the largest catchments in Uganda. It covers about 22 districts: Nakasongola, Iganga, Namutumba, Pallisa, Tororo, Butaleja, Kaliro, Kamuli, Lira, Kaberamaido, Kumi, Apac, Mbale, Manafwa, Bududa, Kayunga, Katakwi, Sironko, Luwero, Kapchorwa, Kotido and Nakapiripirit. The four major ecosystems in the Lake Kyoga catchment area include freshwater systems (consisting of the Lake Kyoga complex, several permanent and seasonal rivers and wetlands); forests; grasslands; and agro-ecosystems. Land use practices vary considerably across the Lake Kyoga catchment. In the drier areas pastoralism is a common livelihood and a large portion of

Feature(s)	Description
	the land is composed of grasslands. In the drylands unsustainable use of the grasslands has been exacerbated by the large herd sizes. In addition, the frequent droughts negatively impact agriculture. Charcoal production has been a dominant feature in many of the wooded areas. The NFA is engaging individual and group investors in tree production in the central forest reserves. Monocultures of pine forests have been planted in Kasagala and Katuugo central forest reserves.
Hydrology	The principal inflow to Lake Kyoga is from the Nile which drains Lake Victoria and contributes an average of 25.6 billion m3 of water each year. The other affluents are much smaller, the most important being the Mpologoma, which brings some 610 million m3 of water from southeast Uganda each year, and the Okere which contributes an average of 373 million m3 water/yr, and drains much of the north and central eastern parts of the country. The Sezibwa discharges some 217 million m3 of water to Lake Kyoga each year, while the Omunyal contributes a further 40 million m3/yr, and the Adip and Abalang Rivers jointly discharge a similar volume into Lake Kwania. Direct precipitation over the major lakes amounts to about 6 billion m3/yr, while the mean annual outflow from the system is 27 billion m^3.
Ecology	The forest ecosystem in Lwampanga is composed of dry woodlands. The water hyacinth is still a major concern in Lake Kyoga. Large sections of the lake shore are covered by the weed, which reduces the volume of fish captured. Siltation is also encouraging further growth of the hyacinth. In the cattle corridor there is an increasing proliferation of termites. The termites are attributed to the frequent drought that limits the volume of below-ground biomass. The result is that they attack all vegetation causing the drying up of crops and trees.
Environmentally and Ecologically Sensitive Areas	Opeta-Bisina Kyoga Wetland System: Located in Eastern Uganda, this system is a combination of the Lake Opeta Ramsar site and Lake Bisina Ramsar site were designated as Ramsar sites in 2006 and are both Important Bird Areas (IBAs). Together, this wetland system covers an area of about 123,141ha and is shared by the districts of Kumi, Katakwi, Soroti, Bukedea, Nakapiripiriti and Sironko. This system consists of one of the remaining most important and intact wetland marshes in Uganda. It is predominantly an extensive swamp of Hippo grass (*Vossia cuspidata)* graduating into dry *Hyparrhenia* grassland savannas. The wetland is very important for the conservation of dry land bird species especially the Fox's Weaver *Ploceus spekeoides*, Uganda's only endemic bird that breeds in this wetland. Part of the system covers the Pian-Upe Wildlife Reserve that provides a refuge for the local animals during the dry season. Pian-Upe constitutes the drier parts of the Karamoja region and hence is richer in the drier-terrestrial biodiversity. It is adjoined to the Bisina-Opeta wetland system by a series of marshes and papyrus swamps.

2.4 LAKE VICTORIA WATER MANAGEMENT ZONE

Figure 6: WMZ

Source: Uganda Water CAS, World Bank, 2011

Table 7: Summary of LVWMZ

Feature(s)	Description
Socio-economics	Lake Victoria fisheries provide employment, income, and export earnings to the riparian communities besides being the nucleus activity. It is Africa's largest inland fishery and the most productive freshwater fishery. Fishery yield from the lake is of the order of magnitude of 800,000 – 1,000,000 tons valued at 350–400 million US$ at the beach, with export earnings estimated at US$ 250 million. The fishery is supported by three main important fish stocks, the Nile perch, Rastrineobola argentea (Dagaa, Omena or Mukene) and Nile Tilapia (Oreochromis niloticus). Over 75% of the Nile perch is directed to the fish processing factories for export while Dagaa and tilapia are serving the regional and local markets. **<u>The Socio-cultural and economic values of the Sango Bay Ecosystem</u>** The SAMUKA system is of high socio-economic, national and international importance to the people living in the surrounding and distant areas. system is a source of fish to the people of the area, source of medicinal plants, raw materials for building and making crafts including luxurious sofa chairs and mattresses. The plains are also used for grazing and tourism has been developed on Musambwa Island.

Feature(s)	Description
	Many forest trees and wetland shrubs and herbs are used as medicine. The Phoenix poles are used for fencing and crashed to form fibrous materials used for making luxury sofa chairs and mattresses. The wetland is also important as source of raw materials for handcrafts, building materials, fuel, and for hunting. Fisheries in wetlands, and especially based on the Clarias spp, is socially very important. The wetlands are targeted for the Clarias, which are used as bait for catching Lates niloticus from Lake Victoria. There are huge catches of Protopterus aethiopicus(Mamba), which is considered a local delicacy, from the wetlands fringing the Kagera and Lake Victoria. There has been a long history of cultural attachment to Musambwa islands, where women are not allowed to stay overnight. The Musambwa islands are important for the breeding of the Grey-headed Gulls. During periods of drought the local communities use the floodplains for grazing their cattle. Sango Bay Forest Reserve area contains one of the World's Stone Age Sites. The Site internationally known as the Sangoan Archaeological Site is located both in the wetland areas of the woodland forest and has some of the tools which were used by Stone Age men approximately 200,000 years ago. The Site has archaeological and religious importance.
Physiography and Land Use Pattern	Lake Victoria has a surface area of 68,800 km^2 (26,600 sq mi), making it Africa's largest lake by area and the largest tropical lake in the world. It contains about 2,750 cubic kilometres (2.2 billion acre-feet) of water. The largest stream flowing into the lake is the Kagera River, the mouth of which lies on the lake's western shore. There are two rivers that leave the lake, the White Nile (known as the Victoria Nile as it leaves the lake), flows out at Jinja, Uganda on the lake's north shore and the Katonga River flows out at Lukaya on the western shore connecting the lake to L. George. <u>Lake Victoria Basin:</u> The lake basin has the fastest growing population in East Africa, of over 30 million, a third of the combined population of the East African States. Much of this population derives its livelihood directly or indirectly from the lake resources. The three East African partner states designated Lake Victoria and its basin as an economic growth zone because of its great economic potential, which includes a productive fishery, freshwater for domestic, industrial and agricultural use, hydropower generation, aesthetic value, recreation and tourism, transport and the unique biodiversity along the shorelines and on the islands. <u>Fish stocks:</u> The Frame survey data done by Lake Victoria Fisheries Organisation indicates that fishing effort has been increasing substantially between 2000 and 2006. The number of fishers increased

Feature(s)	Description
	by 52%, from 129,305 to 196,426; number of fishing crafts increased by 63% from 42,493 to 69,160; number of fishing crafts using outboard engines increased from 4,108 to 12,776, a 211% overall increase in motorization. This suggests that the fishers go far in search of fish. Over the same period, the total number of gillnets also increased by 88%, from 650,653 in 2000 to 1,222,307 in 2006 and longline hooks by 61% from 3,496,247 to 9,044,550 hooks respectively. Lake Victoria has undergone successive disruptions since the early 1920s. Major changes in the ecosystem are: intensive non-selective fisheries, modification of the vegetation in the drainage basin, Nile perch (*Lates niloticus*) invasion and introduction of other exotic fish species, and the progression of physico-chemical changes in the lake. One of the dramatic changes is the development of a seasonal and lake-wide anaerobic hypolimnion which now threatens the integrity and biodiversity of this ecosystem. The endemic fish community of haplochromids has undergone a reduction in abundance and species diversity.
Hydrology	Lake Victoria receives almost all (80%) of its water from direct precipitation. Average evaporation on the lake is between 2,000 - 2,200 mm per annum, almost double the precipitation of riparian areas. In the Kenya Sector, the main influent rivers are the Sio, Nzoia, Yala, Nyando, Sondu Miriu, Mogusi and the Migori. Combined, these rivers contribute far more water to the lake than does the largest single in-flowing river, the Kagera, which enters the lake from the west. The only river flowing out of the lake is the White Nile. The lake exhibits eutrophic conditions. In 1990-1991, oxygen concentrations in the mixed layer were higher than in 1960-61, with nearly continuous oxygen supersaturation in surface waters. Oxygen concentrations in hypolimnetic waters (i.e. the layer of water that lies below the thermocline, is noncirculating, and remains perpetually cold) were lower in 1990-1991 for a longer period than in 1960-1961, with values of <1 mg per litre occurring in water as shallow as 40 m compared with a shallowest occurrence of >50 m in 1961. The changes in oxygenation are considered consistent with measurements of higher algal biomass and productivity. These changes have arisen for multiple reasons: successive burning within its basin, soot and ash from which has been deposited over the lake's wide area; from increased nutrient inflows via rivers, and from increased pollution associated with settlement along its shores.
Ecology	Before 1954, Lake Victoria's ecology was characterized by enormous biodiversity. It was inhabited by over 500 species of fish, 90% of which were Cichlids belonging to the Haplochromis species 'flock'. They are

Feature(s)	Description
	known for their extraordinary ability to evolve rapidly to suit extremely localized and diverse environments, a characteristic termed 'evolutionary plasticity'. This ability has made the cichlid species of L. Victoria an extremely successful fish. *Haplochromis* species accounted for some 80% of the fish biomass of the lake, an abundance which led Graham to believe that this species flock could support a trawler fishery of up to 200 boats. It also meant that Lake Victoria at one time boasted one of the most diverse fish environments on earth. With such diversity, the cichlids of Lake Victoria managed to exploit virtually every food source available, including most detritus, zoo- and phyto-plankton. On the whole, however, *Haplochromis* species are a small and bony species, and were generally not favoured in catches. Riparian populations preferred the lake's two endemic species of tilapia (*Oreochromis esculentus* and *O. variabilis*). Hence, by the late 1940s, British colonial authorities were debating the overall ecological efficiency of the lake. For many authorities at this time, the lake needed a large and efficient predator to turn Haplochromis fish stocks into something more economically valuable. The prime candidate was the Nile perch (Lates niloticus). This argument is central to what would eventually occur on Lake Victoria, and is therefore considered in some detail. The water hyacinth Eichhornia crassipes, a native of the tropical Americas, was introduced by Belgian colonists to Ruanda to beautify their holdings and then advanced by natural means to Lake Victoria where it was first sighted in 1988. There, without any natural enemies, it became an ecological plague, suffocating the lake, diminishing the fish reservoir, and hurting the local economies. By forming thick mats of vegetation, it causes difficulties to transportation, fishing, hydroelectric power generation and drinking water supply. By 1995, 90% of the Ugandan coastline was covered by the plant. With mechanical and chemical control of the problem seeming unlikely, the mottled water hyacinth weevil Neochetina eichhorniae was bred and released with good results.
Environmentally and Ecologically Sensitive Areas	The Sango Bay Forest Reserve and Sango Bay-Musambwa Island-Kagera Wetland System Ramsar site constitutes on of the Wetlands of International Importance' known as Ramsar Sites in Uganda and in the Lake Victoria Basin areas. It is located 310 39' – 31052'E and 00059' – 00049" S, with an altitudinal range of 1,130 to 1,190m a.s.l. It is a complex system composed of Sango Bay wetland; Kagera wetland and Flood Plain; and, encompasses Musambwa Island which lies about 3 km in the lake, from the Sango Bay shoreline - stretching to the Uganda-Tanzania National boundary, making it an important international cross-border management site.

2.5 UPPER NILE WATER MANAGEMENT ZONE

Figure 7: Section of Uganda showing Upper Nile Basin Water Management Zome

Source: Uganda Water CAS, World Bank, 2011

Table 8: Key Features of Upper Nile Basin

Feature(s)	Description
Socio-economics	The upper Nile region surrounding Lake Victoria is one of the most densely populated of Africa with up to 1200 persons km in parts of Kenya. Population growth rates are among the highest in the world. In 1985, 32% of the Kenyan portion of the catchment was occupied by agriculture and, with population having doubled in the interim, deforestation and excessive cultivation with little input use have been the predominant land use trends. Additionally, the area has one of the poorest rural populations in the world. The pervasive poverty has hindered sustainable use of land resources increasing degradation which is now the single most important threat to agricultural productivity. Much of the population depends on rainfed agriculture for its sustenance upon the cultivation of maize (Zea mays) and common beans (Phaseolus vulgaris) which rank first and second in importance as food staples in this region. Food security is a major concern. Maize-bean intercropping is practiced on >80% of the area in the Kenyan catchment, 45-80% on the northern shores in Uganda, 25-45% on the west (Uganda and Tanzania) and >80% in the southern catchment (Tanzania).

Feature(s)	Description
Physiography and Land Use Pattern	The Upper Blue Nile River Basin is located in the Ethiopian Highlands and has a drainage area of about 176,000 km^2 upstream of El Diem and comprises of six sub-basins. The river originates in Lake Tana and flows to the Sudanese Border to eventually meet the White Nile River at Khartoum, Sudan. The climate of this area varies from humid to semi-arid. Most precipitation occurs in the wet season called Kiremt (from June to September). The two other seasons are known as Bega (normally dry; from October to February) and Belg (normally mild; from March to May). The seasonal precipitation based on data from 1961 to 1990 shows about 240 millimeters (mm), 990 mm, and 190 mm in Belg, Kiremt, and Bega, respectively. About 70% of annual precipitation is concentrated on Kiremt. The annual precipitation has an increasing trend from northeast to southwest. The estimated mean annual precipitation of the study area ranges from 1,200 to 1,600 mm based on data from 1961 to 1990 depending on the studies. The mean annual temperature estimated using the records from 1961 to 1990 is 18.3°C with a seasonal variation of less than 2°C. The annual potential evapotranspiration is 1,100 mm with a seasonal variation of less than 20 mm. Both cited studies used the Thornthwaite method based monthly temperature data from 1965 to 1969 and from 1961 to 1990, respectively. Due to the summer monsoon occurring between June and September, more than 80% of the annual flow occurs from July to October and flows to the downstream countries due to the absence of storage capacity. Small tributaries in the mountainous region experience large fluctuations of streamflow due to the seasonal variation of precipitation (UNESCO, 2004). The monthly discharge time series at El Diem, which is the main outlet of the basin, between 1921 and 1990, taken from the National Center for Atmospheric Research, produce a mean annual discharge of 49 cubic kilometers (km^3) with a minimum of 31 km^3 (between 1972 and 1984) and a maximum of 70 km^3. The estimates of mean annual discharge at the same location from previous studies range from 46 to 54 km3 due to the difference in recording periods and the number of data points.
Hydrology	The Nile River is about 6,700 km and it traverses international boundaries and travels through 10 riparian countries with variable water resources availability and dependency. It has a total catchment area of 3 million km2 its average run-off is 30 mm. The major contributors of the total flow come from the East African lake region and the Ethiopian Highlands. The Nile has three main tributaries, including the White Nile, Blue Nile and the River Atbara.

Feature(s)	Description
	The hydrology of the Nile is contributed largely the many tributaries in the riparian water body systems and these range from Lake Victoria and its numerous tributaries, through the lower Lakes Kyoga and Albert which contribute inflows to the White Nile in different periods. A major feature of the Lake Plateau is the great increase in outflows between the periods before and after 1961–1964. The lake-fed inflow to the Bahr el Jebel where it enters the Sudd wetland is supplemented by the highly seasonal flow of the torrents, and half the inflow is lost by inundation of the wetlands and subsequent evaporation. The Blue Nile provides the greater part of the flow of the main Nile, but its contribution is more seasonal than that of the White Nile, being the residual of seasonal rainfall on the Ethiopian highlands. The regimes of the Atbara and the main Nile lead to a discussion of the Aswan High Dam and the variability of the tributary flows over the period of records. It can be summed that; the Nile River's hydrology is highly influenced by the monsoon season. During the months of July-November the river Atbara and the Blue Nile contributes approximately 5/7 of the Nile's mean annual flow. Contrarily, the White Nile is not perennial, and as such, it produces a steady base flow year around.
Ecology	The biota of the basin is moderately diverse, and endemism tends to be low, except in some of the old source lakes. The situation is complicated by the fact that at least two of these lakes (Victoria and Tana) dried out around or slightly before the beginning of the Holocene, and thereafter, speciation (especially of cichlid fish) may have happened at an unusually great speed. In general, the Nile offers a pathway for African species to extend from the tropics to a Mediterranean climate and spill over into the Levant and Arabia. Currently, as elsewhere in the world, invasive species in the Nile are becoming more and more common, although the oldest cases (some Ponto-Caspian cnidarians) may date back to the end of the nineteenth century. The water hyacinth *Eichhornia* has invaded the Nile basin in at least three different zones. Since early pharaonic times, man has interfered with the river and its flow regime, in an effort to control the yearly flood of a hundred days, but large-scale damming only started in the nineteenth century, and culminated with the construction of the Aswan High Dam in the 1960s, reducing the river to a giant irrigation canal. More recent developments include the construction of the Toshka lakes diverticle to Lake Nasser. The river and its lakes are important fisheries resources; the various dams are generating large amounts of power, and fossil hydrocarbon deposits are under development in at least three zones of the basin.

Feature(s)	Description
	This may contribute to river pollution, which is still a local phenomenon, except in Lake Victoria, which suffers from eutrophication, and in Egypt, that combines a population explosion (almost four doublings in the last century) with a substantial industrial development.
Environmentally and Ecologically Sensitive Areas	The whole of the upper Nile River is squeezed through the narrow gap that is Murchison Falls. The Nile River of Murchison Falls National Park forces itself through a narrow gap in the rocks and drops 140 feet in three cascades. In addition to wildlife, the Murchison Falls reserve protects clean water and draws tourists that bring in much needed revenue. The park boasts at least 109 mammals, 476 bird, and 149 tree species. The park is also notable for its large population of Uganda kob, an antelope that has an unusual lekking breeding behavior in which males defend small territories and are visited by female mates. One of the world's most easily visible wild populations of the rare shoebill stork occurs in this landscape. Other important ecological areas include: **Wildlife:** Ajai Wildlife Reserve, East Madi Wildlife Reserve, Kidepo Valley National Park, Lomunga Wildlife Area, Tim Padwat Wildlife Area **Springs and waterfalls**: Amuru Pii Hotsprings – Panyimur and Amuru, Aruu Falls, Moki Springs **Forest Reserves**: Agoro-Agu Central Forest Reserve, Era Forest, Mt Waki. Two other important forests are the Mt Otzi forest ranges and Zoka forest. Mt. Otzi Forest Ranges are some of the most scenic mountains in northern Uganda. The mountain overlooks the confluence of Achwa River with the Albert Nile as it passes into Sudan. Mt. Otzi is adjacent to Nimule National Park in Southern Sudan and Dufile Wildlife Sanctuary in Moyo District, thus combining a wide variety of elevations and ecosystems, including the area's highest point (Nyeri, 1,708 m asl) offering vistas of both Uganda and Sudan. It has the advantage of being higher and cooler than the surrounding land, so there is potential for hiking and mountain biking. The mountain ranked tenth out of 65 forest reserves in Uganda in species diversity and rarity of species. The Nyeri range is home to an isolated chimpanzee population, and is the sole habitat for chimpanzees in northern Uganda.

2.6 ALBERT NILE WATER MANAGEMENT ZONE

Figure 8: Albert Nile Basin Water Management Zone

Source: Uganda Water CAS, World Bank, 2011

Table 9: Key Features of Albert Basin Water Management

Feature(s)	Description
Socio-economics	The region receives a bi-modal type of rainfall with peak period of March to May and September to mid November that is favorable weather condition for crop production. However, crop production is well short of its potential because of the following: banana wilt disease (panama wilt), coffee wilt disease, soft rot of Irish potatoes, fungal injection of citrus, high costs of inputs, limited access to agricultural credit, inadequate extension services, poor management practices and lack of an organized marketing system. Livestock keeping and rearing is common along the river and lakeshores where there is high carrying capacity. The rivers and the lake are the main drinking points for the animals. The livestock sector is faced by the following problems: epidemics like foot and mouth diseases, inadequate water supply, poor pasture and rangeland management, low animal genetic performance and poor livestock market facilities. **Agriculture:** Crop farming is the main economic activity in the catchment area that supports 75% of the population. It is characterized by subsistence farming with women providing the biggest agricultural labour force, smallholder out-growing, and plantation. The region enjoys favourable climate conditions and

Feature(s)	Description
	fertile soils that make it possible to grow a variety of food and cash crops. The main food crops grown include: maize, cassava, bananas, sweet potatoes, beans, vegetables, millet, sorghum, simsim, groundnuts, Irish potatoes, soybean, and upland rice, beans, groundnuts, and fruits. **Fishing:** Fishing is one of the main economic activities in the lakeshores of Hoima, Masindi and Kibaale districts. The sector provides employment, income to those engaged in the fishing process, distribution and marketing. It is also a source of protein for many families within and other districts in the country. Masindi district is popular for the production of salty delicious fish in Uganda that is caught in Lake Albert. The fish types that are caught include Tilapia, Nile perch, Nganya, Semutundu, Malapterurus electricus and cat fish. Gillnets are the most common type of fish gears used by fishermen and the mostly used gear size is 3.5 and 5 inches. Salting is the most common method of processing of fish in the area, followed by smoking.
Physiography and Land Use Pattern	The Albert Nile WMZ is largely comprised of the Lake Albert catchment area which is shared between Uganda and the DRC, is located at the northern tip of the western rift valley. On the Ugandan side, it stretches from the slopes of the Rwenzori Mountains in the Southwest, through the escarpment of Albertine Rift Valley down to the Victoria Nile delta in the northeastern end of the lake. The spatial extent of this catchment is a total area of 18,037 km^2. Lake Albert covers an area of 5,270 km2 of which 2,850 km2 (54%) is on the Ugandan side. At an altitude of 615 m it lies between two parallel escarpments, that on the western side rising abruptly to nearly 2,000 m above the water surface. Like most large rift valley lakes, the lake is ribbon shaped lying in the northeast southwest direction and runs approximately 160km in length and is 35km at its widest point. The lake is relatively shallow with an average depth of 25m and maximum depth of 58m and has a total volume of about 280 m^3. Agricultural encroachment and settlements in the forest reserve have resulted in massive deforestation. Almost no gazetted central forest reserves have clear boundaries. This has prompted immigrants and the indigenous people to cultivate in the forest reserves especially tobacco and sugarcane growing. Tobacco growing requires virgin land for high yield production. There is therefore annual clearing of forestland for tobacco growing. And this has drastically reduced on the forest cover in the past few years.

Feature(s)	Description
	People have settled in some areas of the reserve land with semi-permanent houses constructed.
Hydrology	Lake Albert (main water source for the Albert Nile) lies between two parallel escarpments in the Western Rift Valley, at an altitude of 619 m, with an extreme length of 180 km and a maximum width of 43 km. Just over 56% of its surface is in Uganda. The principal affluent streams are the Semliki, which enters at the southern end from the DRC, and the Victoria Nile, which enters in Uganda very close to the northern end. Both rivers have built deltas into the lake, that of the Semliki is the larger and 90% of it is in Uganda.
Ecology	The vegetation of the area can be broadly being classified into forest, savannah, grassland and swamps. The main functions for vegetation include providing water catchments, food and being rich in biodiversity, climate modification and ecological indicator. Forest vegetation covers most of the areas boarding Budongo forest and throughout the medium altitude forest zone.
Environmentally and Ecologically Sensitive Areas	The northern extremity of the lake on the Ugandan side is protected in the Kabalega (Murchison Falls) National Park. The park is bisected by the Victoria Nile and the river delta and the Kabalega Falls (where the Albert Nile leaves the lake) are included. About 25 km of the lakeshore is included in the Bugundu Game Reserve, a buffer zone on the south side of the national park.

2.6.1 REFUGEE HOSTING DISTRICTS

UGANDA REFUGEE STATUS

Uganda hosts a multi-ethnic group of refugees who include the Rwandese, Congolese, Ethiopians, Kenyans' Sudanese and Burundians. Uganda is the third largest refugee-hosting country in Africa. As a result of ongoing conflicts and instability in the Democratic Republic of Congo (DRC), Somalia and South Sudan, Uganda is currently hosting over 1,300,000 refugees and asylum-seekers. By October 2017, it estimated that, a total of 1,321, 207 refugees and asylum seekers were living in Uganda. Of these, 1,034,16 are South Sudanese. Under the Northern Cluster sub-component, IWMDP will support interventions in the refugee hosting districts of Yumbe, Adjumani, Moyo, Arua, Lamwo with refugee numbers standing as on Table 9:

Table 10: Refugee population in IWMDP in 5 Districts of Northern Uganda

District	Refugee population
Adjumani	35,535
Arua	184,701
Lamwo	300,000
Moyo	223,097
Yumbe	239,334
TOTAL	**1,082,667**

(Source: UNCH October Report, 2017)

COMMON CONFLICTS BETWEEN REFUGEES AND HOST CMMUNITIES

The relationship between refugees and the host communities in Uganda has largely been peaceful, despite isolated clashes and disputes between the two sections of these communities. The conflicting relationship between hosts and refugees in many cases serves to emphasize the importance of identifying main sources of conflict and co-existence in the relationship for achieving a peacefully relationship. The combination of limited livelihood opportunities in the host community and imbalance of humanitarian assistance appear to be the greatest challenges for promoting more coexistence. Some collaboration between host and refugees are identified at individual levels through socio-economic impacts and humanitarian initiatives. Nevertheless, situations of conflict in the relationship are more common and a challenge towards coexistence. Research on this subject reveal that, host communities' experiences of refugees' impacts are much related to how their relationship with the refugee population develops.

The presence of refugees has on some occasions created tensions and conflicts with host communities which is manifest in areas such as increased ***pressure on natural resources especially wood and construction materials; conflicts over access to water,*** given isolated locations of the settlements, access to clean waters is still a challenge for the women and children and in some instances, women fallen victims of rape in the search for water over long distances; there are also ***counter allegations over thefts of crops by refugees, conflicts over delivery of social services*** occasioned by the huge influx of refugee population into the refugee hosting areas in West Nile thereby putting major strains on services in those areas which were already quite overburdened and/or lacked proper investment. ***Conflicts over limited livelihoods sources.*** Other sources of conflict include ***sexual and gender-based violence*** (SGBV) is among the most serious protection concerns and priorities in Uganda refugee operations and is manifested in various forms including rape, sexual assault, domestic violence, early and forced marriages, denial of resources and harassment.

2.6.2 ADJUMANI

Adjumani district hosts up to 67,000 refugees in 8 different camps as Nyumanzi, Mireyi, Alero 1 and 2, Location and size Adjumani is one of the districts in the north-western region of Uganda. It is bordered by Moyo district in the North, Arua and Yumbe in the west, and Amuru District in the south and east. It has an average altitude of 1200m above sea level. Adjumani District headquarters are situated in Adjumani TC, Central Parish, Molokpoda village. Adjumani district has a total area of about 3128km^2 of which land area is 3081.2km^2.

POPULATION

The 2014 Population and Housing Census established the total population of Adjumani District (East Moyo county) at 231,623, of which 52.2% were female and 47.8% were male. This conforms to the country situation where there are more female than males. Pakele sub-county has the highest population in the district, while Arinyapi Sub-county has the lowest. The total land area for Adjumani District is 3,128km^2 and its population density was 74persons/km^2 per km^2 of land in 2014. It is believed, the population density has increased from 16 persons/km^2 in 1980 to what it is now.

WATER

The main water supply technologies in the district are deep boreholes, shallow wells and protected springs. Boreholes are spread throughout the district while springs are found mainly in southern part of the district. There are 646 boreholes in the district (both deep and shallow), 17 protected springs and 157-yard taps. Of the 646 boreholes, 50 are situated in Adjumani Town Council and 596 in the nine sub-counties. Functionality of the boreholes stands at 92% while latrine coverage stands at 84% for the district. Functionality has not reached 100% because some water points do not have active committee members and therefore are not collecting funds regularly. For water points where the committees are still active, they endeavor to hold meetings and collect money regularly. However, what they collect is still very low and not all households contribute to the Operation and maintenance funds. In some instances, the money collected is not accounted for properly, thereby discouraging others form making their contributions.

Figure 9: Water point in Nyumanzi refugee in Adjugopi Parish, Dzaipi Sub-county, Adjumani District

SANITATION

Latrine coverage is used as a proxy to measure for access to appropriate sanitation facilities. In 2013 the number of households with access to covered pit latrine stood at 87%. Latrine coverage in the district has slightly increased from 67% in 2010 to 68% in 2013. However, the availability of hand

washing facility is still below the district target of 71% which should be in line with the national aspirations. A reliable water source is one capable of supplying its beneficiaries, a minimum of 20 litres *per capita* per day as per the WHO recommended standards. According to the 2012 population census, 98% of the people in the district can access water within a reasonable walking distance of up to 5kms

GENDER ISSUES

Gender equity is a critical building block in sustainable development in any society. However, there are a lot of gender issues which are not mainstreamed in development programmes/activities in the district. Employment status of men and women in the district departments at senior level reveals that there is high gender disparity standing at 57.2%. This reflects the low level of education and little priority accorded to the girl children. Further still the fewer number of women at senior levels translates into gender biases and insensitivity. There is dominance (70% men and 30% women) in local leadership positions especially in project management. Contrary, there is low participation and commitment of men compared to women in the sustenance of local development initiatives in the community. Most women (95%) are prone to domestic and sexual gender-based violence compared to men (5%). It has been observed that there is low participation of men (20%) in both provision of care and support to children.

In the district, most women (95%) do not own productive resources (land, animals etc.) compare to men (5%). Other gender issues include; low participation of men (approx. 900 males &3000 females) in providing health care services to children compare to women, more boys (50.9%) enrolment than girls (49.1%) in schools at upper levels, low participation of women in deciding on community facilities and their locations compare to men (35%-65% of female in water users committee, 100% of decisions are made by men in the district water office.

A number of factors, mainly cultural in nature has denied women access to education or forced them to drop out of school. UBOS survey (2014) puts the illiterate rate among women at 47% and that of men at 22%. This indicates that most women are general illiterate in the district compared to their counterparts, the men. The rural women are worse off in this situation with their illiteracy standing at 49% compare to the urban ones at 33%. This trend is due to the traditional attitude that gives preference to boys‟ education than girls‟ education where girls are expected to get married off at an early age for source of wealth in form of bride price. This partly explains the gender imbalances in the enrolment of both the boy and girl children both at higher primary and secondary level.

SEXUAL AND GENDER-BASED VIOLENCE

Sexual and gender-based violence (SGBV) refers to a range of actions by which an individual is exploited because of her/his sex or gender. This includes physical, emotional, psychological and socio-economic abuse such as rape, female genital mutilation, domestic violence, forced marriage, exploitation, threats, confiscation of money or identity cards, and restrictions on freedom of movement and liberty (UNHCR[19], 2007). For instance, some of the forms of SGBV cases recorded by

[19] Sexual and Gender Based violence in refugee settlemnst in Uganda, UNHCR, Kampala.

police from both refugees and host communities in the district of Adjumani include; defilement, rape, early marriages, indecent assaults, and domestic violence. However, amongst the Dinka population, marriage of girls below 18 years is culturally acceptable while the Uganda laws labels such as defilement. Therefore, due to the differences in the culture and legal regimes both in the host communities and refugees, perception of a practice can be viewed as violation of rights which triggers conflicts. This shows that, gender and rights of women are strongly influenced by the culture and tradition of both the refugees and host communities (CEPA, 2017).

VULNERABILITY

Women remain economically marginalized: among Ugandans, 90% of all rural women work in agriculture, as opposed to 53% of rural men. As a result, women in both refugee and host communities are disproportionately affected by changing livelihood patterns, conflict, natural disasters and climate change. It is known that low education levels among girls is one of the factors contributing to early marriage, with ensuing complications for maternal health. In Adjumani, both within the host communities and in the refugees' areas, boys are preferred over girls on a number of aspects which leads to their marginalization with respect to allocation of resources and decisions.

2.6.3 ARUA DISTRICT

Arua district lies in the North-Western Corner of Uganda. It is bordered by Maracha district in the North West; Yumbe in the North East; Democratic Republic of Congo in the West; Nebbi in the South; Zombo in the South East; and Amuru district in the East. In total the district covers an area of 4,274.13km2, of which about 87% is arable. It is located 520 km from Kampala and only 80 km from the South Sudan Border.

CLIMATE

The project area has a bi-modal rainfall pattern with light rains between April and October. The wettest season normally August and September receive 120mm/month. The average total rainfall is 1250 mm per year. The mean monthly evaporation ranges from 130-180 mm. In the dry season (December-March) temperatures in this part of the country remain high throughout.

VEGETATION

The dominant vegetation consists of savannah woodland and the common tree species are Shea nut butter tree, locally called "awa" in Madi Language or "Kumura" in Lugbara (*Vitellaria paradoxa* formerly *Butyrospermum paradoxum*), Oli (*Acacia species*), Adu/Emeku (*Combretum species*), among others. The vegetation has not been fully described before however, the western higher altitude areas have higher tree vegetation cover than the eastern and is where the National Forest Authority (NFA) Central Forest Reserves (CFR) are located. It is noted that, the presence of refugee settlements has had an environmental impact on land in Arua and West Nile as a region. The host areas have suffered impacts of charcoal burning and tree cutting for set up of shelters.

DEMOGRAPHY

As at 2016, the district had an estimated population of 820,500, of which 36,731 9 (4.5%) were refugees. By May 2017, Arua hosted 151,039 refugees, accounting for 18 percent of the district population. The refugees, mainly from South Sudan are of diverse ethnic backgrounds; Dinkas, Kuku,

Nuer, Kakwa, Madi, and Siluk and have close ethnicity with the locals who are Kakwa, Madi, Alur and Lugbara. This partly explains the peaceful coexistence in the community. Arua promotes the government's exemplary refugee settlement model that allows refugees to interact freely and set up investments, which provides an opportunity to harness their potential to accelerate local economic development. Generally, the refugee and host communities enjoy a cordial relationship, which offers a favorable environment for doing business.

WATER AND SANITATION

The water supply in Arua district is inadequate not only in the refugee settlements but also in the host communities. The safe water access rates in Arua on sub-county basis is 42 % in Pawor Sub-County to 95 % in Okollo Sub-County. Arua has 2,579 domestic water points which serve a total of 653,573 people – 592,053 in rural areas. 364 water points have been non-functional for over 5 years and are considered abandoned. It is important to note that, the district is witnessing rapid growth with its critical challenge being safe water coverage. Its major water supply is from River Enyau system which is increasingly being affected by growing water demands largely due to growing numbers of upstream users exacerbating the flow conditions during the dry season.

EDUCATION

Arua District has a total of 311 Government Grant aided primary schools and 48 Licensed Community Schools. Registration at the beginning of the year stood at 362,000 pupils but by the end of year, attendance dropped to 227,000 pupils causing a net non-attendance of 135,000. At the beginning of the year, boys stood at 185,000 while the girls stood at 175,000. Of the 175,000 girls, 121,000 were from the lower classes of P1-P4. Of the 135,000 children that dropped out, the percentage drop out stood at 68% for girls and 32% for boys. Arua District has a total of 480 permanent classrooms. Taking 40 pupils per classroom. Arua District has a total of 32,000 desks that means it can only sit 96,000 pupils. A total of 266,000 pupils sit on the floor. Most of the schools (about 98%) have no staff houses with about 2% of the staff houses being of a temporary nature. To-date there are 30 permanent houses. This means 5,337 teachers are not staying in permanent houses.

THE GIRL CHILD

With the implementation of the UPE Policy, enrolment of the girls to school has been addressed. The retention of the girls in schools up to the level when they are able to compete favorable with boys in life still remains a challenge. Girls are still vulnerable and this affects their education. Early marriage, defilement etc. are some of the issues that need to be addressed. UBOS 2014 census indicates that at the time of census, 14,622 of the girls aged 10–19 years in Arua were already married and 79 in the same category were already widowed. Divorce rates are also high for those girls. According to the census report, divorce rate was highest for females in the 20–29 years age group with a total of 3,108 cases. Therefore, this reveals that the Girl child is exposed to many dangers like defilement, child marriages, early contraction of diseases including HIV/AIDS exploitation (child labor) unequal opportunities in education, rape etc.

THE ECONOMY

The economy of Arua depends mainly on agriculture which employs over 80% of the households. Of those employed in agriculture, 86% are engaged in the crop sector, 0.6% in animal rearing, and 0.9%

in fishing. Both food and cash crops are grown. The major food crops include cassava, beans, groundnuts, simsim, millet and maize. Tobacco is the major cash crop and is the main source of livelihood for majority of the population in the district. There is renewed interest in the promotion of coffee production in many areas of the district now. With the total production volume of 275,994 metric tonnes of major crops, Arua has a strong agricultural raw material supply base for value adding agro-processing industries. Other non-agricultural activities include: general retail and whole sale, metal and wood fabrication, art and crafts production, fish farming and livestock farming. Tobacco is also grown extensively for income generation. Honey production and trade is a known income generating activity.

2.6.4 LAMWO DISTRICT

The district has an area of 5,588.3km^2, of which 90% is arable. However, the district is sparsely populated with population density of 24.5 persons/km^2 and therefore, uses limited land in agriculture. The district area of about 90% is available fertile arable land. Given the sparse population density of 24.5 persons/km^2, the community uses a small land area for agriculture. There is therefore available land which can be exploited for commercial agriculture.

POPULATION

In 2016, the population of Lamwo District was estimated at approximately 137,948. The population of the district is young, with age group under 18 constituting up to 58.2%. This puts a great pressure on the working population. Based on UBOS Statistical Abstract of 2016, the population trend in the district can be summarized as follows: 2014 (census) 134,431, 2015 (estimates) 135,600 and in 2016 (estimates) 137,948.

ECONOMIC ACTIVITIES

The district experiences two rainy seasons from March to June and from August to November which favors continuous growing of crops thus, contributing to the communities' food security. Agriculture is the main source of livelihood of in Lamwo District. Typical crops grown are cassava, sorghum simsim, sunflower, rice and beans. There is also trading carried out in some parts of project areas. Crop farming is the main source of livelihood of the population. Cotton is the main cash crop and other cash crops such as sunflower, simsim, rice, millet, sorghum, Ground nuts and beans are growing in importance. Recently barley and wheat have also been introduced and are grown commercially. Livestock farming supplements crop farming.

Climate change is one of the major environmental concerns in the area. This is characterized by increasingly long drought spells and/or sporadic irregular heavy rains and flooding, and this has greatly affected agricultural production (Figure 14), by creating uncertainty among farmers as well as destroying their crops. Drought also affects the livestock in the area.

EDUCATION

Majority of the people living in the host communities are primary school drop outs. Some of the reasons that were cited as a result of early school dropout were early child marriages most especially

among girl child, attitude of the parents towards education. There is no secondary school within the host community.
Schools that are within the host communities include; Apyeta Primary School, Padwat Primary school, Lugwar Primary School, Parachelle Primary School, and Akanyo Primary School.

HEALTH

Common Diseases – In the host communities, malaria remains highly reported and this is partly attributed to communities not clearing bushy surroundings, plant crops so close to housing and not clearing mosquito breeding sites. Other common diseases are diarrhea, RTI, gonorrhea and syphilis. HIV/AIDS prevalence rate is at 3.6% in the district. There are HIV/AIDs that exist within the communities such as Voluntary Counseling and Testing, TB screening, offering ARVs and ARTs to people infected with HIV.

There are four health centers serving the host communities that is; Palabek Ogiri HCIII, Lugwar HCIII, Padwat HCIII, Paracelle HCIII and Apyeta HCII. There are Out-Patient Department services, community outreach activities such as immunization, sensitization and mobilization for antenatal care (ANC). There are also nutrition programs for mothers carried out by Ministry of Health. There are no ambulance services within the health centers. The main referral hospital is Kitgum hospital which is over 80km away

WATER, SANITATION AND HYGIENE

NELSAP 2017[20] reports that, nearly 71.5% of the population in Lamwo reportedly use improved water sources (70.8% and 0.7% use boreholes and protected springs)**.** However, despite this seemingly rosy picture on safe water coverage, a sizeable section of communities reportedly relies on unimproved water sources which increases the prevalence of waterborne disease and the burden of service delivery through increased demand for health care. Other challenges experienced in accessing water at household in the area include; rampant breakdown of boreholes, drying up of the water source especially during dry season, long distance travelled to water source, long queues at the sources, poor water quality, sharing of water sources with livestock, refugees and stream floods.

The common source of water for domestic use are boreholes. There are 786 existing boreholes out of which, 234 are not functional and 124 are abandoned. Water harvesting is also undertaken mainly in schools and health centers). There are also springs wells that are a source of water for the communities. The sanitation sector is involved in hygiene promotion in communities and institutions. The area has very low toilet coverage with most homesteads having dilapidated toilets that are mud walled and grass thatched (Figure 14) with average latrine coverage being at 52%. In most cases, the communities have poorly constructed pit latrines made of mud and wattle. Others still practice open defecation in adjacent bushes to their homesteads.

2.6.5 MOYO DISTRICT

[20] *NELSAP 2017: ESIA for Nyimur Multi-Purpose Water Resources Project in Lamwo.*

Moyo District is located in the north-western corner, or West Nile region of Uganda. In total the district covers an area of 2,059 km^2, of which 192km^2 is rivers and swamps, 172km^2 is gazetted forest and game reserves. Approximately 78.9% of the districts' land is arable or suitable for cattle grazing and a population density of 115 persons per km^2. The distance from the district headquarters to Kampala via Arua and Gulu are 640 and 480km respectively.

CLIMATE

Moyo District receives about 1267mm of annual rainfall. It has a distinct dry period that begins from December to February. November and March have moderate rainfall. The two major peaks in rainfall occur in April (short rainy season) and between August and October (major rainy season). Areas along the Nile receive lesser rain than the rest of the district. The highest temperature recorded was 450 C in the months of January to February and lowest 29^0C in the months of August to October.

VEGETATION

The district has 28,365ha of Central Forest Reserve (CFRs), 20.0ha of Local Forest Reserve and about 44.0ha of Private Forest Reserve and 156,933ha of community forest reserve. But undoubtedly, there is reduction in these forests because they have been a source of all building materials (98% of the dwelling units are not permanent houses) and 99% of the households depend on wood fuel for their domestic energy needs. However, encroachment of forest areas and resultant deforestation is increasing. From 1985 to 2002 about 516.95ha of land cover in some forest reserves in Moyo District have been encroached. Deforestation is environmentally hazardous and also deprives people of the important values of forest to provide products.

POPULATION

Moyo District had a population of 194,778 according to the 2002 Population and Housing Census Report. The mid-year projection 2012 now puts the district's population at 382,400 of which 201,300 are males and 181,100 are females. The average annual population growth rate between 1991 and 2012 of the district was 7.7% compared to the national average annual population growth rate of 3.2%. Children below 18 years constituted 55% of the population and nearly half of the district population is below the age of 15 years. This population structure is expected to be youthful for the next 15 years and this poses a big population problem of high dependency ratio.

MAJOR ECONOMIC ACTIVITIES

According to the census report about 80% of the households in Moyo District depend mainly on subsistence agriculture as their main economic activity. Only 9.7% of the population was dependent on earned incomes and 0.4% on property income. The major crops grown include sweet potatoes, sorghum, cassava, simsim, groundnut, finger millet, maize, cowpeas and beans. Fishing is another main economic activity in the district. The Nile River is the main source of fish within the district.

GENDER ASPECTS

Gender imbalances still do exist in the district especially in ownership and access to productive assets such as land. Generally, women do not own nor control land. They only have access to the land but the decisions on what to produce and in what quantities remain the domain of men. Furthermore, although it is estimated that about 70% of the work force in agriculture are women they do not

control proceed of neither whatever is produced nor what they sell in the market. Gender Based Domestic Violence (GBV) is also common. Although there is no clear statistics on this matter but from the crime rate in Moyo District for 2010 it is clear that assault, defilement and rape have been common and most of the assault cases were directed towards women. According to Uganda HIV Sero-Behavioral Survey conducted in 2014/2015 the HIV prevalence rate is also higher among women 7.5% than it is among men 5%.

The percentage of girls in total primary school enrolment is still low at only 48.9% for girls compared to 51.1% for boys as per 2009 school enrolment statistics. Although, this has improved, there is low retention which also exhibits gender disparity with about 45% of boys and 35% of girls completing primary seven. Girls also lag behind boys in grade promotion and learning achievements. The percentage of passes among boys in PLE stands at 95.1% for boys compared to 92.9% for girls mainly due to many domestic works given to the girl child. According to Uganda Demographic Health Survey (UDHS) Report 2012 fewer girls are still enrolled at secondary level. The report shows that just one third of the girls who enrolled in primary are still in school at the age of 18 compared to half of the boys.

At household level, women's participation in decision making is low. Only about 35% of women in the district participate in making major household purchases and men believed that a husband should play the major role in making most household decision. These social vulnerabilities are as a result of demographic characteristics like age, disability, culture, unemployment as well as poverty and disaster.

EDUCATION AND SCHOOLS

Moyo District has 74 primary schools in total with community schools. Pupil teacher ratio stands at 1:45 slightly below the national standard of 1:50. The primary schools are more or less evenly distributed in the sub-counties and parishes unlike secondary and tertiary institutions (Table 10).

Table 11: Number of Educational Institutions by Type and Ownership

S/N	Facility	Ownership		Total
		Government	Private	
2	Primary schools	73	01	74
3	Secondary schools	6	11	17
4	Teacher Training College	01	00	01
5	Technical college	00	00	00
6	Vocational	00	03	03
7	Technical schools	01	00	01
	Total	**81**	**15**	**96**

Source: Moyo District Education Department

HEALTH

Under health, the district currently has a total of 38 health facilities namely (1 district Hospital, 1 Health Centre IV and 8 Health Centre III and 28 Health Centre II). Although about 90% of the households are within a 5km radius to a health facility, there are some households particularly in hard

to reach areas who can hardly access health care services and this situation has been worsen with the erratic drug supply in most of the health facilities due to delay by National Medical Stores.

HIV AND AIDS ANALYSIS

HIV and AIDS continue to pose a big challenge to the development of Moyo District. Most people in Moyo District today know HIV and AIDS as a life threatening sexually transmitted infection. Every household has at least lost a member, relative, or a friend to HIV and AIDS. In spite of awareness about the scourge there exist a big gap between knowledge and desired behavioral change. The National Sero-behavioural Survey conducted in 2004/2005 puts the prevalence rate at 2.6% for West Nile region of which Moyo District is part. The District has tried to scale up efforts in providing HIV/AIDS services in most of its Health Centers.

POVERTY AND LIVELIHOOD ANALYSIS

The people Moyo view poverty as lack of means to satisfy basic material and social needs, as well as a feeling of powerlessness. There is gender and location specific variations in the way the local people define poverty. Source of monetary livelihood and comfort of accommodation like good sanitation are paramount in urban areas while possession of productive assets like land and livestock are more critical in the rural areas. Women are concerned more with lack of land, water, family planning services resulting in large family size, lacking assistance, household food and poor welfare of children when they define poverty. Men relate poverty mostly to the inability to engage in meaningful employment and lack of productive assets. To the youth, the degree and extend of social connectedness and family welfare indicate the level of poverty. Therefore, the strategy to address poverty requires multi-faceted approaches.

The people of Moyo use a number of indicators that give meaning to the above characteristics. These indicators are generally grouped under material and non-material indicators. The most common material indicators include lack of food, clothing, shelter, money and inability to send children to school or for health services. In both rural and urban communities' men were more concerned about income and assets of production–land and livestock as material indicators. Women on the other hand were mostly concerned with assets for domestic use and consumption such as lack of food, bedding, gardens and spending much on treatment of children.

SAFE WATER COVERAGE

The district in total has 977 safe water points including household connections and the safe water coverage declined from 61.4% in June 2010 to only 47.0% by March 2011 below the national average of 63.0% due to drying up of water sources following climate change and decommissioning of 40 water sources that are non-functional for a long period of times. This implies about 53.0% of the population in Moyo do not have access to clean and safe water. Table 9 below presents the safe water coverage by sub-county. Aliba and Gimara sub-counties have the worst safe water coverage below 20%. While Lefori and Itula sub-counties are average at only about 50%. This implies that more than 65% of the population from Aliba and Gimara sub-counties do not have access to clean and safe water and they are very far from reaching the national safe water coverage which stands at 63%. While the sub-counties of Moyo, Dufile, Metu and MTC have better safe water coverage above the national percentage. All these limits the people access to safe drinking water leading to ill health and increase in household poverty

Table 12: Safe water coverage and functionality by sub-county for 2010

Sub-county	Percentage of water coverage of Rural & Urban populations				
	2007 FY	2008 FY	2009 FY	2010FY	2011
Aliba	24.0	18.92	20.76	19	14
Gimara	12.3	13.97	18.8	17	13
Itula	62.9	49.77	56.43	83	51
Lefori	52.2	38.24	47.54	32	50
Moyo	57.9	44.41	51.07	79	64
Dufile	67.5	68.96	72.32	77	61
Metu	65.2	56.49	63.24	93	62
MTC	67.4	57.07	61.92	92	60
District Average (%)	**51.4**	**43.05**	**49.09**	**61.5**	**47.0**

(Source: DDP Moyo, 2017)

SANITATION STATUS

The sanitation coverage in the district has been fluctuating with changes in weather. It often improves during dry season and decreases during rainy season. The average household latrine coverage is 75.0%. While the average school latrine coverage is 88.5%. Girls have a lower coverage 67.2% compared to Boys 109.7%. Over 25% of the households do not have latrines. Gimara and Aliba sub-counties have lower latrine coverage and even average safe water coverage. With the low safe water coverage, cases of diseases and poor health are common among the communities which are a typical characteristic of the poor. The key poverty pocket in the district could be easily seen in the sub-counties of Aliba, Gimara, Itula, Lefori, Metu and Dufile. This is basically due to their remoteness, low coverage of social services and unfavourable weather patterns within their locality as in the above analysis.

2.6.6 YUMBE DISTRICT

Yumbe district Yumbe district is located in the northwestern corner of Uganda with one international border: South Sudan in the North, on the southern and western side: Arua and Moyo and River Nile in the east. Yumbe district is a one county district known as Aringa County, and made up of twelve sub counties: Apo, Drajini, Romogi, Kuru, Kei, Odravu, Kochi, Kerwa, Kululu, Lodonga, Ariwa and Midigo; and one town council called Yumbe Town council.

CLIMATE

Yumbe district experiences a purely tropical climate due to her location within the eastern topographical rainfall zone. Rainfall is bimodal in nature. The wet season starts from March till May. June is usually sunny. The wettest season occurs in the month of August, September and October whereas the dry season runs through from the month of December till early march.

RAINFALL

Rainfall, Temperature, Humidity and Winds Yumbe receives an average total rainfall of 1,250mm. The area experiences a two-seasonal rainfall, light rains between April and October. The wettest months are usually August-September with >120 mm/month. The period December-February is dry with less than 60 mm/month. The rain is associated with the northern and southern movements of the inter-tropical front. Mean monthly evaporation ranges from 130-180mm. The prevailing wind is from the east to the west with frequent windstorms during the dry season. Temperatures are generally high

during the nights of dry seasons (Dec.-March) similar to those during day hours whereas during wet seasons, temperatures remain high during day and fairly low during the night hours.

LAND USE

The major land use patterns in the district are in terms of human settlement pattern which tends to be linear, scattered and clustered. The proportion of land under agriculture/farming in the district is estimated to be 2,411 km^2 (about 1.2% of total national area), of which, about 1,929km^2 is under agriculture (80.1%), 411.7km^2 under forestry and woodlands (7.1%) and wetlands and water bodies account for 70.2 km^2 (2.9%).

VEGETATION

About 80 percent of the total area of Yumbe is for agriculture, most of it is cultivated. Forestry and woodlands cover a very small part i.e. only 17.1% of the total area. The district has a total of 411.78 km2 of land under forestry and woodlands. There are three central forest reserves in the district; Mt Kei natural forest reserve which is also a conservation area, covers an area of 40,689ha; Lodonga forest reserve is a plantation which is being majorly cultivated by tobacco farmers YUMBE District Statistical Abstract for 2012/13 association to produce woodfuel and has an area of 106 ha and Koloa forest reserve with an area of 614 ha, has the same status with Lodonga forest reserve. The remaining part is either ungazetted community forests e.g. Ujiji in Odravu sub county, or woodlands.

POPULATION

Yumbe District population in 2013 is projected to be 589,500 people, where there are 306,100 males (51.9%) and 283,400 females (48.1%). About 94% of the population live in rural areas where as only about 6% live in the urban areas. It has a population growth rate of 7.9% making it one of the highest in Uganda and is attributed to high fertility rate of 7.1 and low mortality rates. To date, the district population is predominantly youthful with the elderly population (65+ years) constituting a meagre 3%. The district is predominantly comprised of Muslims (77%) followed by Catholics (14%), Anglicans (8%), Pentecostals 0.7 (0.3%). Yumbe district hosts the Bidibidi refugee settlement with an estimated refugee population 270,000 as at March 2017 and covers an estimated 250km^2. Bidibidi refugee settlement is situated across 5 Sub-counties namely; Romogi, Kululu, Kochi, Odravu and Ariwa. Most of the population in Bidibidi refugee settlement is female (53%) and children (68%)2. Therefore, most households are female headed.

POPULATION DISTRIBUTION

The distribution of population by age and sex is among the basic types of information needed for planning. Analysis of educational requirements, labor force projections, household composition and migration for example, would not be complete without considering information on age and sex. Sex and age composition of a population has significant implications for the reproductive potential, human resource, school attendance, family formation, health care and other service delivery in general. Yumbe district with its area of 2,411km^2 has therefore, the population density of about 209 persons/km^2 of its land.

AGRICULTURE

Agriculture is the major economic activity in Yumbe district. Most farmers are small holders who grow both perennial and annual crops. The perennial crops include Banana, Coffee, and Tea, while the annuals include maize, sweet potatoes, beans, cassava and groundnuts. Crop production is the major agriculture activity in Yumbe district. It occupies 72% of the farming households. Most of them grow tubers especially cassava and potatoes which are the main staple food in the district. Cassava is normally grown together with either ground nuts or beans and on average a household would grow half --an acre in a year. Cassava and potatoes constitute 46% of the Crop farming households. The second largest crops grown are cereals including sorghum, millet and maize to supplement their food. Millet and sorghum are normally inter-planted while maize goes with beans or ground nuts. Cereals growing are done in 25% of the crop farming households and are on average grown on three quarters of an acre per household per annum.

POVERTY DISTRIBUTION IN YUMBE DISTRICT

Poverty has many different dimensions, ranging from material well-being (basic needs of like nutrition, good health, shelter, education etc.) to lack of human rights, citizenship or social networks. Economic factors such as low income, lack of assets, access to markets or public services can lead into poverty. According to the 2012 population and housing census analytical report, about 86.1 percent of the people in Yumbe district are engaged in subsistence farming using simple tools like hoes, pangas and axes. They grow food crops like maize, cassava, beans, ground nuts and simsim among others. Some of the farm produce is sold to purchase other items like salt, soap and school fees. Some households' rear goats, sheep cows, birds, rabbits and in some non-Muslim families they also rear pigs. Major cash crops in the district include tobacco and cotton which is grown by few people.

According to the Yumbe District Livelihoods Support Programme appraisal report, 89% of the population is poor. This means that most of the population falls under chronic poverty and transitory poor (moving or descending into poverty) which is manifest in terms of:

a. Households who have one rough meal per day;
b. Households with houses built with mud and wattle and grass thatched roofs;
c. Big family size, with polygamous marriages widely spread, family sizes average at about 12 members each;
d. Low education level of household heads;
e. A high percentage of the household heads have less than four years of formal education;
f. High likelihood of widowhood. Life expectancy in Yumbe district is 47 years for women, and 43 years averaging at 45 years;
g. Polygamy, the predominant faith in Yumbe district being Islam (77%) with a common belief among the followers that one can marry up to 4 wives, reinforces the practice of polygamy as a norm within the community; and
h. Alcoholism and exclusions from community activities.

LIVELIHOOD OPPORTUNITIES IN YUMBE DISTRICT

Source of Livelihood Agriculture is the dominant economic activity of the country. The sector provides employment for 72% of the labor force. However, most of the agricultural activity is of subsistence nature. This is generally characterized by the engagement in crop production, stock rearing, and associated activities mainly for own consumption. Subsistence farming is usually associated with, risk

and uncertainty (especially when based on seasonal rains) and low productivity. Table 12 gives a summary of the main sources of livelihood (in percentage) for households in Yumbe district.

Table 13: Percentage Distribution of the main sources of household livelihoods in Yumbe

No.	Economic activity	% Contribution
01.	Subsistence Farming	86.1
02.	Earned income	08.0
03.	Property income	01.4
04.	Others	4.5

EDUCATION

There are 2 private owned primary schools, 42 Community founded, 43 Muslim, 23 catholic and 14 church of Uganda founded schools, making a total of 114 primary schools in the district. Also, there are 3 technical schools in the district evenly distributed in the sub counties of Odravu, Lodonga, and Romogi. There are 5 government secondary schools, 6 communities and 8 individual/privately owned secondary schools, giving a total of 18 schools in the district.

ENVIRONMENTAL DEGRADATION

The fairly high population growth rate of about 4.3% per annum has huge effect on the original vegetation of the district. There is massive deforestation particularly on privately owned land, where over 80% of the districts tree resources are. This is closely followed by wetland degradation as a result of cultivation of crops. Other threats are soil erosion whose magnitude and impact has never been quantified. Woodlands are being cleared for agriculture, to provide construction materials and to provide wood fuel which is used by about 99% of the population. This has further enhanced the deforestation rates. Encroachment on forest lands in form of land for cultivation and grazing leaves the land bare. All the above and other factors have led to continued decline in forest area coverage.

GENDER

Gender dimension in the district is largely male dominated in a number of sections of economy and decision making which is summarized as follows:

a. Ratio of girls to boys in primary education: 101:100
b. Ratio of girls to boys in secondary education: 112:100
c. Ratio of men to women in policy decision making issues is 1:5
d. Proportion of seats held by women in lower local government councils and higher local government councils is 40%
e. Proportion of women having rights to own property (land, household property etc. no data)
f. Number of bye-laws in favor of widows is 1N^{o}.
g. Number of domestic violence cases handled by probation/gender office and police are 11 as of October, 2017
h. Number of women groups with objective uplifting status of women are 34

SAFE WATER COVERAGE AND SANITATION SITUATION

The percentage of safe water coverage in Yumbe is estimated to be at 33.7 percent based on a source man- ratio of 300 people per borehole 300 people per shallow well, 200 people per protected spring and 150 people served per Gravity Flow Scheme tap. It is also based on the functional water sources at the time of spot check as at July 2017 (Table 13). On sanitation indicators, the percentage of households using hand washing facilities accounted for 3% while that with kitchen and bathrooms stood at 94%. On the other hand, none of the households especially in the urban areas is connected to sewerage line.

Table 14: number of safe water sources by type

No.	Water source	Number
01	Boreholes	364
02	Shallow wells	97
03	Protected springs	33
04	Tap water	301
	Total	**795**

2.6.7 KIRYANDONGO

Kiryandongo district is located in the mid-western part of Uganda, with its headquarters 218 Km from Kampala. It borders Nwoya District in the North, Oyam in the North East, Apac in the East, Masindi in the South and South West and Buliisa in the North West. The District has a land area of 3,624.1 km^2 of which 1,747km^2 is arable. Kiryandongo refugee settlement is located near the town of Bweyale in Kiryandongo District, Western Uganda and hosts refugees predominantly from South Sudan and Kenya.

POPULATION

The 2014 Population and Housing Census recorded Kiryandongo population at 266,197 of which, 133,701 (50.3%) are males and 132,496 (49.7%) are females. The population density stands at 74 persons/km^2. UBOS 2014, reveals that Kigumba sub-county in Kiryandongo District had the highest number of household (9,260) and population (45,250) with Masindi Port with the lowest number of households (1,165) and population (4,810) in the district. The findings further revealed that, out of the 4 sub-counties in Kiryandongo district, Mutunda, and Kiryandongo had more females than males. To provide comparison, the total number of household for Census 2002 and total population projection for 2009 from the Census 2002 benchmark has been included.

HOUSEHOLD POPULATION BY AGE GROUP

UBOS 2014 reveal that, in all the sub counties, the children in the age group 6-17 years take on the highest percentages of 35 percent in the District and the highest concentration is to be found in Kiryandongo S/C (36%) with the least recorded in Mutunda S/C (34%). Age groups 18–30 years (youth) and infants (age group 0–5 years) follow with 22 percent overall. The adults 31–59 years are the third group (18%) where Mutunda/Kigumba S/Cs has the highest concentration at 18% while the least is 17 percent (Masindi Port and Kiryandongo S/Cs). The elderly (above 60 years) come last with 4%. The majority of people in Kiryandongo district are children representing a total of 57 percent for the whole district. Those aged 18 years and above represent 43 percent of Kiryandongo District population. Total population for Kiryandongo is 112,774.

MARITAL STATUS

The UBOS 2014 shows that, Kigumba sub-county registered the highest proportion of people who were never married (45.3%) and Masindi Port Sub County registered the lowest (36.5%) under this category. Among those who are now married, Masindi Port registered the highest proportion (50.7%) while Kiryandongo registered the lowest (43.4%). Masindi Port sub-county registered the highest proportion of persons that were married (12.9%) whereas Kigumba registered the lowest (9.9%).

OWNERSHIP OF LAND AND HOUSES

The Kiryandongo sub-county had the highest proportion of households owning land and houses (87% and 81% respectively) while Mutunda had the lowest proportion of households owning land (60.1%) and houses (85.3%). The highest proportion of households owning houses was instead in Masindi Port (92.4%). Kigumba had the highest proportion of households owning TVs (3.6%) and the lowest proportion was in Masindi Port (1.6%).

MAIN TYPE OF CONSTRUCTION MATERIALS

It shown that the highest proportion of households (69%) in Kiryandongo district use permanent materials as their construction material for walls, 68% use improved materials for roofs and 87% use natural materials for the floors as their construction materials. More households use permanent materials in the construction of walls in Kigumba S/C (73%) with the least reported in Masindi Port (45%). For roofing, people in Kiryandongo/Mutunda S/Cs use improved materials (72%) as compared to 60 percent in Kigumba S/C (the least). It is notable that 97% of households in Mutunda S/C use natural materials in the floor construction with the least reported in Kigumba S/C (79%).

SOURCES OF LIVELIHOODS

The majority of household members that were involved in agriculture was mainly from Mutunda (75.1%) sub-county while Masindi Port registered the least (45.6%) being engaged in agriculture. UBOS 2014 reports that, Mutunda sub-county had the highest percentage of people that were involved in trade (7.4%) and Masindi Port Sub-County had the least (1.1%). Manufacturing as a main economic activity was carried out in a very small scale with Masindi Port (1.3%) taking the highest proportion while the least was in Kigumba Subcounty (0.2%). Provision of Services as a main economic activity was mostly done in Masindi Port (16. 8%) and the least was in Kiryandongo (3.9%).

Other major activities carried out include livestock rearing and fishing. In particular, women engage in activities such as road-side groceries/vending, market vending, restaurants, hair care, and health care clinics. Men also engage in wholesale and retail merchandising, metal fabrication, carpentry work, motor vehicle repair workshops, taxi driving and *boda boda* (motorcycle and bicycle) for-hire transportation. A large percentage of the refugees (74%) are involved in economic activities, agriculture being the main activity at 50% and others being retail business and working as casual laborer to generate income.

AGRICULTURE

Kiryandongo has abundant natural resources including fertile land, water resources, able to support commercial agricultural production. Kiryandongo district has a land area of 3,624.1 km^2 which is

largely arable with adequate surface and subsurface water reserves which can be harnessed and utilized for commercial agriculture and livestock. The findings from UBOS 2014 showed that the households in Kiryandongo district participated mainly in the growing of four major crops namely; maize (67.2%), beans (43.8%), cassava (45.8%) and sweat potatoes (20.7%). The highest proportion of household that grow maize was registered in Mutunda sub-county with 92.6% and the lowest was in Masindi Port with 31.5%. While for beans and cassava still the highest was in Mutunda with 82.7% and 72.3% respectively and the lowest was still in Masindi Port (10.9% and 16.7% respectively). For sweet potatoes, Mutunda still registered the highest growth proportion of 34.7% with the least being Masindi T/C (0.7%).

Coffee as a main cash crop is less grown in the district (2.6%) with Masindi Port being with the highest proportion of households (6.3%) that grew it while Kigumba subcounty had the least proportion. The category of the main food crops that registered the lowest proportion of growth in the district were rice (0.9%), Irish potatoes (0.2%), sorghum (5.1%) and bananas (6.4%). Masindi Port was the sub-county that had the highest proportion of household that grew rice (2.1%) and the lowest was Mutunda SC (0.3%). Irish potatoes were mainly grown in Kigumba and Mutunda SCs at a smaller rate of 0.3% in the two sub counties and lowest grown in Kiryandongo SC (0.1%) and Masindi port didn't grow at all (0.0%). Sorghum was highest grown in Mutunda SC (10.4%) and least grown in Kigumba (0.8%). For banana, the highest growing sub-county was Masindi Port (12.2%) and least grown in Kigumba SC at 0.9 percent.

HEALTH, WATER AND SANITATION

The UBOS 2014 reports for Kiryandongo District Community Information System reveals that, of the persons that suffered from malaria, those below 5 years took up the higher percentage of 39%.Incidence of diarrhea among those aged above 5 years was least in Kiryandongo S/C (8%) and most in Masindi Port S/C (11%). As for those aged below 5 years, diarrhea affected more children in Masindi Port (18%) with the least incidence recorded in Kigumba SC (15%).

The predominant source of water for drinking comes from boreholes (62%) followed by unprotected springs (14%), followed by protected water springs (10%), and then river, lakes, ponds and streams (8%) follows. All other methods fall at just 2.5 percent and below. More households in Masindi Port use borehole water (91%) with the least being Kigumba S/C (51%). The predominant source of water for household use comes from boreholes (45%) followed by unprotected springs (16%) followed by rivers, lakes and springs plus protected springs (11%). All other methods fall at just 4% and below. Households in Masindi Port use boreholes more (53%) than the rest of the sub counties in Kiryandongo District.

EDUCATION

The highest education attained was categorized in 3 groups (primary, secondary and tertiary levels). Kigumba Sub County registered the highest population proportion of 1.9% and the lowest proportion under this category was in Masindi Port (0.2%). This result shows that by the time of the CIS exercise, most people in the district had stopped in primary and very few had gone beyond senior six.

SCHOOLING STATUS

Depicts the percentage distribution of schooling status by selected age groups at different administrative levels. Data collected was grouped into three age groups i.e. 6-12 years, 13-18 years and 19+. The schooling status was also grouped in three categories i.e. currently schooling, left school and never attended school. As for age group 19+, the biggest number of people who left school in both sub counties is about 68%. Findings also reveal that of the total population currently attending school; those under age group 13-18 take on the biggest percentage of above 68% in all the sub counties. Data was collected on the literacy level of all household members (aged 6 years and above) in Kiryandongo district and it was grouped into three age groups i.e. 10-12 years, 13-18 years and 19 years and above. It is observed that members who are 13–18 years are more literate (81%) than the rest of the other groups (65% and 40% respectively).

WATER AND SANITATION

The distribution of the households by the main water source for drinking shows, the predominant source of water for drinking comes from boreholes (62%) followed by unprotected springs (14%), followed by protected water springs (10%), and then river, lakes, ponds and streams (8%) follows. All other methods fall at just 2.5 percent and below. More households in Masindi Port use borehole water (91%) with the least being Kigumba S/C (51%). Households in Kiryandongo District travel between 0.5km to access water (40%). By and large, it is notable that, 7% of households in Kiryandongo district travel above 3km to access water. This means about 60% of households in the district travel beyond 0.5 km to access water.

The overall distribution of those with a toilet facility is 85% in Kiryandongo District with the highest concentration being in Kiryandongo and Kigumba S/Cs (86% and 89% respectively) and the lowest registered in Masindi Port (75%). Availability of hand washing facilities is highest in Kigumba S/C (50%) and less hand washing facilities are to be found in Mutunda S/C (27%). Overall, 42% of households in Kiryandongo district own a hand washing facility.

ENERGY

UBOS 2014 data shows that, 63% of the households in Kiryandongo district use *tadooba* as the main source of energy for lighting while 91% reported firewood as the main source of energy for cooking. Kiryandongo S/C leads in use of *tadooba* and firewood with 90% and 96% respectively. Kigumba S/C depicts least use of *tadooba* with 46%. It is notable that least use of firewood was reported in Masindi Port (88%). Electricity is available in Bweyale Town, the health center and at the base camp in the settlement but other parts of the settlement and surrounding sub-counties like Mutunda S/C do not have electricity. Fuelwood and charcoal are sourced from within the camp and in communities around. Refugees and host communities engage in charcoal burning which has led to massive cutting down of trees.

VULNERABILITY

This focused on children and is reported that, among all the sub counties in Kiryandongo District, 6% of the children are married. More working children are to be found in Mutunda Sub County (22%) as against 19% (the least) in Kigumba S/C. About 9% of children in 11 Kiryandongo District are out of school and Masindi Port has the biggest number (11%) among all sub counties with overall 9 percent of children out of school. Overall, about 0.1 percent of households are child headed households with Masindi Port reporting no case of child headed households.

3 POLICY AND LEGAL FRAMEWORK

This document will comply with both the World Bank safeguard policies and the relevant GoU legislation as summarized below. Where there is a difference between the local regulations and World Bank policies, the Project will aim to apply the more stringent requirements.

3.1 POLICY FRAMOWEWORK

3.1.1 THE NATIONAL ENVIRONMENT MANAGEMENT POLICY-NEMP, 1994

The key policy objective NEMP is enhancement of the health, quality of life and promotion of long-term, sustainable socio-economic development through sound environmental and natural resource management and use; and optimizing resource use. ***This is consistent with a rage of safeguard provisions such as World Bank OP 4.01 which requires Environmental Assessment to be conducted on project as well as IFC PS 1 which equally requires ESIA to be conducted on projects. On the basis of these, preparation of this ESMF is in compliance with all these safeguards requirements.***

3.1.2 NATIONAL WATER POLICY, 1999

The policy stipulates *inter alia:* the priority in water resources allocation will be the provision of water in adequate quantity and quality to meet domestic demands. ***This Project is planned to ensure provision of adequate household water needs for both the refugees and host communities which is at tandem with a number of such safeguards.***

3.1.3 THE NATIONAL LAND USE POLICY

The overall policy goal is to achieve sustainable and equitable socio-economic development through optimal land management and utilization in Uganda. ***The policy recognizes amongst others, the need for the protection and sustainable use of land resources through conducting environmental assessments and implementation of measures outlined in such assessment studies. This is consistent with World bank safeguards policy on Environment Assessment (OP 4.01).***

3.1.4 NATIONAL POLICY FOR THE CONSERVATION AND MANAGEMENT OF WETLAND RESOURCES, 1995

The Policy has established principles by which wetlands resources can be optimally used and their productivity maintained in the future and end existing unsustainable exploitative practices in wetlands. All proposed modifications and restorations on wetlands shall be subject to an ESIA, the result of which shall determine whether such restoration or modification shall proceed and if so to what extent. ***This ESMF has measures for controlling degradation of wetlands and controlling their siltation in line with Bank safeguards policy OP 4.04 Natural Habitat.***

3.1.5 THE NATIONAL HIV/AIDS POLICY, 2004

The policy provides the principles and a framework for a multi-sectoral response to HIV/AIDS in Ugandan's world of work. The policy applies to all current and prospective employees and workers, including applicants for work, within the public and private sectors. It also applies to all aspects of work, both formal and informal. ***The project will have to mainstream HIV/AIDS interventions into its plan, Projects and activities.***

3.1.6 THE NATIONAL CULTURAL POLICY, 2006

The National Culture Policy, 2006 complements, promotes, and strengthens the overall development goals of the country. Its specific objectives include amongst others, the need to promote and strengthen Uganda's diverse cultural identities and to conserve, protect, and promote Uganda's tangible and intangible cultural heritage**. *This ESMF outlines Chance Finds Procedures to ensure protection and conservation of any PCRs that will be encountered during project implementation.***

3.1.7 THE Occupational HEALTH AND SAFETY POLICY

This policy will be especially relevant for Occupational Health and Safety (OHS) of the workers and the public in the implementation of the project components. ***Its focus on safety and wellbeing of workers in work environment makes it consistent with IFC PS2 which concerns labor and working conditions as well as IFC PS 4 which also looks into issues of community health safety and security. These are all important considerations in the project implementation and operations.***

3.1.8 THE NATIONAL SANITATION POLICY FOR UGANDA, 1997

This Policy seeks to promote safe disposal of human excreta by any appropriate means, promote proper management of solid and effluent wastes and enhance the development and maintenance of safe water chain. It also seeks to promote behavior change regarding sanitation *amongst* ***others which is consistent with National Environment Act Cap 153 regarding abatement of pollution. Therefore, the project focus on WASH interventions especially with respect to pit latrine and water supply will all improve hygiene at household and institution level.***

3.2 NATIONAL LEGAL FRAMEWORK

3.2.1 THE CONSTITUTION OF THE REPUBLIC OF UGANDA, 1995

The right to a clean and healthy environment is enshrined in Article 39 of the Constitution of Uganda, 1995 as well as integration of people in the development process. In particular, the Constitution guarantees a range of basic human rights to the people of Uganda which include: gender balance and fair representation of marginalized groups in development process; protection of the aged; the right to development; access to clean and safe water; basic medical services; and access to education. ***These are some of the fundamental socio-economic aspects which are key for sustainability of mankind and the plan under the project to focus its interventions on classrooms construction, water supply, construction of pit latrines is all consistent with the constitutional obligations in the laws of Uganda.***

3.2.2 THE NATIONAL ENVIRONMENT ACT, CAP 153

Section 20 of this Act obliges every developer to undertake an environmental assessment for projects listed in the Third Schedule of the Act. *One glaring gap in this Law with reference to the World Bank and related safeguards is that, it does not provide project categories as well as clear processes and procedures for ESMF preparation, review and approval. However, this ESMF has been prepared based on World Bank safeguards and NEMA accepts to review and disclose being a form of*

Environmental Assessment. However, this gap is being addressed in the reviewed National Environment Act. Refer to Annex 11 for a detailed description of the Ugandan ESIA process.

3.2.3 THE LAND ACT, CAP 227

The Land Act vests land ownership in Uganda in the hands of Ugandans as such, GoU through OPM secures an MoU with land owners before settling refugees on any land. In addition, the Act in its Section 44 obliges owners/occupiers of land to use it in accordance with a range of other laws. ***The Act and the Constitution of the Republic of Uganda all vest land ownership in Uganda to the hands of Ugandans and guide matters of land acquisition for development project through compensation which has to be fair, timely and adequate in line with IFC PS 5, and World Bank OP 4.12 which addresses involuntary resettlement. However, though no land acquisition is envisaged in the project, alongside this ESMF a Resettlement Policy Framework (RPF) has been prepared as a tool to guide any possible land acquisition incase such arose. It also imposes the need to restore the land after extraction of construction materials.***

3.2.4 LAND ACQUISITION ACT, 1965

This Act makes provision for the procedures and methods of compulsory acquisition of land for public purposes whether for temporary or permanent use. The Act requires that adequate, fair and prompt compensation is paid before taking possession of land and property. ***These provisions are meant to ensure that the process of land acquisition is in compliance with existing laws and that the affected persons receive fair, timely, adequate compensation. Therefore, where land need for land take is anticipated, these provisions will guide the process of compensation amongst others in the Project.***

3.2.5 THE OCCUPATIONAL SAFETY AND HEALTH ACT, 2006

The Act provides for the prevention and protection of persons at all workplaces from injuries, diseases, death and damage to property. ***The key provision of this Act is safety and welfare of workers which is consistent with a range of safeguards policies such as ILO Core Labour Standards, IFC PS 2, 3 and 4. The ESMF provides for safety gear for workers during implementation of project activities especially for public works among other subprojects.***

3.2.6 THE EMPLOYMENT ACT, 2006

This Act spells out general principles regarding forced labor, discrimination in employment, sexual harassment and provisions to settle grievances. It further provides that, a child under the age of twelve years shall not be employed in any business, undertaking or workplace. ***No doubt, this law is consistent with a number of other laws employment subject such as: ILO Core Labor Standards, IFC PS 2 and 4 addressing labor and working condition and community health and safety and security. Therefore, project implementers will not engage any child workers at the project site at any one time during the project lifecycle.***

3.2.7 THE PENAL CODE AMENDMENT ACT 2007

It is an Act to establish a code of criminal law and with reference to this project, the aspect of interest is, **"Defilement of persons under eighteen years of age in which the Act provides that, a**ny person who attempts or performs sexual act with another person who is below the age of eighteen years commits an offence and is on conviction, liable to imprisonment not exceeding eighteen years or aggravated act, will be liable to suffer death. ***This is an issue in the refugee settlements in that, in South Sudan, the years of consent is 14 years as opposed to 18 years in Uganda. In this case, the Penal Code Act provisions are the ones observed and applied with respect to consent age. Therefore, workers on the project will be sensitized to avoid engaging in sexual relations with minors below 18 years.***

3.2.8 NATIONAL FORESTRY AND TREE PLANTING ACT, 2003

The National Forestry and Tree Planting Act 2003 is the main law that regulates and controls forest management in Uganda by ensuring forest conservation, sustainable use and enhancement of the productive capacity of forests, to provide for the promotion of tree planting and through the creation of forest reserves in which human activities are strictly controlled. ***Specifically, the Act will provide guidance for afforestation and other tree nursery subprojects under Project.***

3.2.9 HISTORICAL MONUMENT ACT, 1967

The Act provides for the preservation and protection of historical monuments and objects of archaeological, paleontological, ethnographical and traditional interest. Section 10(2) requires that any person who discovers any such object takes such measures as may be reasonable for its protection. ***This implies that the project will undertake the Chance Finds Procedures in addressing possible encounters of any archaeological resources during project implementation***.

3.3 WORLD BANK SAFEGUARD POLICIES AND REQUIREMENTS

The IWMDP is assigned an EA Category B given that significant adverse environmental and social impacts are not expected due to the nature of the proposed activities. Following the environmental and social screening of the proposed project activities, the anticipated negative impacts will be localized, site-specific and small to moderate in scale. The project is not anticipated to generate any potential large scale, significant and/or irreversible impacts. None of the project activities will be located in environmentally sensitive areas, and all the associated impacts can be mitigated with relatively standard mitigation measures.

Overall by their nature, location, scale & scope, including the environmental and social context where the subproject will be situated, IWMDP subprojects will individually have minimal adverse environmental and social impacts in their respective localities. Therefore, despite the several subprojects in combination, or in combination with other government or private sector activities, all project negative impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance. This therefore qualifies the project to be EA Category B.

The applicable World Bank environmental and social safeguard policies that will require provisions to meet their individual requirements are summarized as on Table 14:

Table 15: Summary on Bank Policies and how they relate to IWMDP

Yes √ or No X	**If applicable, how might it apply?**
[√]	Environmental Assessment (OP/BP/GP 4.01) The Environmental Assessment (EA) Safeguard is to ensure that projects are environmentally and socially sustainable and provide a basis for improved decision making. OP 4.01 evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The proposed project will largely generate positive impacts contributing to public health, economic growth, and environmental sustainability. OP 4.01 is triggered as the project may have potential negative environmental and social impacts through the construction and operational phases. Possible impacts during construction include; impacts on water bodies associated due to earthworks and wastewater generated from construction activities; emissions of particulate matter by earthworks and removal of vegetation cover; Occupational, Health, and Safety (OHS) risks; and social misdemeanor by workers. The impacts during construction phase will be temporary while works are carried out. During the operation phase, the potential risks include unpleasant odors and noise from the operation of sanitation facilities; inadequate sludge management and wastewater effluent discharges; possible impacts on surface and/or ground water due to leakages from and intrusion of storm water to the facilities (sewers, manholes, ponds, septic tanks); and impacts of water intake on environmental flows and aquatic ecosystems, including migratory fish species. The anticipated negative impacts will be localized, site-specific and small to moderate in scale. All project adverse impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance. For instance, the treated effluents from wastewater facilities (ponds and fecal sludge treatment facilities) will not generate significant impacts, if the facilities are operated and maintained according to design standards. With respect to AC, the environmental management plan will include management measures for the removal, packaging, transportation and disposal of existing asbestos waste. Works and equipment will be designed based on technical studies to ensure safe yield from groundwater and surface water resources. The water and sanitation facilities are relatively small. The largest interventions are in Gulu (pop. 300,000) with the construction of a new surface water supply system of 30,000 m3/day and Mbale (pop. 163.314) with the construction and rehabilitation of water supply works and sanitation facilities.

	The Project is classified as Category B because it will not generate any potential large scale, significant and/or irreversible impacts, it is not located in environmentally sensitive areas, and impacts can be mitigated with relatively standard mitigation measures. Safeguards instruments: Compliance will be ensured through diligent application of Environmental and Social Management Framework (ESMF) and site specific Environmental and Social Impact Assessments (ESIAs)/Environmental and Social Management Plans (ESMPs) during implementation. For subprojects (Mbale WSS and Busia WSS) that have complete detailed engineering designs, their specific ESIAs/ESMPs have already been reviewed and cleared by the Bank on July 7, 2017 However, the Busia ESIA will be updated following three key changes in the components of the system, namely; the Water Intake, the Water Treatment Plant (WTP) and the Fecal Sludge Treatment Facility (FSTF). For all other subprojects included under Components 1, 2 and 3, the MoWE has prepared this ESMF given that feasibility and detailed design studies have not been undertaken. The ESMF and site specific ESIAs/ESMPs (Mbale & Busia WSS) have been publicly consulted upon and shall be disclosed in-country and on the Bank's external website before appraisal. Because project activities are proposed in and around refugee hosting communities, the same ESMF guidance shall apply to sub-projects that will be undertaken in such areas. The Project will follow the WB- EHS Guidelines for Water and Sanitation.
[√]	Natural Habitats (OP/BP 4.04) Given the nature of the proposed project no significant conversion (loss) or degradation of natural habitats, whether directly (through construction) or indirectly (through human activities induced by the project) is anticipated through project activities. However, OP/BP 4.04 has been triggered as a precaution as the project will involve catchment management measures and some of the investments may involve afforestation, reforestation and improvement of watersheds. All project subprojects will include/encompass natural habitats assessment and mitigation under the given sub-project ESIA/ESMP to protect or preserve any natural habitats identified at risk of being affected. The project sub-component design will ensure that any discharge effluent from project implemented wastewater or fecal sludge treatment facilities will meet appropriate local effluent standards for treated wastewater/fecal sludge, prior to discharge into the natural environment. If a subproject can cause irreversible damages, it will be excluded.
[√]	Forests ((OP/BP 4.36) OP 4.36 is triggered due to potential project impacts on health and quality of forests, especially in the catchment areas where the project will support afforestation, reforestation and improvement of watersheds. Compliance will be ensured through the site specific ESIAs/ESMPs that shall ensure inclusion of forests assessment and mitigation.

[X]	Pest Management (OP 4.09) The project will not involve or support the purchase, manufacture or use of pesticides. The Project will not lead to increased/changed use of pesticides.
[√]	Physical Cultural Resources (OP 4.11) The policy is triggered due to the possibility of chance finding of physical cultural resources during construction. Any potential physical cultural resources will be addressed by incorporating reporting and handling procedures as part of site specific ESIA and dealt with in the context of the ESMF. The ESMF has provided a generic Chance Finds Procedure that will guide handling accidental encounter of archaeological resources.
[√]	Involuntary Resettlement (OP/BP 4.12) The purpose of this policy is to avoid or minimize involuntary resettlement and, where this is not feasible, assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. The key objectives of this operational policy are to: a. Avoid or minimize involuntary resettlement scenarios, where possible and examine all viable alternative project designs; b. Support affected persons in restoring/improving their former living standards, income generation and production capacities, or at least in restoring them; c. Encourage community involvement in planning and implementing resettlement actions and provide assistance to affected people regardless of the legality of land tenure. The policy does not only cover physical displacement, but also any loss of land or other assets associated to the proposed actions resulting in: a. relocation or loss of shelter; b. loss of assets or access to assets; and loss of income sources or means of livelihood, whether or not the affected person is to reallocate to a new area. The policy is therefore triggered because of the potential negative social impacts that might result from the need for land acquisition and/or the loss of access to economic assets and livelihoods due to integrated WRM and WSS activities. The Borrower will prepare Resettlement Action Plans (RAPs or ARAPs) for projects with detailed designs and Resettlement Policy Framework for projects without specific investment locations. Both instruments will be disclosed in country and on the World Bank website by project's appraisal. For sub-projects covered under the RPF, these shall be subjected to social screening and where necessary their RAPs or ARAPs shall be prepared and implemented before commencement of implementation of any such activities.

[X]	Indigenous Peoples (OP 4.10) After a review of the proposed subprojects, it was concluded that the proposed interventions will not be undertaken in areas occupied by indigenous people (Batwa, Benets and Ike). The project conducted a screening in all participating districts and confirmed that there are no IPs in those districts. .
[V]	Safety of Dams (OP/BP 4.37) OP 4.37 is triggered as the project will finance rehabilitation and construction of small dams (i.e. dams smaller than 15m, as per OP 4.37) identified through the catchment planning process under component 3, including small dams to prevent soil erosion and for flood protection. The Project does not support the construction or rehabilitation of large dams and subprojects do not include structures that will rely on the performance of an existing dam or dam under construction (DUC). The latter conclusion also applies to the Gulu Water Supply System, which was evaluated carefully given that the intake structure would be located in the backwater of the Karuma dam (a DUC). The abstraction point of the intake would be close to the river bed and below the minimum reservoir operational level. The proposed intake is a submerged structure, which would be designed to include protective features to pipes, valves and associated electromechanical installations. Failure of the dam will not affect the intake operation given that it is located upstream of the dam and the Nile river environmental flow of 100 m3/s is more than sufficient to maintain constant raw water flow into the intake wet well (design capacity 0.34 m3/s). Important to mention that the intake and water treatment plant would be financed by KfW and the Bank would financed associated transmission and distribution pipelines.
[X]	Projects in Disputed Areas (OP/BP/GP 7.60) OP 7.60 is not triggered as there are no known disputed areas in the project districts. If any, the project will not support any activities in disputed areas.
[V]	Projects on International Waterways (OP/BP/GP 7.50) The policy is triggered since some of the activities encompass international waters including the River Nile. In accordance with OP 7.50, on January 15, 2018, the Nile Basin Initiative notified riparian states on behalf of GoU and requested comments no later than March 11, 2018. No comments were received by the due date and a memorandum to the Regional Vice President summarizing the results of Riparian Notification was processed by the Bank task team. It is not anticipated that the project will cause appreciable harm to any of the riparian through water deprivation, pollution or otherwise. Neither it is anticipated that the implementation of project activities will adversely change the overall quantity or quality of water flowing to or from any of the riparian of the concerned international waterways. Note that specific ESIAs for water supply systems drawing water from Nile

	River will assess and documents impacts of water abstraction on the water quantify and quality of the Nile River.

3.4 ENVIRONMENTAL HEALTH AND SAFETY GUIDELINES SPECIFIC TO WATER SUPPLY AND SANITATION PROJECTS

The World Bank Group (WBG) Environmental Health and Safety (EHS) General Guidelines are recommended to be used by the project. This section provides an overview on how the general approach to be taken with regards to the management of EHS issues at the sub-project or project level.

The WBG EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). They shall be referred to and used to guide EHS issues in specific industry sectors, and they should be used together with the safeguard policies. These shall govern both workers' (occupational) safety and public safety. However, the application of the EHS Guidelines to existing facilities that will be rehabilitated/expanded may involve the establishment of site-specific targets, with an appropriate timetable for achieving them. The applicability of the EHS Guidelines shall be tailored to the hazards and risks established for each project based on the results of an environmental assessment in which site-specific factors are considered.

Effective management of environmental, health, and safety (EHS) issues entails the inclusion of EHS considerations into corporate- and facility-level business processes through the following steps:

a. Identifying project hazards and associated risks as early as possible;
b. Involving EHS professionals, who have the experience, competence, and training necessary to assess and manage EHS impacts and risks, and carry out specialized environmental management functions;
c. Understand the likelihood and magnitude of the risks;
d. Prioritizing risk management strategies with the objective of achieving an overall reduction of risk to human health and the environment;
e. Favoring strategies that eliminate the cause of the hazard at its source;
f. Incorporating engineering and management controls to reduce or minimize the possibility and magnitude of undesired consequences;
g. Preparing workers and nearby communities to respond to accidents;
h. Improving EHS performance through a combination of ongoing monitoring of facility performance and effective accountability.

The following shall be considered when assessing the potential risks related to health, safety and security:

a. Infrastructure and Equipment Safety;
b. Hazardous Materials Safety;
c. Environmental and Natural Resource Issues (such as floods/ landslides etc.);

d. Community safety and exposure to project related risks;
e. Emergency Preparedness and Response.

The project proponent shall assess the potential risks and impacts from project activities and inform affected local population of significant potential hazards in a timely manner. It is also the responsibility of the project proponent to support and work with the project affected population and the local government structures to respond to any arising emergency.

3.5 WORLD BANK POLICY ON DISCLOSURE OF INFORMATION

The World Bank, through its Disclosure Policy BP 17.50, requires that all safeguard documents be disclosed in the respective countries as well as at the Bank's Info shop or Website prior to appraisal or for Fast Tracking Initiative prior to Signing of the Grant Agreement. The Bank recognizes the right to information, and has information disclosure policies which generally contain the following elements: principles of disclosure; exceptions to disclosure; routine disclosure; and request driven disclosure. Disclosure of documents (including a summary of the project, and a summary of Environmental Assessment) should be in the local language, at a public place accessible to project-affected groups, local non-governmental organizations and other interested persons. In-country disclosure of information is the responsibility of the borrower, in this case of the project proponent through the steering committee or the individual institutions that will be implementing a project, in this case the MOWE and NWSC. Disclosure at *InfoShop* is the responsibility of the World Bank.

Documents that need to be disclosed include:

a. Integrated Safeguards Data Sheet;
b. ESMF and RPF;
c. All Safeguard mitigation plans:
    i. Environmental and Social Impact Assessments, and/or Environmental and Social Management Plans; and
    ii. Resettlement Action Plan.

All documents should be made available to stakeholders well in advance of consultations and all public consultations should be completed and draft or final documents should be disclosed prior to the project appraisal. In addition, all final documents, including the results of the consultations should be disclosed for the record.

For the present ESMF document, information disclosure was initiated with the stakeholder consultations and public meetings held in selected project sites and Ministries or Agencies. The meetings provided an opportunity for stakeholders to provide comments and useful inputs to be taken into consideration when planning and implementing the proposed project. As the EMSF has now been drafted, it is proposed that the disclosure process be through continued interaction with stakeholders using contacts gathered during public meetings. A pubic advert shall be sent to most widely distributed and read newspapers in the country, to inform stakeholders of the availability of the ESMF document for review and comments. The MOWE shall ensure the availability of the full ESMF in their Public Library and Website, including websites and offices of NWSC, and participating Districts, where the public can have access and provide any comments.

INTERNATIONAL CONVENTIONS AND TREATIES

In 1998, Parliament enacted the Foreign Treaties and Relations Act which provides for entering into international, regional agreements and conventions. Uganda has entered into several international environmental conventions and agreements:

a. Convention on Wetlands of International Importance as Waterfowl Habitat-Ramsar Convention (1971)
b. Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)
c. Convention on the International Trade in Endangered Species of Wild Fauna and Flora CITES (1973)
d. Convention on the Conservation of Migratory Species of Wild Animals (1979)
e. Vienna Convention for the Protection of the Ozone Layer (1985)
f. Montreal Protocol on Substances that Deplete the Ozone Layer (1987)
g. Convention Concerning Safety in the Use of Asbestos (1986)

3.6 MAINSTREAMING SAFEGUARDS POLICY REQUIREMENTS INTO IMPLEMENTATION ARRANGEMENTS

In addition to the various mechanisms of achieving compliance and meeting the individual policy requirements stated above, the Bank has put in place a set of Environmental, Social, Health and Safety (ESHS) Enhancements for Standard Procurement Documents (SPDs) and Standard Bidding Documents (SBDs) which shall be applicable to all new works contracts for which the relevant SBD/SPD are used. The project shall follow this guidance as follows:

1. The bid documents for works will integrate environmental and social safeguards requirements in their Bills of Quantities (BoQs). Once resources allocated for safeguards, it will be easy to monitor their implementation in the project;
2. Employer is required to set out clearly the minimum expectations of ESHS performance from the outset, to ensure that all Bidders/Proposers are aware of the ESHS requirements;
3. The Contractors shall submit as part of their Bid/Proposal an ESHS Code of Conduct that will apply to their employees and sub-contractors, and details of how it will be enforced. The suitability of the Code of Conduct can be assessed and discussed as part of the Bid/Proposal evaluation and negotiations;
4. The successful Bidder/Proposer is required to implement the agreed Code of Conduct upon contract award;
5. The Contractors shall submit, as part of their Bid/Proposal, ESHS Management Strategies and Implementation Plans required to manage the key ESHS risks of the project, usually referred to as Contractor's ESMP;
6. The suitability of these strategies and plans can be assessed as part of the Bid/Proposal evaluation, and discussed during pre-contract discussions, as appropriate. These strategies and plans will become part of the Contractor's Environmental and Social Management Plan (C-ESMP);
7. Particular Conditions of Contract now include provisions relating to the (C-ESMP), e.g.:
    1. a requirement that the Contractor shall not commence any Works unless the Engineer is satisfied that appropriate measures are in place to address ESHS risks and impacts;
    2. at a minimum, the Contractor shall apply the plans and ESHS Code of Conduct, submitted as part of the Bid/Proposal, from contract award onwards.

a. Provide an ESHS Performance Security (the sum of the two "demand" bank guarantees, normally not to exceed 10% of the contract price). The ESHS performance security is in the form of a "demand" bank guarantee." The application of this provision is at the Borrower's discretion. It is recommended for contracts where there is significant ESHS risks as advised by Social/Environmental specialist/s;
b. Demonstrate that they have suitably qualified ESHS specialists among their Key Personnel. Key Personnel must be named in the Bid/Proposal, and in the contract. The quality of the proposed Key Personnel (including ESHS specialists) will be assessed during the evaluation of Bids/Proposals. The Contractor shall require the Employer's consent to substitute or replace any Key Personnel;
c. The Engineer may require the removal of Personnel if they undertake behavior which breaches the ESHS Code of Conduct, e.g. spreading communicable diseases, sexual harassment, gender-based violence, illicit activity, or crime;
d. Contracts now contain specific ESHS reporting requirements. These relate to:
e. ESHS incidents requiring immediate notification;
f. ESHS metrics in regular progress reports.

3.7 GAP ANALYSIS BETWEEN THE KEY WORLD BANK SAFEGUARD POLICIES AND GOVERNMENT OF UGANDA'S ENVIRONMENTAL REQUIREMENTS

It is worth noting that environmental management in Uganda has been largely supported by the World Bank, right from the development of the National Environment Management Policy in 1994, the National Environment Act in 1995 and the accompanying Regulations. Owing to this, most of the envitronmental requirements are largely influenced by the World Bank's Environmental and Social Safeguard Policies. Most of the provisions of OP 4.01 were adopted and as such the screening and assessment methodology is virtually the same as seen in the Uganda's EIA Guidelines of 1997. However, some of the differences include the following: first and foremost, the Ugandan Laws do not provide for Framework Approach (ESMF and RPF) but rather only specific instruments (ESIA, ESMP, Environmental Audits). This ESMF prepared for IWMDP in line with OP 4.01 will guide the preparation of the specific instruments. Independent review is not specifically provided for under EIA Regulations of Uganda and as a result the review of ESIAs is commonly reviewed by government agencies, whereas the OP 4.01 provides for Panel of Experts to for Category A type projects. Under OP 4.04 Natural Resources, Uganda lacks Regulations to implement the National Forestry and Tree Planting Act and the Wildlife Act. Therefore, OP 4.04 and OP 4.36 on Forests shall be used to assess any impacts on natural habitats. On OP 4.11 Physical Cultural Resources, the Ugandan legal framework is limited in scope. For example, it does not cover certain aspects such as the intangible heritage. These are the salient environmental gaps between the Environmental Safeguard Policies and the Government of Uganda Environmental requirements. Where gaps exist, the World Bank Safeguard Policies shall take precedence especially on matters of preparation, review and approval of ESMF which is not explicitly provided in the National Environment Act Cap 135. The other area is under OP 4.12 (Involuntary Resettlement) whereby Uganda's Land Act legal framework is restricted to fair, adequate and prompt compensation (cash), while the World Bank policy requires the need to provide alternative land, resettling the Project Affected Persons (PAPs) to levels or standards of livelihood similar to or better than before compensation. The Ugandan legislation also does not provide for restoration of livelihoods, resettlement assistance and compensation at replacement

value. Under circumstances like these regarding short-comings in the Uganda law on compensation and ESMF process, the provisions of OP 4.12 shall be applied.

The project will also apply the World Bank Industry Specific Water and Sanitation (and Waste Management Facilities) EHS Guidelines. In addition to this, the Bank has put in place a set of Environmental, Social, Health and Safety (ESHS) Enhancements for Standard Procurement Documents (SPDs) and Standard Bidding Documents (SBDs) which shall be applicable for all new works contracts for which the relevant SBD/SPD are used.

The existing gaps are summarized in the table below: **Table 15: Summary of Gap Analysis between Uganda and World Bank Safeguards**

World Bank's Safeguard Policies	**Uganda's Legal and Regulatory Framework**	**Gaps identified in Uganda legal and regulatory framework**
Environmental Assessment (OP 4.01)	• National Environment Management Policy, 2014 • National Environment Act Cap 153 • EIA Regulations, 1998	• Independent review is not specifically provided for under EIA Regulations of Uganda and as a result, the review of EIAs is commonly reviewed by government agencies • In the EIA review process, there is no specific legal/regulatory framework that caters for examination of the quality of the EIA reports. Only conditions of approval/reasons for non-approval of EIAs are provided by NEMA; • There are no administrative mechanisms for appealing a decision taken on an EIA;
There is an on-going process to amend the National Environment Act and EIA Regulations, and Strategic Environmental Assessment Guidelines and Uganda Association for Impact Assessment Bill have been drafted. **The proposed amendments in the National Environment Act cover the following:** • Technical committee on environmental assessment; • Strategic environment assessment; • Basis for environmental impact assessment and environmental risk assessment; • Projects for which project briefs are required; • Measures on climate change; and • Establishment and composition of the environment tribunal.		

Natural Habitats (OP 4.04) and Forests (OP 4.36)	• The Constitution 1995 as amended; • the National Environment Act Cap 153; • The National Forestry and Tree Planting Act, 2003; • The Uganda Wildlife Act Cap 200; • The Land Act Cap 227; • The Fish Act Cap 197; • The Plant Protection Act Cap 31;	There are general gaps which include lack of Regulations to implement the National Forestry and Tree Planting Act and the Wildlife Act.
Physical Cultural Resources (OP 4.11)	• The Constitution • The National Environment Act, Cap 153 • The Historical Monuments Act, Cap 46 • The Institution of Traditional or Cultural Leaders Act, 2011	• The legal framework is limited in scope. For example, it does not cover certain aspects such as the intangible heritage • There is no strong institution to regulate and manage heritage resources; • The sites and monuments are not adequately maintained, documented and in addition, some of the antiquities are not collected • There is limited enforcement of the legal framework related to Physical Cultural Resources in Uganda because most developers and government officials do not understand the importance of conserving physical cultural resources.
The current Historical Monuments Act is being reviewed to provide for an efficient law for the protection of the cultural resources of the country. The new law shall be inclusive of all aspects of culture, the tangible, intangible heritage of the country. The revised Environmental Impact Assessment Regulations provide that risk assessment should include risks to cultural heritage.		

Involuntary Resettlement OP 4,12 (Adopted from the IWMDP-RPF)

TABLE 16: Gaps between World Bank and Ugandan legislation applicable to each impact

Category of PAPs/ Type of Lost Assets / Impact	Ugandan Law	OP 4.12	Gap Analysis	Provisions for this RAP
Land Owners	The Constitution of Uganda, 1995 recognizes four distinct land tenure systems, Customary tenure, Freehold tenure, Leasehold tenure and *Mailo* land tenure. Land is valued at open market value and a 15% to 30% disturbance allowance must be paid if six months or less notice is given to the owner. Cash compensation is the recommended option.	World Bank Policy recognises the rights of those affected people: • Who have formal legal rights to the land or assets they occupy or use • Who do not have formal legal rights to land or assets, but have a claim to land that is recognized or recognizable under national law • Who have no recognizable legal right or claim to the land or assets they occupy or use. Compensation of lost assets at full replacement costs. Cash compensation is recommended where there are	The Ugandan law does not compensate those without legal right or claim to the land. WB OP 4.12 does not consider disturbance allowance. Uganda laws and the WB O.P 4.12 are consistent in compensation at full replacement cost and cash compensation.	Cash compensation at replacement value (based on market value + 15% disturbance allowance). All forms of tenancy based on formal or informal rights/ agreements between the land owner and tenant

Category of PAPs/ Type of Lost Assets / Impact	Ugandan Law	OP 4.12	Gap Analysis	Provisions for this RAP
		active land markets and livelihoods are not land based.		
Land Squatters / Land Tenants	Leasehold tenure is created either by contract or by operation of the law. The landlord grants the tenants or lease exclusive possession of the land, usually for a period defined and in return for a rent. The tenant has security of tenure and a proprietary interest in the land. Cash compensation is based upon market value of land and disturbance allowance (15-30%). Entitled to compensation based upon the amount of rights they hold upon land.	Must be compensated for all losses, whatever the legal recognition of their occupancy. But non-title holders will not be compensated for land.	The Ugandan law does not compensate those without legal right or claim to the land or	All forms of tenancy based on formal or informal rights/ agreements between the land owner and tenants + 15% disturbance allowance. Land squatters will be compensated for loss of assets at replacement value
Owners of non-permanent buildings	Cash compensation based upon rates per m^2 established at District level, disturbance allowance (15% or 30%).	Recommends in-kind compensation or cash compensation at full replacement cost.	O.P 4.12 does not provide for the disturbance allowance. Ugandan law does not provide for resettlement assistance.	District compensation rates + 15% disturbance allowance. Cash compensation

Category of PAPs/ Type of Lost Assets / Impact	Ugandan Law	OP 4.12	Gap Analysis	Provisions for this RAP
		Recommends resettlement assistance.		
Owners of permanent buildings.	Valuation based on replacement value and guidance from CGV & disturbance allowance (15% or 30%).	Compensation at full replacement cost.	The Ugandan laws are consistent with O.P 4.12 in regard to replacement cost. O.P 4.12 does not provide for the disturbance allowance.	Cash Compensation at replacement value + 15% disturbance allowance.
Perennial Crops	Cash compensation based upon rates per m^2/bush/tree/plant established at District Level and disturbance allowance (15% or 30%).	Compensation at full replacement cost. Income restoration.	O.P 4.12 does not provide for the disturbance allowance.	Cash compensation using Arua and Yumbe District rates + disturbance allowance
Seasonal crops	No compensation. 3-6 months' notice given to harvest crops.	No specific provision		No compensation. Expected to be harvested. In the absence of notice, will be compensated for the crop that could not be harvested.
Loss of income	No specific provision	Livelihoods and living standards are to be	The Ugandan legislation does not	In the context of this project,

Category of PAPs/ Type of Lost Assets / Impact	Ugandan Law	OP 4.12	Gap Analysis	Provisions for this RAP
		restored in real terms to pre-displacement levels or better	provide for restoration of livelihoods.	practical livelihood restoration measures have been proposed.
Vulnerable groups	The 1995 Uganda Constitution stipulates that: "the State shall take affirmative action in favour of groups marginalised on the basis of gender, age, disability or any other reason […] for the purpose of redressing imbalances which exist against them". This regulation is not fully described in the context of resettlement and land acquisition.	Particular attention should be paid to the needs of vulnerable groups among those displaced such as those below the poverty line, landless, elderly; women and children and indigenous peoples and ethnic minorities.	Both the Ugandan Constitution and WB OP 4.12 favour vulnerable groups. However, the Ugandan law, vulnerable groups are not fully described in the context of resettlement and land acquisition.	Special attention will be paid to vulnerable persons affected. And compensated accordingly.
Relocation and Resettlement	Both the Constitution, 1995 and The Land Act, 1998 give the government and local authorities, power to compulsorily acquire land. The Constitution states that "no person shall be compulsorily deprived of property or any	Avoid or minimize involuntary resettlement and, where this is not feasible, assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-	There is no requirement under the Ugandan law to minimize land acquisition.	Measures to minimise involuntary resettlement have been considered as shown in Section 5. 10 of this RPF report.

Category of PAPs/ Type of Lost Assets / Impact	Ugandan Law	OP 4.12	Gap Analysis	Provisions for this RAP
	interests in or any right over property of any description except" if the taking of the land is necessary "for public use or in the interest of defence, public safety, public order, public morality or public health."	displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.		

4 PUBLIC CONSULTATIONS

4.1 APPROACH TO THE CONSULTATIONS

In order to ensure that key interests of the public, at various levels of governance, are addressed and incorporated into the design and implementation of the IWMDP safeguard tools, stakeholder consultations were carried out as part of the ESMF and RPF preparation process.

The Consultants together with MOWE conducted rapid stakeholder consultations at various levels of governance to solicit information on the implementation of IWMDP subprojects. This was undertaken between January 15 to 19, 2018 for the following stakeholders (further detailed in Table 6.1):

a. MOWE & NWSC: to provide clarity and available information on the planned sub-projects, implementation experience of WMDP and safeguards capacity needs/gaps;
b. National level consultations with relevant Agencies: NEMA, NFA, UWA, MAAIF, MLHUD, UNHCR and UWASNET (Water NGO rep); aimed at identifying their institutional and sector requirements in relation to the proposed project, both during planning and implementation;
c. Local Government level (Districts and Urban Councils/ Municipalities): Arua District and Municipality, Bushenyi Municipality, Katwe-Kabatooro, Koboko, to tease out the WMDP implementation lessons for Water Supply and Sanitation projects, Adjumani, Moyo and Arua to tease-out refugee host communities aspects that need to be taken into consideration, Gulu Municipality and associated small towns and rural growth centers (Kamdini, Minakulu, Bobi, Palenga, Barogal) to tease out aspects associated with water supply and sanitation management and Kyegegwa-Mpara-Ruyonza to tease out aspects of Gravity Flow Schemes and CMPs.

4.2 METHODOLOGY AND IDENTIFICATION OF STAKEHOLDERS

Stakeholder consultations were interactive in nature and targeted at different levels: National, district, municipal council, sub-county and communities and included the relevant representatives in each, as illustrated in Table 17.

Table 10: Key stakeholder groups and representatives

Level	Representatives
District	Ministries, Agencies, NGO Chief Administrative Officer (CAO) Water Management Zonal Officials (WMZO) District Chairperson (LCV) District Technical Planning Committee DTPC (comprises of all sectors at district level) Political Wing: District Secretary for Environment, Production, Health and Works.
Municipal Council	Municipal Technical Planning Committee (MTPC) Municipal Committees on Water Sanitation and Hygiene Political Wing
Sub-county	Sub-county Chief Sub-county Chairperson (LC III) Sub-county Technical Planning Committee

Level	Representatives
Communities	Rural settings Urban setting

Consultations were undertaken using key informant interviews and focus group discussions. Questionnaires were developed to guide the discussions and community meetings were held at the village level. The questionnaires and discussions aimed to enlist feedback from stakeholders on the following:

a. Issues that can be addressed through changes in project scope and design, and reflected in the basic documentation such as the Project Appraisal Document, ESMF and RPF;
b. Issues that can be addressed during project implementation;
c. Issues to do with Local Government and other stakeholders' capacity to manage IWMDP investments and their related environmental and social impacts;
d. Issues that are beyond the scope of the project and are better addressed through alternative projects, programs or initiatives; and
e. Issues that cannot be addressed by the project due to technical, jurisdictional or excessive cost-associated reasons.

A list of the interviewees is provided as Annex A.

4.2.1 SUMMARY OF CONSULTATION FINDINGS

The consultations undertaken by the MOWE were elaborate and have been summarized in this section to highlight what is most applicable to the implementation and success of the ESMF and RPF and to achieving the goals of the IWMDP.

Based on the consultation findings, the IWMDP is supported by stakeholders especially where project investments will have a positive impact on improving social and public welfare and addressing environmental concerns, primarily those related to wetland degradation, pollution of water resources and water shortage. Social concerns highlighted in the consultations related to displacement of households, land availability and ownership, land conflict, destruction of cultural sites, and employment related to labour camps. Resettlement is typically addressed during formulation of the sub-county development plans as part of environmental and social screening process and impact assessment.

A consistent concern across the districts is the need to address gaps and build capacity within the district, municipal councils and sub-counties to improve environmental management and ultimately support the development and implementation of water management projects. These concerns will be addressed in the IWMDP through the various training and capacity building initiatives proposed under Component 4 which are budgeted for under the ESMF.

A summary of the key issues identified through questionnaires and meetings with stakeholders are presented in Table 18.

Table 11: Findings of consultations for the 8 Districts within the WMDP targeted WMZs

District	Key Issues and Concerns Raised by Stakeholders
Lira	**Environmental screening and management** **A.** The District has a process in place for environmental screening of projects. EIAs and EMPs are prepared where necessary and the proposed mitigation measures are then incorporated into the Bill of Quantities

District	Key Issues and Concerns Raised by Stakeholders
	(BoQ) of specific projects. Monitoring checklists are prepared in line with the mitigations measures put in the BoQ. **B.** Monitoring is done by sub-county stakeholder / technical committees and the district authorities. **C.** The District reportedly does the ESIAs for all the projects within the District Development Plan. Certificates are generally obtained prior to the project commencements; however, the DTPC also acknowledged some inconsistencies where certificates were obtained after the commencements of the projects and sometimes not at all. These were reported to be common with projects which influenced by politicians and other partnership projects. **Resettlement process** Resettlement and compensation issues/action plan are incorporated into the sub-county development plans. The steps taken to handle the issues follow a systematic approach of: involving the inspection and assessment of the affected properties or households, valuation of the properties using local rates prepared and approved by the district; and valuation reports prepared and forwarded to the central governments who prepared compensation for the affected communities. **Capacity gaps and training needs** **A.** As mentioned by the DTPC, the training needs/gaps for municipal council officers include the following: general induction on the roles and responsibilities of the committee as new councils are constantly voted in and out on a regular four-year election period. **B.** Other areas need would involve areas like project management, monitoring, evaluation and reporting; project operational procedures and guidelines as required by Ministry of Local Government. **C.** Finally, sensitization on the emerging issues such climate change variability and its implication on water and environment sector. **Key environmental concerns** **A.** Abandoned borrow pits which accumulate stagnant water and thus form breeding sites for mosquitoes. **B.** Loss of wetland vegetation and interference with stream hydrological cycle in case of dam construction and vegetation clearance during site clearance. **C.** Waste accumulation from excavations and drill sites of which some could be hazardous. **D.** Flooding of the area in case of dam construction. **Key social concerns**

District	Key Issues and Concerns Raised by Stakeholders
	Concerns regarding natural disasters **A.** Flooding from the construction of dams **B.** Displacement of households **C.** Conflicts over water resource use among the communities **D.** Effects of drought
Mbale	**Environmental screening and management** **A.** Incorporation of environmental safeguards in projects is done during the planning stages of the project with support from the District Natural Resources /Environment Officer, who provide technical advice to sectors. It is at this stage that issues requiring mitigation are identified. Environmental issues are included in the Bills of Quantities (BoQs) to ensure that at the time of implementation the issues are captured. **B.** The District Natural Resources /Environment Officer monitors implementation of the project regularly to ensure that negative environment impacts are mitigated. However, due to limited funding, the District Environment Office to relies on other sectors to do its work and writes reports. **Resettlement process** **A.** It was suggested that most of the projects in the district are demand driven and therefore the communities provide land for the projects. In cases where some few individuals felt aggrieved, the local communities, sub-counties, or local politicians raised funds and communities are compensated at that level to enable the projects to proceed, without necessarily involving the district. This is common where access roads, schools, boreholes and wells are constructed. **B.** The population in the district is one of the highest in the country, 648 people per square kilometer, so where it involves massive resettlement, the district is incapable of implementing due to lack of land to resettle the people. The district relies on the Office of the Prime Minister to deal with resettlement. **Capacity gaps and training needs** **A.** The District Natural Resources Office does not have enough capacity to deal with issues of land acquisition because there is no land value at the district. The district also lacks capacity to review progress reports on implementation of resettlement action plans. Although the district has personnel, there is need for more training and facilitation for them to effectively deal with issues of resettlement. The District Natural Resources Office also lacks field equipment such as vehicles. b. The district has environment officers and community development officers who can monitor compliance to environment and social issues but the environment office does not have adequate facilitation to monitor compliance. The Councilors who are also involved in the monitoring do not have adequate knowledge to carry out compliance monitoring.

District	Key Issues and Concerns Raised by Stakeholders
	c. Lack of capacity greatly affects compliance because the district does not have resources for effectively monitoring environment and social safeguards for the project. Lack of funds for compensation of people affected is also a big problem. The district can only talk to affected communities to allow the project to continue without compensating them for displacement or loss of land or crops.
Butaleja	**Environmental screening and management** a. The district does not consult NEMA when it carries out its work but does environmental screening. The social issues dealt with by the sub-county include awareness on HIV/ AIDs. Billboards on HIV/AIDs are displayed. b. The sub-county handles most projects which are minor and do not need full EIAs. Sub-counties prepare environment management plans for compliance. c. Sub-counties implement projects of low impacts that do not require strict environmental assessment. Therefore, no certificate, permits licenses are issued for them. The sub-county does not pay for permits for its projects. The district issues local permits for small projects.
Kumi	**Capacity gaps and training needs** a. Kumi district has capacity needs including filling up the existing positions and training staff to deal with the new water supply systems. There is need for equipment such as computers and vehicles for supervision and monitoring the performance of the new water system. Kumi Town Council also has limited office accommodation. b. The likely challenges associated with is project include compensation costs for people who are likely to be displaced, resistance from the community whose land might be required for the project at abstraction points and location of reservoirs. Ensuring sustainability of the project, where the water catchments have been degraded is also a challenge.
Ngora	**Key environmental and social concerns** a. Diseases such as bilharzias, typhoid and malaria were cited as some of the problems associated with water sources in Agu. b. Safe water sources such as boreholes and protected springs are not available in Agu, which is why people consume stream water. c. Poor sanitation and hygiene was also cited as a problem due to lack of water. d. The community also experiences high prevalence of malaria because of the water bodies near the village. e. Women complain of walking long distances to collect water.
KaMoWEnge	**Environmental screening and management** a. Only environmental safeguards are incorporated in district planning. No monitoring data.

District	Key Issues and Concerns Raised by Stakeholders
	b. Monitoring is supposed to be done by the District Environment Officer but is not facilitated. **Capacity gaps and training needs** a. Lack of information b. Due to inadequate funding at the district, training of these committees is not a priority c. Training technical staff in water management
Mukono	**Key environmental and social concerns** a. Dealing with minor environment impacts such as siltation b. Drying up of water sources c. Wetland abuse/degradation in the catchment area is a biggest challenge because this affects the water sources and the regulating function of wetlands specifically recharge, discharge and purification; d. Social issues include – land availability, ownership, and resettlement. **Environmental screening and management** Current process involves: a. Screening of the projects with full participation of the users b. All projects at district and sub county levels must be screened for environment issues to ensure that mitigations are integrated, including the costs in the BoQs; c. Instead of EIAs, rapid assessments are done for projects with less significant impacts; d. Water committees put in place to ensure operation and maintenance is observed; e. Community Development Officers sensitize the community on best practices; f. Bye-laws to guide use and management have been in put in place; g. The Environment officer monitors compliance to these requirements; h. Two percent is budgeted at the district for monitoring, but this is insufficient. **Capacity gaps and training needs** a. Community participation to ensure interests is catered for. b. Creation of Village Water User Committees, whose main tasks include – managing and protecting water sources, water quality, regulating access and but ensure transparent accountability to the users.
Nakasogola	**Key environmental and social concerns** a. Environmental problems include: siltation, poor and lack of catchment management, overstocking, over grazing and soil compaction. b. Land ownership and access issues sometimes arise.

District	Key Issues and Concerns Raised by Stakeholders
	c. In many instances communities donate land for water projects. In others Government either uses public land or purchases the land. d. Social problems include: diseases, conflict over land, and ownership rights. **Environmental screening and management** a. EIAs are being under taken to ensure the needs of the community are addressed. b. Resettlement programs are also an undertaken and this is part of the framework of the RAP. There however remains a challenge in implementing the Resettlement Plan where people have settled in a Forest Reserve because of government policies. This raised the issue of implications of Government Policies to Water Development Projects and other interventions; they may be a block rather than enabling. c. An Environment Officer at senior level is in place and s/he ensure that impact studies are conducted before any project work starts. d. Sensitization exercises are conducted to communities on various natural resources. e. A Water Use Management Committee is in place for most water projects; f. Conflict and sensitization meetings are common and at times involves the Political Leader e.g. RDC; g. A budget for monitoring is set aside.
Gulu	**Key environmental and social concerns** a. Climate change has forced communities to encroach on wetlands in search in livelihood b. Need for more Technical people in the Environment sector, only one Environment officer without an assistant. c. Let the project provide alternative sources of income for the communities encroaching on Oyitino dam wetland for instance Apiary and Poultry projects instead of stone quarrying. **Environmental screening and management** a. The district undertakes environmental screening of all projects where both social and environmental aspects are captured. b. The Environment Officer is mandated to carry out screening of projects and approva of EIAs c. The environmental department is poorly funded; does not have adequate resources to monitor all projects being implemented in the district. d. Most projects implemented by the district don't involve resettlement and compensation, communities are persuaded to provide land freely. e. The community development officer in liaison with environment carry out joint community sensitization to foster community participation.

District	Key Issues and Concerns Raised by Stakeholders
Oyam	**Key environmental and social issues** a. Encroachment by settlements and agriculture on forest reserves and wetlands b. Poor farming practices along river and stream banks causing erosion and siltation of rivers. c. Unsustainable fishing methods resulting in dwindling of fish stocks in most rivers around the district. d. Prolonged drought has left many water sources in Oyam and entire Northern Uganda dry resulting in communities using unsafe water sources like streams. e. Minakulu and Kamdini towns have piped water schemes but very few households are connected due to limited infrastructure. **Resettlement** The district rarely implements projects that require resettlement and compensation and in cases where compensation is required, the district negotiates with the community to provide land freely. **Capacity gaps and training** The sub-county environmental focal persons need refresher training in environment safeguards for effective monitoring of projects.
Kyegegwa	**Key environmental and social issues** a. Long spells of drought have left many water sources completely dry b. Encroachment on wetlands like Katonga by members of the community is still a big challenge. c. The Environmental officer plus Environmental focal persons at the sub-counties monitor environmental compliance during project implementation. d. The budget funding for the environment office is inadequate, need for more facilitation. e. The environmental focal persons at the sub-county level require refresher training in monitoring and implementation of environmental safeguards.
Buhweju	**Key environmental and social issues** a. Gold mining activities causing pollution and silting of streams affecting users downstream. b. Loss of livelihoods especially for liquor brewers and gold miners downstream after construction of the Intake. c. Provision of safe water for the communities in the remote area will reduce water borne diseases. d. Increased access to safe water in the remote areas of Bitysa will reduce incidences of water borne diseases. **Resettlement and land uptake** a. District agreed with land owners for the project to be compensated and no resettlement will be involved. b. Transimission line will follow existing road reserves.

5 IMPACT ANALYSIS AND PROPOSED MITIGATION

The proposed IWMDP subprojects are not likely to result in significant adverse environmental or social impacts if carefully managed as their main objective is to provide local communities with adequate financial and technical support for water supply and sanitation services. However, if not carefully designed and implemented, these types of subprojects can lead to negative environmental and social impacts, particularly those which entail investments in infrastructure development and new construction (e.g. water supply and sewerage works). Furthermore, weak or inadequate capacity for designing, managing and monitoring subprojects can lead to poor design and implementation and exacerbate adverse impacts.

Thus, it is important to identify potential risks early in subproject preparation and design, both in terms of the Project's overall design and of the specific investment activities. Impacts can be divided into negative environmental and social impacts associated with construction and operation phases, and these depend specifically on the size and nature of the subproject and the environmental and social sensitivities associated with the location of the subproject (Table 19).

Table 12: Environmental and social issues and sensitivities associated with each WMZ

WMZ	Environmental	Social
Lake Kyoga	**A.** The savannah woodlands areas in Nakasongola and other districts such as Masindi, Kiboga and Mubende have been extensively cleared of tree cover to produce charcoal; **B.** Soil and water conservation practices, which rely on planting trees and grass, have not been successful principally due to high termite activity; **C.** The Kyoga WMZ/catchment is prone to rampant floods that destroy crops and farmlands as well as displacing people. This indirectly leads the area to problems of food insecurity; **D.** Increased reclamation of wetlands in the WMZ especially in areas of Kumi, Bukedea, Ngora, Pallisa, Budaka, Mbale and a number of areas in the Zone; **E.** Rampant seasonal fires are a threat to the ecosystems in the areas and this is further made worse during the dry and windy conditions which prevail during the dry seasons; **F.** Overgrazing in the areas Nakasongola areas has led to loss of vegetation and degradation of ecosystems and this is now causing increased soil erosion concerns; **G.** Brick making is of increase in the areas of Lake Kyoga especially near urban set ups; **H.** Sand mining in wetlands is equally of concern in the areas close to the urban areas and this is being driven by the rapidly growing construction sector; **I.** Pollution of wetlands through dumping of solid waste is equally posing a threat to the conservation status of wetlands especially those close to urban areas.	• Poor farming methods, rural-urban migration and landslides are some of the effects of poverty in Bududa; **A.** Areas bordering Karamoja region are prone to rampant cattle raids by the Karimojong warriors leading to loss of livestock and human lives; **B.** Poor road network characterizes the WMZ which makes access to the fish landing sites and marketing of fish difficult; **C.** Use of undersize fish nets is leading to over-exploitation of the fishery stock in the Lake Kyoga MZ. However, the GOU's effort to curb such fishing approach has led to conflicts between the fishermen and law enforcement agencies.

Albert Nile	**A.** Concerns of over-exploitation of trees for tobacco curing has led to over-cutting; **B.** There are also threats on natural resources in this zone. For instance, there is illegal logging of timber trees in some of the central forest reserves in the areas; **C.** Impacts of infrastructure developments such as Nyagak and Karuma hydropower projects; **D.** Impacts related to oil and exploration in the broader Albertine Region are also being undertaken in areas of Pakwach; **E.** Increasing charcoal burning in the Nebbi and Arua which is degrading the environment; **F.** In some of the areas, cultivation is extending close to the banks and shores of water bodies and this brings about siltation of such ecosystems.	**A.** This region has suffered from insurgency for over 20 years hence, environmental good governance issues have been a challenge; **B.** This region especially areas of Masindi, Acholi and Lango areas has been hosting refugee communities (South Sudanese, Kenyan after the 2007 elections) and impacts of these on environment is evident to date; **C.** The practice of paddy rice growing is gradually catching up in these areas and with time, it can be a challenge with respect to the management of wetlands; **D.** The recent discovery of oil and gas in the Albertine Region has a number of social challenges to the wildlife and tourism sector.
Lake Victoria	**A.** Evidently industrialization in and around Kampala and other urban areas is a big and a rapid threat to ecologically sensitive ecosystems (wetlands and forests). For instance, some investors have set up factories in areas which were originally wetlands; **B.** The issue of pollution from agro-chemicals from flower farms in the vicinity of Lake Victoria wetlands is of concern. The areas of Lutembe bay and most others in Entebbe are subject to these impacts; **C.** Wetland degradation through solid and effluent waste dumping and discharge are a threat to the ecosystem health in Lake Victoria areas; **D.** There are also impacts relating to over-exploitation some wetland related resources in the WMZ especially in areas in Mukono where they harvest forest resources such *Calamus reeratus, Phoenix reclinata and Raphia farinifera* are all currently over-exploited for crafts. In addition, the wetland habitats are faced with increasing threats of reclamation for cultivation;	**A.** There is some eminent contradiction as far as landownership law is concerned. Some of the ecologically sensitive areas such as wetlands are owned by individuals and they claim their titles are issued by government; **B.** Population pressure is mounting in the zone and this equally being exerted on the natural resources in the areas of this zone; **C.** Rapid and unplanned urbanization is encroaching on wetlands and some of the ecologically sensitive ecosystems. This pressure is through industrialization and construction of affluent and luxury dwellings.

	E. Extraction of infrastructure construction materials in terms of sand, clay, murram and stone products is posing environmental challenge in this WMZ. Hills, wetlands and rocks are being exploited at a faster rate and this poses a host of environmental and social challenges in this WMZ; and The are eminent/potential threat to the Lake Victoria WMZ from expansion of sugar estates especially by Lugazi based Metha Group of Companies who have pressing Government of Uganda to degazzete parts of Mabira Forest Reserve. In Sango Bay (SAMUKA) sugar plantation has been set up and with time expansion of such enterprises will put pressure on the forests and wetland ecosystems in its vicinity.	
Upper Nile	**A.** There are concerns regarding implementation of a number of road infrastructures that are likely to lead to a number of environmental and social impacts on the environment.	**A.** Until 2005, the areas of the Upper Nile (South Sudan) had been in war and this led to a break in environmental good governance which meant poor and un regulated exploitation of natural resources; **B.** The region has impacts of refugees on the environment and these have led to environment degradation in terms of over-cutting of trees and settlement related issues.

The following section discusses the types of impacts that may be expected during Project implementation.

5.1 POSITIVE ENVIRONMENTAL AND SOCIAL IMPACTS

The project will have significant benefits in particularly with regards to the improvement of health and wellbeing, especially in terms of the reduction of water-borne illnesses and reduction in the potential outbreaks of epidemic infectious diseases such as cholera and diarrhea. The introduction of a complementary health and hygiene awareness campaigns targeted at women and children in project host communities will considerably enhance the benefits of the project. Construction works (e.g. excavation for pipelines) will present employment opportunities to local people (including women) and generate direct income benefits to local households. The project will contribute to poverty reduction as well as to the improvement of socio-economic and health indicators of the project host areas. The Project is supporting the GoU's effort to introduce a new paradigm of catchment planning that improves participatory water planning at all levels to better reflect the needs of local communities.

5.1.1 OVERALL PROJECT POSITIVE IMPACTS

The following are the summary of likely positive environment and social (direct and indirect) impacts of the Project and will contribute to other beneficial initiatives supporting the Project:

a. Overall, the concept of basin-wide management of environmental resources as advanced in the program has a number of benefits especially its holistic approach to the conservation and protection of ecosystem goods and its services. It builds complementarity, synergy and eliminates duplication of effort in environmental management;
b. The IWMDP is cognizant of the transboundary nature of environment hence, it seeks to bring related and key stakeholders responsible for the management of given natural resources in neighbouring districts and countries on board in the management of the project interventions;
c. Investments geared towards developing capacities of the stakeholder institutions that manage the natural resources will go along way to ensuring good environmental governance of the natural resources, hence ensuring their sustainability;
d. Construction and rehabilitation of water and sanitation facilities will have significant positive impacts on the health of the communities and populations in the targeted project areas;
e. The boreholes, wells and supplies derived from springs will make safe water fully available to the populations as well as their assets emanating from projects in livestock watering points and associated animal tracks (reducing or eliminating prevailing agriculturalist/pastoralist conflicts) and small scale agricultural activities and essentially improve their quality of life;
f. Investments in river banks stabilization will protect the rivers from siltation and sedimentation from run-off;
g. The contour bands will help in checking erosion on hilly areas and this will lead to improved productivity in the areas;
h. Investments in rainwater harvesting will ensure availability of water supply for domestic and agricultural use including livestock production. This will help communities move from rain fed agricultural production and also reduce water use conflicts during the rainy seasons;

i. Afforestation programmes will have a multiplicity of social, economic and environmental benefits in terms of contribution to carbon sequestration, supply of firewood and source of income at household and local government levels;
j. The activities of the program will help to identify and to implement the necessary measures for the protection of biodiversity areas thus conserving the wealth of the species at the local and national level. Also, these investments will contribute to combating desertification; enhancing reforestation, soil restoration and the implementation of national conservation activities. The water catchment basins will be better used for the socio-economic benefits of the communities whilst at the same time establishing sound management practices to conserve water resources.

5.1.2 OTHER SPECIFIC INVESTMENTS BASED POSITIVE IMPACTS

POSITIVE IMPACTS OF CONSTRUCTION OF FECAL SLUDGE TREATMENT FACILITIES

The construction of a fecal sludge treatment facility will have the following positive impacts:

a. Improved quality of health from proper management of fecal matter that would otherwise be dumped haphazardly with possibilities of it draining into rivers and streams. This is reported to be a common practice by the operations of some cesspool operators;
b. Address the problem of frequent digging of latrines when those in use fill up which is the common practice at the moment;
c. Employment and some business opportunities will be direct benefits to the communities during the construction and operation phase of the project; and
d. Potential to contribute to improved agricultural production due to availability of manure from the sludge plants once operational. It is anticipated that, properly treated sludge can be re-used as fertilizer to support agricultural productivity through minimization of the chemical fertilizers, which are potential pollutants of water bodies such streams.

5.1.3 POSITIVE IMPACTS OF PRODUCTION WELLS/BOREHOLES

Construction of wells/boreholes and rehabilitation and extension of water supply schemes will have the following positive impacts:

a. Improvement in availability of water at household level: availability of water as per WHO recommendations is far below in refugees' areas as well as those in host communities;
b. Create short-term employment opportunities: use of appropriate labour-intensive during construction (e.g. excavation for pipelines) will provide employment opportunities to the communities generating direct income to the households;
c. Mitigation of tension/conflict over water: as scarcity of water is one of the sources in the beneficiary communities;
d. Improve WASH at both institutional and household levels: the intervention will improve safe water availability and accessibility thereby improving health of children and the communities; and
e. In the end, the water will be extended to public entities (schools and health canters) will bring about improved delivery of social services; and
f. Enhance women participation in household and socio-economic activities through sustainable water supply. This means that, women and girls do not have to spend more time collecting water which will support women's participation in social and economic activities, and girls' time to play as well as go to school is greatly reduced;

5.2 PROJECT NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS

The implementation of the proposed IWMDP will result in a number of environmental and social impacts for the program as a whole.

The potential negative environmental and social impacts (both direct and indirect) of the proposed IWMDP include the following:

a. Occupational health and safety risks during construction and during operation and maintenance, e.g., FSTP;
b. inadequate sludge management and wastewater effluent discharges including effluent discharge-related pollution on lakes, rivers, and wetland areas; depending on specific site assessment, final disposal os sludge shall be determined based on prevailing local context and availability of a gazetted watse landfill. Where feasible, onsite treatment will be undertaken and resultant Organic Manure sold off to the loca communities.
c. impacts on water bodies associated to earthworks and wastewater generated from construction activities;
d. emissions of particulate matter by earthworks and removal of vegetation cover;
e. generation of cut to spoil materials whose transportation and disposal will require proper management,
f. generation of other solid waste during construction and operation of the planned facilities;
g. impacts of water intake and discharge structures on the water bodies;
h. possible impacts on surface and/or ground water due to leakages from and intrusion of storm water to the facilities (sewers, manholes, ponds, an septic tanks);
i. unpleasant odors and noise from the operation of sanitation facilities;
j. Temporary disturbance of the land surface during construction of the water facilities and offsite facilities;
k. impacts of water intake on environmental flows and aquatic ecosystems, including migratory fish species.
l. land take and associated livelihood impacts,
m. possibility of labour influx and associated social misdemeanor by workers, including gender-based violence.
n. HIV/AIDS concerns will likely increase due to influx of people to the areas in search of employment opportunities;
o. Potential conflicts over water use especially amongst pastoral and host communities can arise especially where those with large herds tend to dominate the small herd owners;
p. Indirect and induced impacts associated with accelerated socio-economic development due to improved water supply, sanitation and irrigation services.
q. Disturbance of the water sources during the construction of water intake and discharge structures and during any maintenance dredging that may be required for the intake and discharge;
r. Maintenance of some of the infrastructures such as dams will generate dredge materials whose disposal can pose environmental and public health challenges;
s. Abstraction of substantial quantities of water from the water bodies for project related activities and these can bring about hydrological impacts on the main water bodies; and
t. Some of the investments will involve acquisition of electronic equipment whose operations can have differing levels of greenhouse effects especially use of ozone depleting coolants in their operations.

5.3 POTENTIAL CUMULATIVE IMPACTS

5.3.1 CUMULATIVE IMPACTS OF SUB-PROJECTS

Based on availble information and in ordinary perception of the project, it gives impression that, the works will trigger large negative impacts which trigger its possible categorization as a Category A type. However, the study has analyzed project information, conducted consultations and well as site visits and based on all these, it is concluded IWMDP is a category B type taking into account the following:

f. The proposed subprojects are geographically dispersed; water supply systems will withdraw from different water sources; and wastewater treatment systems will discharge in different and separate waterway. Furthermore, wastewater systems are designed to meet effluent standards and constructed wetlands are also added to fecal sludge treatment facilities to further reduce flow and pollution loads into waterways. Above all, only a limited number of communal sanitation facilities per town (for markets and schools) are proposed and their location will follow design standards to avoid contamination of waterbodies;

g. Secondly, water supply systems will be designed based on technical studies to ensure safe yield from groundwater and surface water resources. In addition, IWMDP will finance a national groundwater management study to support implementation of groundwater development and management strategies to regulate and control activities that might compromise groundwater availability and quality;

h. It is also noted that, the proposed project activities are not located in any environmental sensitive areas or in areas where indigenous populations live;
The Project will support a range of infrastructure investments, including construction and rehabilitation of water supply systems, rehabilitation and expansion of wastewater treatment systems, construction of sewers and fecal sludge treatment facilities, on-site sanitation facilities, integrated water resources management measures, and renovation of water quality laboratories, among others. These interventions will instead address the current public health risks in urban areas whose systems are glaringly characterized by broken and over-loaded sewers;

i. On the other hand, issues of resettlement/land uptake will be minimal and will typically be restricted water transmission and distribution lines which will to a large extent, run along existing road reserves. Infrastructures for rehabilitation are existing hence, no need for land acquisition. However, in some instances where land will be required such as for temporary camp sites, such land will be acquired from land owners in line with GoU land acquisition laws. are resettlement due to the acquisition of land for sub-projects may combine with induced migration of people (for labour, services etc) to place greater pressure on natural resources in particular areas. The avoidance and mitigation of cumulative impacts requires: avoidance and mitigation of the impacts of individual projects; careful planning, based on sound technical knowledge, of the location, size, and material requirements of infrastructural projects, within the district and regional planning cycles; and

j. No doubt, the planned physical civil works in the sub-projects are expected to generate negative environmental and social impacts including health and safety concerns, effluent discharge-related pollution, land take, and possibility of labor influx. These impacts can be reversed, largely of temporary nature and scope, and can be easily and cost-effectively mitigated. It is also noted that, that impacts will be site-specific and may not affect an area broader than the sites of the physical works.

In conclusion, based on the environmental and social screening of the proposed project activities, the Project is anticipated to generate negative impacts which will largely will be localized, site-specific and small to moderate in scale. The project is not anticipated to generate any potential large scale, significant and/or irreversible impacts. Generally, project activities and its associated impacts can be managed with relatively standard mitigation measures. Overall by their nature, location, scale and scope, including the environmental and social context where the subproject will be situated. It is also important to note that, IWMDP subprojects will, individually have minimal adverse environmental and social impacts in their respective localities. Therefore, despite having several sub-projects, the cumulative negative environmental and social impacts of the project, virtually its negative impacts are expected to be mitigated with known technology, good practices and management solutions, resulting in residual impact of minor significance.

5.4 PROPOSED MITIGATION AND MONITORING MEASURES

In order to avoid or minimize impacts associated with activities to be funded under the Project, mitigation measures must be implemented as part of the subproject construction and operations to ensure compliance with local and international environmental and social guidelines and standards. These measures must be included as part of each subproject ESMP and will be budgeted for in the Technical Specifications of each subproject.

A set of monitoring indicators will be used to verify compliance with local and international standards and to identify corrective actions for subprojects failing to meet these standards. These indicators will be applied when undertaking annual monitoring reports. Examples of mitigation and monitoring guidelines have been provided in Annexes 5 and 8 for the types of activities anticipated to be funded under this Project. A generic ESMP for general guidance on mitigation of impacts is presented here below:

5.5 GENERIC ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Table 13: Environmental and Social Management Plan

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
Social Impacts					
Project design/Field study/Project dissemination	Accumulation of water with undesirable flooding	• Design and size adequate drainage system according to recognized methods; • Improve, detail topographic surveys.	Design Engineer	MOWE/NWSC	When necessary
	Job Generation Expectations	• Establish guidelines with contracted companies to use preferably local labor and raw materials.	Contractor	Project Owner / MGLSD, Local Governments	Continuously
	Increase in generation of direct and indirect Jobs	• hiring of local labor where possible/ available	Contractor	Project Owner / MGLSD, Local Governments	Continuously
	Economics Improvement	• Increase of demand for services and business	Project Owner/ Contractor	MOWE/NWSC	
	Interference in historical, archaeological and cultural heritage	• Contract in the phase of environmental assessment a qualified consultancy for the execution of the preliminary archaeological survey and the rescue, if necessary, in the area of the project, with the objective of identifying and obtaining pertinent approvals (if applicable).	Project Owner/ Contractor	MOWE/ NWSC	
Construction Phase	• Interference in historical,	• Advise the workers on the possible archaeological	Contractor	Resident Engineer/ MOWE/ NWSC, Loc Govt	When necessary

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
	archaeological and cultural heritage	vestiges and on the procedures to be adopted if they are discovered; • Immediately paralyze the works in the case of the discovery of archaeological vestiges and communicate the occurrence to the environmental site officer.			
	Disturbance of the local population	• Works that generate loud noises and disturb or may disturb the local population must be carried out with dampening equipment, or less noisy equipment; • In the case of fetid odors, as a corrective measure, odor control techniques can be performed by following procedures: 1) Wash columns; 2) adsorption columns; 3) Bio filters; 4) Thermal oxidation and 5) Application of chemicals in the collecting network; and • Establish a channel of dialogue and continuous understanding with the local population, in order to	Contractor	Resident Engineer, MOWE, NWSC, Loc. Govt	Continuously

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
		ascertain and correct possible operational problems of water and sewage systems that reflect in disturbance.			
	Labour Influx impacts and associated social conflicts, crime, spread of diseases, GBV, Child Labour & school drop outs,	• Sub-project ESIAs should factor labour influx assessment and mitigation • All Contractors to develop & implement a Labour Force Management Plan and Workers' Camp & Accomodation Management Plans as part of C-ESMP • All workers to sign employment Contract including Code of Conduct • Sensitization of workers • Establish a Grievance Redress Committee to act as link between community and the project • Establish a Grievance Committee for Workers • Casual works be undertaken by local workers from the host community to reduce influx	Contractor	Supervision Consultant, MOWE, NWSC, MGLSD, Respective District Local Governments	Works commencement & Continuous.

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
		• Regular Monitoring by District Local Governments (Community Development Officers, Probation Officers, Gender Officers) and MGLSD			
	GBV such as sexual, physical, and psychological abuse of women & girls, defilement, exploitative sexual relationships.	• All Workers to sign Code of Conduct • Continuous sensitization of workers • Establish Workers Grievance Redress Committee • Project to cooperate with Local Authorities in maintaining law & order at the project host community • Engage CSO or Consultants to implement GBV-Action Plan	Contractor	Supervision Consultant, MOWE, NWSC, MGLSD, Respective District Local Governments	Works commencement & Continuous.

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
Operation Phase	Promotion of health, well-being and social justice / Social development and Economic	• Install the systems exactly in accordance with the Project approved by the Environmental Licensing Body, so that all mitigation measures to the approved environmental impacts are put into practice, so that the benefits to be generated do not become environmental and health damages; • Carry out campaigns always seeking partnerships encouraging good personal and collective hygiene; and • Adopt good environmental and sanitary practices, and combat potential sources of disease transmission, especially infectious diseases.	MoWE/NWSC & Local Authorities	MoWE/NWSC & Local Authorities	Continuous

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
	Operation and Maintenance of Sanitation Systems	• Leaks and floods - Isolate, drain, clean and recover areas and equipment due to leaks in pipelines and connections; • Leaks and floods - Perform preventive and predictive maintenance to avoid leaks in old and worn pipelines and connections; and • Damage to public property - Restoration of interrupted connections and possible public equipment damaged by eventual problems in water supply systems equipment.	MOWE/NWSC & Local Authorities	MOWE/NWSC & Local Authorities	Continuously
Environmental Impacts					
Flora and Fauna					

Construction Phase	Loss of natural resources (fauna, flora Entrapment of fish and fish migration from construction and operation of water intake structure	• Guide employees in relation to wildlife protection to avoid hunting or catching animals and not killing any animal unnecessarily; • During the construction, the traffic of vehicles involved in the works during the night (22-7h) must be avoided to avoid trampling of wild animals; • During the construction, noisy work should be avoided during the night (22-7h) to avoid disturbance of wildlife; • Protect tree formations and denser vegetation, to preserve the habitats of native species; • Carry out the planting of native species, according to the guidelines of the environmental impact assessment and the respective environmental management plan approved by NEMA, to compensate for the loss of flora during the works; • Avoid construction in areas where there is abundant animal life and	Contractor	Resident Engineer, MOWE/NWSC, UWA, NEMA & Local Authorities	Continuously

		environmentally protected areas such as Permanent Preservation Areas, Areas of Fragility/Environmental Sensitivity and Conservation; • Area should be initially cleaned with the removal of the first organic layer and leveled through earthworks (cutting and landfill); and • Elaborate and carry out an environmental education program with worker-oriented campaigns emphasizing the importance of the environmental preservation of the adjacent area of the project. • Surface water intake structures will be designed taking in consideration the aquatic ecosystem baseline of specific ESIAs. The baseline will inform the type of design features to protect fish migration. For instance, mitigation measures can include constructing fish pass structures or installing fish screens at the abstraction point.			

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
	Instability of slopes	• Develop the landscaping in an integrated way, promoting the delimitation of the movement of earth and compaction to avoid instability of the slopes.	Contractor	Resident Engineer, MOWE/NWSC & Local Authorities	When necessary
	Interruption or diversion of the natural flow of water resources	• Obtain abstraction permit & follow approved release regimes • Design and scale according to known methods of water drainage system through drainage ditches throughout the extension of the property boundary, seeking to order the natural water so that the soil can gradually absorb the flow. • The concern of mitigating action is in not disrupting the natural flow of water.	Contractor	Resident Engineer, MOWE/NWSC & Local Authorities	When necessary
	Clogging (silting) of the drainage system	• Design and scale according to known methods of water drainage system; • Use geotextile blankets to protect the drainage ditch with compatible vegetation cover with floodable areas.	Contractor	Resident Engineer	When necessary

	Alteration of soil quality/Loss of soil/erosion and compaction	• To contain pluvial erosions, specific water diversion pathways must be designed and also to avoid floods; • Avoid actions on areas subject to the initiation of erosive processes; • Contain the development of erosive processes in order to avoid soil loss; • Avoid using heavy machinery and Restricting activities to the limits set by the executive project; • Technical control of earthworks; • The earthy materials (sand, clay etc) handled during the excavations should be used to fill the ditches and topographical levelling of the land; • Avoid spillage of combustible materials and promote preventive maintenance of machinery, vehicles and equipment to prevent oil, fuel or grease spill etc.; • Avoid leaving humid sludge from water treatment station and effluents	Contractor	Resident Engineer, MOWE/NWSC & Local Authorities	Continuously

		treatment station in soil. In the absence of adequate structure, type of drainage or centrifuge, etc., it is necessary to isolate the soil with impermeable material and then lay the sludge on top, waiting to dry it; • Do not dispose of sanitary effluent in the soil without due treatment and authorization.			

	Alteration of surface and groundwater quality	• Ensure the stability of earthy and similar materials in storage situations so that they do not reach the bodies of water; • Provide chemical toilets or equivalent equipment to areas away from the campsite; • Provide waste storage places and promote the separation of generated solid waste; • Construction/assembly containment barriers if works are close to water (rivers, etc); • Ensure the stability of the banks of water bodies in adjacent areas close to the works of the sanitation projects; • Prepare and execute Plan for the monitoring of surface and underground water bodies throughout the construction phase; • If pollution is detected resulting from the works, they must be interrupted to initiate actions for containment and remediation of pollution;			

		• Avoid spillage of combustible materials and promote preventive maintenance of machinery, vehicles and equipment to prevent oil, fuel or grease spill etc; • Install a sanitary sewage system suitable for the construction site and that it be previously approved by the project Owner; • Protect perennial or intermittent water springs and water courses; • Preserve natural waterways and install appropriate structures for diversion and controlled conduction of rainwater; • Do not dispose of sanitary effluent in the soil without due treatment and authorization.			

	• Air pollution - Increased levels of noise, vibration, soot and dust.	• Work must comply with a maximum working time of up to 8 hours; • The equipment used during the works (vehicles and machines), should be regulated to avoid gas emissions; • Continuous maintenance and adjustment of machinery and equipment; • Humidification of the ground in the hours of greater flow of vehicles and in the hotter hours of the day; • Keep the buckets of the vehicles covered during the transport of material and regulation of the discharges of the combustion system of the working vehicles; • Apply constructive practices and equipment that generate less noise or reduce noise to avoid or minimize inconvenience to the local population; • Avoid cleaning or deforesting the area with fire;	Contractor	• Resident Engineer, MOWE/NWSC, NEMA & Local Authorities	Continuously

		• Do not burn any kind of solid waste.			

	Solid waste generation	• The solid waste generated must be controlled following the principles of reduction of production, reuse and recycling; • Avoid situations of shelter for dangerous animals (snakes, scorpions etc) in the areas of disposal of debris; • Avoid leaving leftover building materials on the grounds or dispose of them in any way (without control); • Solid waste generated must be collected, separated, duly conditioned and stored, for subsequent transportation & disposal in accordance with waste management regulations- using NEMA licensed waste handlers.	Contractor	Resident Engineer	Continuously

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
	Increased flow of large-Scale Vehicles (receiving / distributing material)	• Provide educational incentives, showing the importance of using safety, as well as alert the behavior of the driver of the vehicle to a defensive vision when driving the vehicle on public roads; • Determine entry and exit multiple access ways with ample parking lots so vehicles are removed from the public circulation.	Contractor	Resident Engineer/Safety Staff	Continuously
	Use of chemical and Hazardous Products	• Provide retention basins with a capacity greater than the product stored; • Train all workers involved in the handling of hazardous and chemical products.	Contractor	Resident Engineer/Safety Staff	Continuously
Health and Safety of Workers					
Construction/ Operation Phase	Damage to health, accidents to employees and third parties	• Provide individual protection equipment and Collective protection equipment's to all employees and third parties who perform construction and maintenance activities in the systems, to reduce	Contractor	Resident Engineer, MOWE/NWSC, NEMA, MGLSD & Local Authorities	Continuously

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
		risks from the work environment; • Immediately correct / remedy operational problems that may cause harm to the health and well-being of employees and people in communities close to the systems; • Develop specific and integrated risk analysis for sanitation systems in which the potential risks of accidents and other forms of damage to the physical and mental health of employees and third parties; • Establish vaccination program and provide medical care for employees; • Train workers for accident prevention and fire-fighting techniques; • Establish guidelines and rules for first aid and transportation of injured persons;			

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
		• Maintain an accident log, timely reporting & response; • Install information boards, warning stands and warning and safety signs during maintenance and special operations, especially in places that offer accidents to employees and third parties; • Install protective fences and / or bulkheads in locations that expose workers or others to the risk of accidents.			
	H & S issues during the collection and transport of faecal sludge and the disposal of treated sludge/biosolids, which still contain pathogenic organisms potential impacts of water intake structures on aquatic ecology and fish migration; impacts of water abstraction on	• Carry out onsite treatment and storage of sludge until rendered harmless for transportation and disposal, or sale to farmers • Dispose of any excess FSL at Municipal Landfills where available. • Undertake site specific assessment of potential impacts of water intake structures on aquatic	MOWE and/or NWSC	MOWE, NEMA, DWRM, Local Governments.	Continuously

Project Activity	Environmental/ Social Impact	Mitigation Measures	Responsibility		Timeframe/ Periodicity
			Implementation of measures	Monitoring of measures	
	downstream and other users and conflict in water use;	ecology and fish migration; impacts of water abstraction on downstream and other users and conflict in water use, and proposed practical and cost-effective mitigation actions/measures.			

6 PROCESS FOR SUB-PROJECT PREPARATION, IMPLEMENTATION AND MONITORING

This section sets out the environmental and social assessment procedures, reporting systems, and responsibilities to be adopted by the implementing agencies for the IWMDP, including Contractors/Consultants. The design of this assessment system complies with both the World Bank's Environmental and Social Safeguard Policies and the Ugandan EIA Regulations and Guidelines.

The section begins with details of issues that will be addressed, and the specific next steps to be taken. It then describes the various instruments in this ESMF including:

a. Steps to be taken for the screening, review and appraisal of proposed investments;
b. Procedures for preparation of ESMPs for subprojects;
c. Terms of Reference for ESIA of project investments;
d. Terms of reference for an annual environmental and social audit of the IWMDP; and
e. Compliance mechanisms.

The following table outlines the key roles and responsibilities for implementing the subproject screening, appraisal, review, and monitoring requirements under the ESMF.

Table 14: Roles and responsibilities in subproject environmental and social planning and implementation

Activity	Responsible person/authority
Initial screening in the field	Focal Point Officer (FPO) in each WMZ
Assignment of environment category	Environmental and Social Specialists of DEA and/ DWD for Component 1, NWSC for Component 2 & DWRM for Comp.3. This will be certified by the Project Environmental Specialist and cleared by the World Bank. Auxiliary/Supporting Facilities to be undertaken by Contractors and approved by the Resident Engineer, in consultation with MOWE/NWSC.
Analysis of screening findings and preparation of ESIAs/ESMPs and related management plans	Project Safeguards Staff, FPOs and independent Consultants. Auxiliary/Supporting Facilities to be undertaken by Contractors.
Review and approval of screening forms and ESIAs reports and submission to NEMA and WB	Project Safeguards Staff, DEA and/ DWD for Component 1, NWSC for Component 2 & DWRM for Comp.3. These shall be cleared by WB before submission to NEMA. Auxiliary/Supporting Facilities to be undertaken by Contractors and approved by the Resident Engineer, in consultation with MOWE/NWSC.
Issue environment permit that confirms ESIA is satisfactory	NEMA
Public consultation and disclosure	Project Safeguards Staff, DEA and/ DWD for Component 1, NWSC for Component 2 & DWRM for Comp.3. WB will undertake disclosure of cleared ESIAs, ESMPs, RAPs, in their Website.

	Auxiliary/Supporting Facilities to be undertaken by Contractors and approved by the Resident Engineer, in consultation with MOWE/NWSC.
Environmental Monitoring and Reporting	Project Safeguards Staff, FPOs, D/MEO, DEA, DWD, DWRM, NEMA, NFA, UWA, MoGLSD, Contractors and Supervision Consultants. WB will also undertake periodic monitoring of project implementation.

6.1 SCREENING AND REVIEW PROCESS

The screening process is aimed at determining which of the project activities are likely to result in significant negative environmental and social effects, with a view to determine appropriate impact mitigation measures for such activities, and to ensure environmental sustainability of sub-projects undertaken in the Project areas. The screening process for this project consists of four steps: i) review of environmental and social impacts checklist for projects; ii) screening of impacts from the sub-components and sites; iii) assignment of environmental categories; and iv) preparation, review and approval of Environmental and Social Impact Assessment (ESIA), and Environmental and Social Management Plan (ESMP).

Once a subproject has been submitted for financing, the investment will have to be screened using the screening form provided as Annex B. The Safeguards specialist team to be established in the Project Implementation Unit (PIU) will be responsible overall for carrying out the environmental and social screening process. The Focal Point Officer (FPO) in each WMZ will carry out the initial screening in the field. For UWSS investments, NWSC/DWD staff will undertake the screening, while DWRM will lead in screening Component 3 activities. The screening form will determine the required level of environmental and social assessment. It should also be noted that all project auxiliary/ supporting facilities such as Labour Camps, Equipment Storage Yard etc, shall be subjected to the environmental and social screening as provided for in this ESMF.

Sub-projects shall be screened and categorized following OP 4.01 requirements, and determined by the type, location, sensitivity, nature and reversibility of environmental and social impacts. The Sub-projects shall be screened into the following three categories:

a. Class/Category A: Projects which may have adverse and significant environmental impacts, which are broad, diverse, beyond the local site, irreversible, involving conversion of critical natural habitat, involves handling and use of hazardous materials, and causing major involuntary resettlement impact. These projects will require full ESIA. Category A subprojects will be excluded from Bank financing;
b. Class/Category B: Projects of the type or scale that have potential to cause some significant environmental impacts but which do not warrant a full ESIA. The Sub-projects under this EA Category have limited impacts in terms of scope, the impacts are site-specific and fewer, largely reversible, readily mitigated through known methods and technology. In accordance with OP 4.01 ESMPs will suffice to meet the requirements. However, if as deemed by Uganda EIA guidelines that a full ESIA is undertaken, together with a detailed ESMP. Sub-projects that shall

be deemed to pose more limited environmental and social impacts shall be subjected to preparation of ESMPs alone.

c.

d. Class/Category C: Projects which would have no impact and do not require ESIA. These projects typically have no adverse environmental and social impacts, and if any impacts, they shall be minimal, and easily mitigated. In some rare cases, simple ESMPs may be required. However, technical assistance that supports feasibility study or engineering design of infrastructure projects would be considered at least as Category B, or A, depending on the project attributes as described in (a) and (b) above.

Under the IWMDP, most investments under components 1 and 3 will require ESIAs and ESMPs. It is expected that some investments under Component 2 (water supply and sanitation infrastructure) will require full ESIAs, in which case funding has been recommended in the ESMF to address this. The Project Safeguards Staff and FPOs will be responsible for categorising an activity as an A, B, or C in coordination with the DEA, DWRM, DWD and NWSC and in Consultation with the World Bank.

If a subproject is screened and considered to be a Category A, it will not be eligible for financing under the IWMDP unless the project is formally restructured, i.e. its EA category is changed from B to A, which is subject to the World Bank's Board approval.

Summary of proposed instruments for subprojects based on preliminary screening.

Components	Selected service areas	Likely level of Impact & recommended specific instruments
Component 1 – Urban Small-town and Rural Growth Centers Water Supply and Sanitation		
Support to small town	• Busia • Namungalwe-Kaliro • Kyegegwa-Mpara-Ruyonza (west) • Namasale	EA Category B since their likely risks and impacts are predictable and readily mitigated. From OP 4.01 these would typically require ESMPs to be prepared and in line with Uganda requirements, these would require preparation of a detailed ESIA for the Sanitation activities and a Project Brief (detailed ESMP) for Water Supply aspects. It is therefore recommended that detailed ESIAs and ESMPs be prepared for each subproject during project preparation.
Support to RGC	• Kasese RGC cluster: Kyarumba, Kyondo, Lake Katwe, and Kisinga. • Bitsya -Kurungu • About 30 RGCs located in 20 districts – solar piped water schemes.	These are typically EA Category B subprojects. The subprojects entail Gravity Flow Schemes and solar piped water schemes. These subprojects generally have minimal environmental and social impacts. From OP 4.01 ESMPs should suffice and similarly from GoU's requirements a Project Brief (ESMP) should be adequate.

		It is therefore recommended that ESMPs (also called Project Brief by GoU terminology) be prepared for these subprojects.
Support to Refugee and Host Communities	Yumbe, Arua, Adjumani, Moyo Lamwo, and Kiryandogo	Support to Refugee hosting districts located in the West Nile and Northern Region may include both Water Supply and Sanitation. However, sanitation activities are expected to be basic and not at the scale of those in Small Towns. By their nature and readily mitigated impacts, these are typically EA Category B activities. These would typically require ESMPs to be prepared according to OP 4.01 and according to GoU it would require Project Briefs (detailed ESMP) for Water Supply aspects. It is therefore recommended that detailed ESMPs (also called Project Brief by GoU terminology) be prepared for each subproject during project preparation.
Component 2 –Urban Large Towns Water Supply and Sanitation		
Support to large town	Mbale Municipality and nearby small towns Gulu Municipality and nearby towns	The scope of water supply works and sanitation infrastructure activities is considered substantial and from both OP 4.01 and GoU requirements would necessitate preparation of detailed ESIA. It is therefore recommended that detailed ESIAs be undertaken for these subprojects. The Mbale ESIA was cleared by RSA in July 7, 2017 as EA Cat. B, and similarly this is expected for Gulu.
Component 3 – Water Resources Management		
Catchment management measures	Four sub-catchements - Upper Nile WMZ (Kochi and Aswa II sub-catchments) and Kyoga WMZ (Lwakhakha and Awoja sub-catchments)	Any investments to be implemented from this menu will be subjected to environmental and social screening following the OP 4.01 requirements and also informed by the GoU requirements. The level of their Assessment or likely instruments cannot be determined at this stage, but it is largely expected to be Category B.
Water Resources Strategy	Albert WMZ	This is exempt, since it is basically process activity.
Catchment management plans	Nyamugasani and Kafu catchments in Albert WMZ & Sezibwa and Okweng in Kyoga WMZ)	Development of the plans shall be done in a Consultative manner and with clear Stakeholder Engagement Plans. All the developed sub-projects will be screened before implementation. The level of screening will be determined by the nature of suggested investments, and the guidance provided in the ESMF shall be followed. By and large, the activities here are expected to be EA Cat. B or C.
WIS Information and Groundwater study	National	This is exempt since these are studies. Screening shall be done where necessary.

6.2 APPRAISAL AND APPROVAL

6.2.1 APPRAISAL AND SCREENING

After analyzing the data contained in the environmental and social screening form and after having identified the right environmental category and level of assessment needed, the type of instruments to be prepared (Full/simplified ESIA/ESMP), the FPO will prepare TORs for their preparation.

The ESIA will identify and assess the potential environmental and social impacts of the planned activities, assess alternative solutions and present the mitigation, management and monitoring measures to be adopted. These measures will be quoted in the ESMP that will be prepared as part of the ESIA for each subproject. The preparation of the ESIA and the ESMP will be done in consultation with all relevant stakeholders and project affected people.

6.2.2 PREPARATION OF SUB-PROJECT ESMP, INCLUDING CONTRACTOR'S ESMP

The Proponent will undertake the ESIAs and ESMPs in consultation with NEMA and the World Bank. Under the proposed IWMDP arrangements, the MoWE/NWSC will be responsible for preparation of their respective Components' ESIAs/ ESMPs. The MoWE/NWSC may consult with the WB, NEMA, MoGLSD and DEOs for technical advice. All project ESIAs/ESMPs shall be approved and cleared by NEMA and World Bank respectively.

For all works contracted out for implementation, Contractors shall be required as part of their contractual obligation to develop and implement a Construction/Contractor's ESMP based on the original project ESMP, auxiliary facilities such as Labour Camps, Equipment Storage Yard, etc, including Labor Influx Management Plan, Traffic Management Plan, Workers Code of Conduct, etc.. Such auxiliary facilities shall be subjected to any required ESIA and/or statutory approvals (e.g. EIA approval by NEMA, Registration of Workplaces by MoGLSD, etc). This shall be the responsibility of the Contractor and accordingly supervised by the Client or Client's representative. In addition, all Contractors shall be required to undertake environmental and social due diligence of materials supply sources (stones, sand, murram), to ensure acquisition of such materials from compliant facilities. Where necessary, the World Bank may review and provide further technical guidance on Contractors' ESMPs preparation.

The format for the ESMPs will follow the requirements under the Uganda EIA guidelines and the OP 4.01 requirements. As part of the EA process, ESMPs will need to be prepared and implemented for Category B projects. For those subprojects which trigger the safeguard policy on dam safety (OP 4.37) the associated engineering designs shall be prepared and supervised by qualified and experienced engineers following FAO guidelines for small earth dams (refer to Section 9.7.4) or physical cultural resources (OP 4.11), associated plans will be required -PCRs Inventory/Chance Finds Procedure. The ESMP should be a short and concise document (between 15–20 pages) and must contain the necessary sections as outlined below:

Box 9.1 Contents of an ESMP

a. Description of the possible adverse effects that the ESMP is intended to address, including but not limited to the following aspects, as appropriate: bio-physical, health & safety, waste, chance finds/PCRs, grievance redress, labour force, auxiliary facilities, construction materials due diligence, etc;
b. Identification of project design alternatives that would meet similar objectives, and a description of why these projects are not viable, especially if they have a lesser environmental or social impact;
c. Description of planned mitigation measures, and how and when they will be implemented
d. Program for monitoring the environmental and social impacts of the project, both positive and negative;
e. Description of who will be responsible for implementing the ESMP; and

Cost estimate and source of funds.

Sample Template for an ESMP is provided in Annex C.

Environmental contract clauses should be included in the Technical Specifications and be accounted for as part of the Project investment's overall implementation budget. Annex D provides a set of recommended contract clauses to include in contractor agreements. Effective implementation of the ESMP will ensure that the appropriate mitigation measures have been employed to avoid and/or minimize any potential impacts resulting from the proposed activity.

6.2.3 ESMP BUDGET

The ESMP for each investment scheme will outline the appropriate budget required to implement measures for mitigation and monitoring. It will also indicate the costs of training and capacity building required. Costs should be calculated based on estimates provided by Contractors for any mitigation measures required during the civil works. For example:

a. Costs of ensuring the appropriate dust suppression mechanisms are in place during excavation works must be calculated and included in the tender documents;
b. Costs of installing erosion control measures should be estimated as part of the engineering costs;
c. Training of staff on environmental and operational, health and safety issues should be outlined in detail; and
d. Costs of monitoring during construction should be calculated based on the frequency of monitoring and cost of equipment.

6.3 APPROVAL

MOWE/NWSC will review the ESIAs/ESMPs, and will make recommendations as to whether the results of the screening process or the ESIA/ESMPs are acceptable, focusing on:

a. The results and recommendations presented in the environmental and social screening forms.
b. As appropriate, the completeness of the assessment process to ensure that all environmental and social impacts have been identified and effective mitigation measures have been proposed and incorporated into the sub-projects ESIA and an ESMP with associated costs prepared.

Following the review of the ESIA by MOWE/NWSC, the ESIA will be forwarded to the World Bank for clearance and to NEMA for final review and approval. If the ESIA is approved, NEMA issues the

necessary environmental permit that confirms the ESIA has been satisfactorily completed and the project may proceed. A record of the decision explains how environmental issues were addressed in the process.

Note that the Client and/or their representative (Supervising Consultants) shall undertake quality assurance of the ESIAs undertaken for the project supporting facilities by the Contractors. Quality assurance will include review and approval of TORs, supervision of the ESIA consultants, review of ESIA reports before submission to NEMA for approval, and development and approval of Construction ESMP.

It is important to note that this review and approval process is to be carried out in parallel with the review and approval of the technical, economic, financial and other aspects of the subprojects. Implementation of subprojects cannot commence until the environmental and social aspects have been reviewed and appropriate mitigation measures have been adopted.

As regards social impacts due to land acquisition, the implementation of subprojects cannot proceed until the resettlement and/or compensation plans have been prepared and implemented. This is further detailed in the IWMDP RPF.

6.4 DISCLOSURE OF SUBPROJECT INFORMATION

In compliance with World Bank Policy on Information and Uganda EIA Regulations, before a subproject is approved, the applicable documents (ESIA, ESMP and/or RAP and associated management plans) must be made available for public review at a place accessible to local people (e.g. at a local government office), and in a form, manner, and language they can understand. It is recommended that the ESMPs and RAPs be disclosed in the same location that the community development plans are made public to ensure that there is wide access to the documents. In addition, copies of the ESIAs/ESMPs shall be made available to the public through the public libraries and websites of participating District Local Governments, MOWE, NWSC, NEMA. Any arising comments from the public shall be taken into consideration by the project.

For EA Category A sub-projects, Stakeholder Consultations shall be undertaken at least two times, (a) on the draft TORs for the ESIA and (b) once the draft ESIA report is prepared. This shall be documented in the ESIA report.

6.5 MONITORING AND ANNUAL REPORTS

Monitoring is done by the Proponent, MoWE and NWSC, NEMA (through the Department of Environmental Monitoring and Compliance), the UWA if there are issues related to protected areas, NFA if there are issues related to forestry, MoGLSD, respective District Local Governments, and the public. FPOs as well as the trained persons at lower local government level will, depending on the scale or scope of the projects, undertake the monitoring exercises in sequences and frequencies stipulated in the Project Implementation Schedule including where appropriate a Maintenance Schedule.
The FPOs in conjunction with the relevant Districts and Directorates will monitor the implementation of environmental mitigation measures based on the Contractor's workplan for subproject investments.

6.5.1 MONITORING AND REPORTING OF SUBPROJECT MITIGATION AND MANAGEMENT PLANS

The MoWE shall agree with the implementing agencies participating in the IWMDP on the supervision of the ESMP within the overall plan for the project. Accordingly, the supervision arrangements for the ESMP shall summarize key areas on which supervision will focus—critical risks to implementation of the ESMP, how such risks will be monitored during implementation and agreements reached with the Proponent.

Supervision of the ESMP, along with other aspects of the project, covers monitoring, evaluative review and reporting and is designed to:

a. determine whether the project is being carried out in conformity with environmental and social safeguards and legal agreements;
b. identify problems as they arise during implementation and recommend means to resolve them;
c. recommend changes in project concept/design, as appropriate, as the project evolves or circumstances change; and
d. identify the key risks to project sustainability and recommend appropriate risk management strategies to the Proponent.

It is vital that an appropriate environmental supervision plan is developed with clear objectives to ensure the successful implementation of an ESMP.

The MoWE and NWSC in collaboration with NEMA will monitor the implementation of the environment mitigation measures on a sample of subprojects on quarterly basis. On annual basis the NWSC and MoWE in collaboration with NEMA will carry out a national assessment of subproject performance in environment and natural resource management as part of the Project's overall monitoring program.

Monitoring of the compliance of project implementation with the mitigation measures set out in ESMPs and associated management plans will be carried out by technical staff of MoWE and NWSC. These officers will have responsibility for carrying out this monitoring by regularly (monthly & quarterly) visiting the projects sites, and pursuing corrective measures as required. Compliance monitoring comprises on-site inspection of construction activities to verify that measures identified in the ESMP are included in the clauses for contractors and are being implemented. This type of monitoring is similar to the normal tasks of a supervising engineer whose task is to ensure that the Contractor is achieving the required standards and quality of work.

The following outcome indicators will be used to track project implementation:

a. The number of people provided with access to "Improved Water Sources" under the project the number of new piped household water connections that are resulting from the project intervention
b. The number of piped household water connections affected by rehabilitation works undertaken under the project (number)
c. The number of water utilities that the project is supporting

d. The number of other water service providers that the project is supporting, and
e. The number of catchment protection plans implemented.

Once implementation of the subproject has started, regular supervision missions shall be carried out (preferably by a third party) and an annual monitoring report shall be submitted to the MoWE, MWSC and World Bank for review.

6.6 ANNUAL REVIEWS AND PERIODIC AUDITS

An independently commissioned environmental and social audit will be carried out periodically (between 12 – 36 months) depending on the level of implementation of the sub-project. The audit team will report to NEMA, the MoWE, the NWSC and the World Bank, who will lead the implementation of any corrective measures that are required. An audit is necessary to ensure (i) that the ESMF process is being implemented appropriately, and (ii) that mitigation measures are being identified and implemented. The audit will be able to identify any amendments in the ESMF approach that are required to improve its effectiveness.

The periodic environmental and social audit also provides a strong incentive for the MoWE to ensure that the ESMF will be implemented, and the individual ESMPs will be developed and implemented. A periodic audit report (refer to example format in Annex E) will include:

a. A summary of the environmental performance of the IWMDP based on ESIAs and ESMPs;
b. A presentation of compliance and progress in the implementation of the subproject ESMPs;
c. Number of D/MEOs trained in implementation of this ESMF;
d. Number of relevant Municipal and District Office staff attending training courses in ESIA;
e. Number of written warnings of violation of ESIAs/ESMPs issued to project proponents;
f. A synopsis of the environmental monitoring results from individual subproject monitoring measures (as set out in the subproject EIA/EMPs).
g. A compliance Schedule agreed to between MOWE/NWSC and NEMA, pointing out non-compliance issues, corrective measures, implementation timeframe, costs and responsibility centers.

6.7 ISSUES RELATED TO RESETTLEMENT, PHYSICAL CULTURAL RESOURCES AND DAM SAFETY

If identified as a requirement of the subproject through the environmental and social screening process, a Resettlement Action Plan, a Physical Cultural Resources Management Plan/Chance Finds Procedure, dam safety measures or a combination of these, is prepared alongside or as an integrated part of the subproject's ESMP.

6.7.1 RESETTLEMENT ACTION PLAN

Abbreviated RAPs will be needed for each subproject that may result in the loss of access to resources. An abbreviated RAP will focus on the procedure and amount of loss and compensation and be around 10 pages at most (refer to the WMDP RPF). The MoWE in collaboration with the District Offices responsible for planning and implementing the subprojects will coordinate with the Ministry of Lands, Housing and Urban Development in preparing the RAP. The RPF outlines the

relevant steps required in order to ensure that appropriate measures are put in place to safeguard the rights of affected communities.

6.7.2 PHYSICAL CULTURAL RESOURCES MANAGEMENT

As the WMDP has also triggered the OP 4.11, it is important that the ESIAs shall include the process for addressing impacts on physical cultural resources. PCRs inventory shall be undertaken as part of the ESIA process. Measures will need to be integrated into the ESMP to address the following areas:

a. Avoidance or mitigation of identified adverse impacts;
b. Provisions for chance finds;
c. Measures for strengthening institutional capacity; and
d. Monitoring systems to track progress of these activities.

The plan shall be consistent with the Uganda's overall policy framework and national legislation, the World Bank OP 4.11 for Physical Cultural Resources, and shall take into account institutional capabilities relating to the management and preservation of physical cultural resources. Examples of contract clauses to address physical cultural resources are outlined in Annex C.

6.7.3 PROTECTED AREAS, NATURAL HABITATS AND FORESTS

OP 4.04 is triggered due to the fact that investments may be situated in or around sensitive ecological areas of Uganda like the wetlands, and areas of ecological importance within the targeted WMZs. OP 4.36 is triggered due to potential project impacts on and in management of forests. Any natural habitat that may be affected shall be included in the overall project ESMP and appropriate mitigation measures undertaken. The project shall avoid investments that may lead to conversion or degradation of any protected area or natural habitat, including forests.

6.7.4 DAM SAFETY

OP 4.37 is triggered as the project will finance rehabilitation and construction of small dams (i.e. dams smaller than 15m, as per OP 4.37) identified through the catchment planning process under component 3, including small dams to prevent soil erosion and for flood protection. The existing Small Dam Guidelines prepared for Uganda, and the FAO Manual on Small Earth Dams (both disclosed) will be used to ensure adherence to generic dam safety measures.

Key issues to consider include:

a. Users should restrict themselves to the construction of earth dams no higher than 5 m from streambed to finished crest level.
b. Dams on catchment areas exceeding 25km^2 or with reservoir areas storing more than 1,000,000 m^3 may require the advice of a hydrologist to assist in the design of spillways and other outlets and for the estimation of freeboard.
c. No spillway should be less than 10m wide and 1 m deep for catchments up to 5 km^2 and should be at least 15m wide and 1.5m deep for catchments exceeding this area.
d. Any dam that involves out of the ordinary topography (i.e. steep slopes upstream, risks of landslips), hydrology (i.e. flash floods, droughts, snowmelt) or soils (i.e. poor-quality soils, sodic soils, permeable layers in the soil, bare earth surfaces in the catchment) should only be designed and constructed under the supervision of a qualified engineer.

The Project does not support the construction or rehabilitation of large dams and subprojects do not include structures that will rely on the performance of an existing dam or dam under construction (DUC). The latter conclusion also applies to the Gulu Water Supply System, which was evaluated carefully given that the intake structure would be located in the backwater of the Karuma dam (a DUC). The abstraction point of the intake would be close to the river bed and below the minimum reservoir operational level. The proposed intake is a submerged structure, which would be designed to include protective features to pipes, valves and associated electromechanical installations. Failure of the dam will not affect the intake operation given that it is located upstream of the dam and the Nile river environmental flow of 100 m3/s is more than sufficient to maintain constant raw water flow into the intake wet well (design capacity 0.34 m3/s). Important to mention that the intake and water treatment plant would be financed by KfW and the Bank would finance associated transmission and distribution pipelines.

6.8 OTHER SAFEGUARDS TOOLS

6.8.1 CHANCE FINDS PROCEDURE

The World Bank OP 4.11 on Physical Cultural Resources, states that; before proceeding with a project which entails the risk of damaging cultural property the project must:

a. Determine what is known about the cultural property aspects of the proposed project site. The government's attention should be drawn specifically to that aspect and appropriate agencies; NGOs or university departments should be consulted;
b. If there is any question of cultural property in the area, a reconnaissance survey should be undertaken in the field by a specialist. For the proposed project, implementation of the small scale civil works will take place in existing health units/centers/hospitals without known PCRs, and if any, such PCRs shall not be tampered with by the project, in any way. Projects that have the potential to have adverse impacts on cultural property include;

(i) Projects that includes large scale excavations, movement of earth, flooding of an area for creation of a reservoir, demolition, and other surficial environmental changes, and
(ii) Projects that may cause unplanned project-induced developments (e.g. squatter settlement).

6.8.1.1 STEPS TO BE TAKEN UPON ACCIDENTIAL EXPOSURE OF UN-KNOWN PCRS

During construction or through accidental exposure, a cultural heritage site or items of archaeological interest may be identified. As soon as this occurs, the contractor or sub-contractor shall undertake the following procedure to avoid any further damage:

a. The person or group (identifier) who identified or exposed the cultural heritage site or item archaeological interest must cease all activity in the immediate vicinity of the site.
b. The identifier must immediately inform his/her supervisor of the discovery;
c. The supervisor must ensure that the site is secured and control access. For this, install temporary site protection measures which include securing with warning/reflective tape and stakes, avoidance signs around the site;
d. The supervisor must inform relevant Employer personnel especially the HSE Manager;
e. Establish a localised no-go area needed to protect the Chance Find.

f. The responsible site manager must be requested to perform an assessment in order to determine whether the Chance Find is cultural heritage and if so, whether it is an isolate or part of a larger site or feature;
g. Subject to the direction of the Cultural Heritage Specialist, artefacts are to be left in place;
h. No tangible cultural heritage shall be removed unless specific conditions are met;
i. If materials are collected they will be placed in bags and labelled by the Cultural Heritage Specialist and transported to the nearest cultural heritage/archaeology research authority/centre. Project personnel are not permitted to take or keep artefacts as personal possessions;
j. The Cultural Heritage Specialist will document the Chance Find through photography, notes, GPS coordinates, and maps (collect spatial data) as appropriate;
k. If the Chance Find proves to be an isolated find or not cultural heritage, the Site Manager will authorise the removal of site protection measures and activity in the vicinity of the site can resume;
l. If the Specialist confirms that that Chance Find is a cultural heritage site, they will inform the relevant cultural heritage/archaeology body and initiate discussions about treatment;
m. Prepare and retain archaeological monitoring records including all initial reports whether they are later confirmed or not. The record will include coordinates of all observations to be retained within the Project's GIS system (ArcGIS) or equivalent;
n. Develop and implement treatment plans for confirmed finds using the services of qualified cultural heritage experts. The Cultural Heritage Specialist will coordinate this.
o. If a Chance Find is a verified cultural heritage site, prepare a final Chance Finds report once treatment has been completed;
p. While investigation is ongoing, co-ordinate with on-site personnel keeping them informed as to status and schedule of investigations, and informing them when the construction may resume; and
q. If mitigation is required, then rescue excavations will be undertaken by the Cultural Heritage Specialist, except in the case that the chance find is of international importance. Archaeologists with the appropriate expertise in these areas (e.g. hominid remains) addressing more specific finds will be appointed.

6.8.1.2 MONITORING

During construction, where relevant the protection of cultural/archaeological sites identified by the local community will be monitored to ensure their protection. Any chance finds will also be recorded and monitored; and audit undertaken to ensure that the guidance set out in the chance finds procedure was followed.

6.8.1.3 TRAINING FRAMEWORK

During the Project induction meeting, the Contractor and Subcontractors will be made aware of the presence of the on-call Cultural Heritage Specialist. Here, cultural heritage training will also be undertaken. The objective of cultural heritage training is for the Contractor and Subcontractors to manage potential impacts to known and unknown cultural heritage sites by facilitating the identification and reporting of potential Chance Finds encountered during construction works. This can be carried out through a Toolbox Talk.

The Contractor HSE Manager is responsible for providing training through a Toolbox Talk for all construction staff. The Toolbox Talk shall address:

a. Defining Chance Finds;
b. Identifying Chance Finds in the field;
c. Explanation as to why protection measures need to be put in place (avoid environmental harm and avoid prosecution/ legal penalties);
d. The steps to be taken upon identification and/or expose;
e. Do's and don'ts; and

Roles and responsibilities of construction Contractors and Subcontractors in the process and the roles and responsibilities of the Cultural Heritage Specialist

6.9 GRIEVANCE REDRESS MECHANISM

In order to ensure transparency and accountability, a grievance redress mechanism (GRM) shall be established by the Project Support Team in line with the guidance provided in this ESMF. The GRM shall have a clear set of goals and objectives and a well-defined scope for its interventions, especially geographical area coverage to ensure its accessibility and effectiveness. A set of procedures for receiving, recording, and handling complaints shall be available in the GRM. This will be managed by a National Grievance Redress Committee (GRC) consisting of a MOWE/NWSC Chair, the WMDP Project Coordinator, the assigned Resettlement Social Development Specialist, the Project's Environmental Focal Point, the chair of the community mediation board, a member of a recognized non-government organization, and a community leader. The GRC members should be qualified, experienced, and competent personnel who can win the respect and confidence of the affected communities. GRCs shall also be established at District and Lower Local Government Levels as appropriate. For easy accessibility, GRCs shall also be formed at or closer to project implementation sites, especially for Component 1 and Component 2 with considerable infrastructure developments. Grievances shall be first reported and handled at the lowest level or project site and referred to the next level if not resolved.

The GRM shall include procedures for:

a. recording, registering, and sorting grievances;
b. conducting an initial assessment of grievances;
c. referring grievances to appropriate units or persons;
d. determining the resolution process;
e. making decisions, including parameters and standards for accurate and consistent decision making;
f. directing relevant agencies responsible for implementing decisions;
g. notifying complainants and other affected parties of eligibility, the resolution process, and outcomes;
h. tracking, monitoring, documentation, and evaluation; and
i. a Grievance Log, that shall summarize all grievances registered, resolution reached, and feedback provided.

Depending on the nature and the severity of the complaint/s, the GRC in consultation with the Project Affected Persons (PAPs) or Complainant, shall identify and decide on an approach for

grievance resolution. Where appropriate, complainants shall be given the choice of selecting an affordable approach with which they are comfortable and confident and that is beneficial to them.

In projects with small-scale infrastructure, construction-related complaints can be numerous and managing them is the Contractor's responsibility under its contract with the implementing agency (refer to Table 24). Usually these kinds of complaints are described as environmental and social impacts and include issues related to dust, flooding, blasting (noise, vibration, evacuation), lost access, dangers to life, damage caused to public roads from heavy machinery, deteriorating water quality and quantity, damage to property and crops, soil erosion, workers misbehavior, defilement/child abuse, and others.

Table 15: Types of grievances expected and recommended measures to address them

Grievance	Redress
A. **Damage to house walls and roofs due to blasting, vibration, and heavy vehicle movement** B. **Damage to access roads, culverts, and canals** C. **Temporary evacuation of residents** D. **Obstructions to access roads**	**A.** Providing alternate land for house construction **B.** Referral to conduct vibration tests and/or post-crack surveys **C.** Conducting assessments on the status of damaged houses, e.g., quality standards and monitoring the situation
A. **Damage to private property** B. **Decrease in water level and water pollution in private and public wells due to blasting** C. **Damage to crops and business premises, with concomitant loss of income**	**A.** Issuing assurance letters to PAPs (by contractors and/or road agencies for reconstruction or repair after completing the road construction work) **B.** Providing alternate access roads **C.** Getting relevant agencies to construct or improve drainage systems, roads, culverts, and wells Getting contractors to pay compensation for damage and loss of livelihood
A. **Waterlogging and flooding** B. **Dust, noise, and air pollution** C. **Dumping of solid wastes around houses** D. **Threats to statues and monuments** E. **Requests for alternative land or compensation for remaining land (as it can no longer be used as a separate entity)** F. **Disputes related to ownership rights** G. **Lack of clarity concerning boundary marks on acquired land**	**A.** Referral to technical experts to conduct necessary assessments of damage to property, livelihood, and environment, e.g., engineers, environmental officers **B.** Referral to relevant agencies to take appropriate action, e.g., contractors, road agencies **C.** Getting contractors to spray adequate water to control dust emissions • Contractors to undertake cleanup or remedy their omissions and impacts on community Compensate for any land-take by MOWE/District or Contractor (auxiliary facilities)

The Project Safeguards Staff, FPOs, Districts DEOs & CDOs, and Contractors shall be responsible for monitoring impacts based on the GRM. Duties would include:

a. Maintaining a database of all complaints related to environmental and social issues and forwarding them to the Supervision Consultants;
b. Assisting the PAPs to submit their environment-related complaints directly to the contractor;
c. Maintaining a list of PAPs who are directly or indirectly affected by construction, operations, and maintenance work, and monitoring the implementation of mitigation plans;
d. Consulting the affected PAPs and communities and participating in grievance resolution

processes; and

e. Ensuring that compensation for PAPs complies with the entitlement matrix in respect of resettlement and land acquisition (refer to IWMDP RPF).

7 INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

The Project will be implemented by two agencies - MoWE and NWSC - under the oversight of the Water Sector and Environment Sector Working Groups and relevant governing bodies (e.g. NWSC Board of Directors); and in support of de-concentrated regional entities (WMZs, WSDFs), local governments and their partners (e.g. District Officers, private sector operators) to deliver outputs. To facilitate integration within the sector, MOU/MOUs outlining joint responsibilities will be signed between the implementing agencies and entities responsible for specific activities (e.g. Districts).

As the GoU is currently implementing a SWAp, the Project's institutional and implementation arrangements have been designed to align with existing structures, build on the comparative advantage and experience of the various departments in the Ministry, enhance coordination and synergy across the different departments, and implement the principles of integrated water resources management across the water and environment sectors from the central to the local levels. Day-to-day implementation will be carried out by MoWE and NWSC.

The Project's primary stakeholders are the: a) MoWE through which the project will be implemented in coordination with its relevant departments (e.g. DWRM, DWD, DEA); b) NWSC which will play a key role in large urban investment activities; iii) local governments who will work with MoWE to develop catchment management plans and improve the framework for decentralized management of water resources; as well as to engage private operators to operate and manage small town water supplies; iv) and local communities and consumers who will participate in catchment based planning, and benefit from the outputs and outcomes of the project. Other stakeholders include the members (Government and Development Partners) of the Water and Environment Sector Working Group, which is responsible for making important sector planning and budget decisions, vetting new project proposals, and advocating for policy and institutional reforms. The Bank has agreed to collaborate in this effort with Working Group partners including Danida and AfDB.

The MOWE and NWSC currently have adequate Environmental and Social Safeguards staffing, which is summarized in the table below. Respective host District Local Governments and Municipalities have District Environment Officers and Community Development Officers who will be involved in project monitoring and supervision.

Organization	Department	Environmental Specialist (No.)	Social Specialists (No.)
Ministry of Water and Environment - DWD	Urban Water Supply and Sanitation Department (including Decentralized Staff)	14	22
	Rural Water Supply and Sanitation Department	12	15
	Water for Production Department	4	2
	Water Utility and Regulation		

Ministry of Water and Environment - DEA	Wetlands Management Department	20	1
Ministry of Water and Environment - DWRM	Department of water Resources Planning and Regulation (Water Management Zones)	Albert – 1 Upper Nile – 1 Victoria - 2 TOTAL - 4	Albert – 3 Kyoga – 2 Victoria – 2 Upper Nile – 3 TOTAL - 10
National Water and Sewerage		5	2
		59	52
Note: All Contractors and Consultants hire Environmental, Social and Health and Safety Officers on site for implementation of Environmental, Social and Health and Safety activities. This Commitment shall be included in Bidding Documents and Contracts.			

7.1 ROLES AND RESPONSIBILITIES IN THE ESMF IMPLEMENTATION

The MoWE and NSWC are the implementing agencies for the WMDP and have the responsibility for setting national policies and standards, managing and regulating water resources and determining priorities for water development and management. The MoWE will coordinate with NEMA on ensuring that environmental and social issues are addressed effectively throughout the lifecycle of the Project.

NEMA was established by an Act of Parliament (NEA) as the principal agency responsible for the management of the environment and was created as a result of the National Environmental Action Plan (NEAP) of 1994. Implementation of the different environmental issues is done through the relevant government institutions (Lead Agencies) within whose mandate the respective issues lie. The role of NEMA is to coordinate the input by all the different lead agencies and ensure compliance with the National Environmental Policy and Law.

The following diagram presents an overview of the MOWE with Directorates, Departments, and linkages to committees and parastatal agencies under the Ministry.

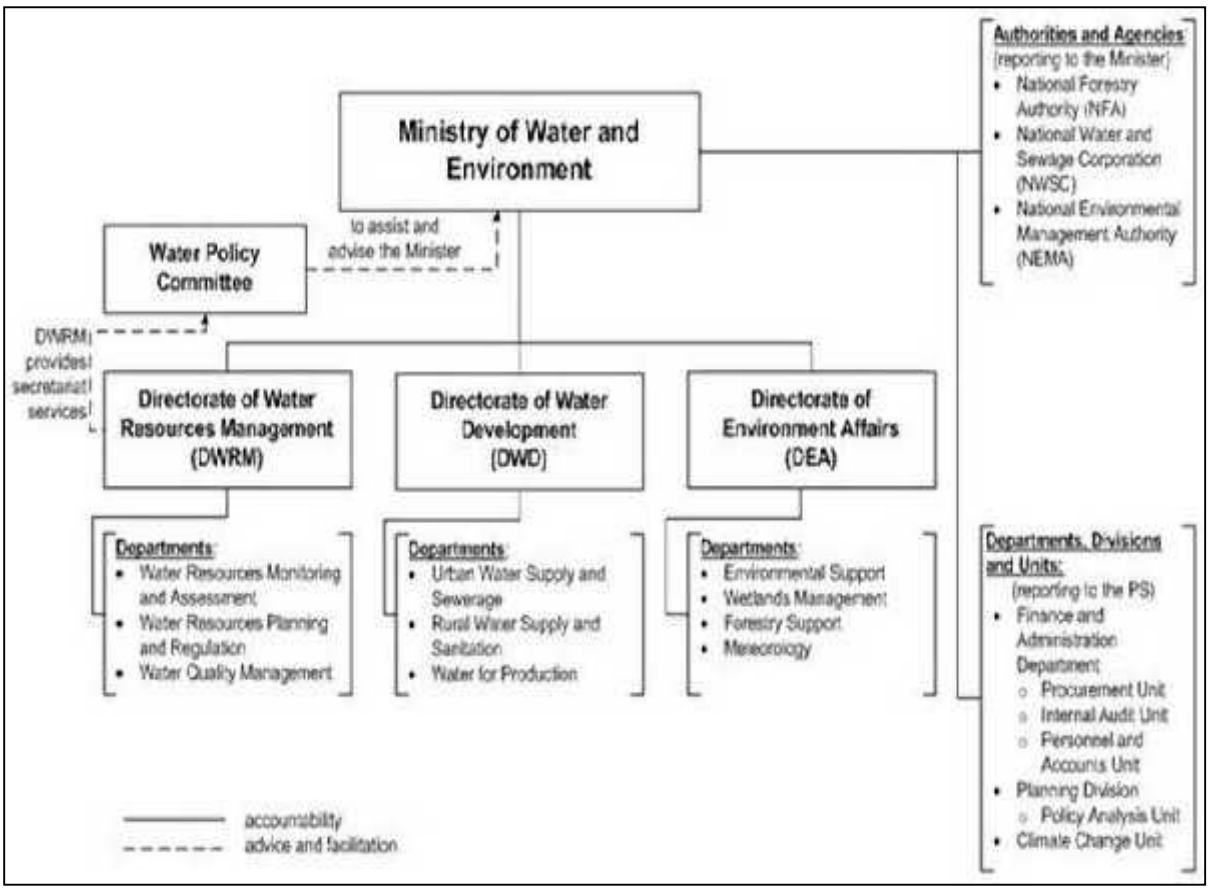

Figure 10: Overview of MOWE with Directorates and Departments

Implementation of the ESMF will involve multiple institutions at all levels as seen in Table 23.

Table 16: Institutional roles and responsibilities for environmental management under the WMDP

Ministries and Departments	Mandates/Responsibilities
The Ministry of Finance, Planning and Economic Development (MoFPED)	The Ministry of Finance, Planning and Economic Development (MoFPED), mobilizes funds, allocates them to sectors and coordinates development partner inputs. MoFPED reviews sector plans as a basis for allocation and release of funds, and reports on compliance with sector and national objectives.
The Ministry of Water and Environment (MoWE)	The Ministry of Water and Environment (MoWE) has the overall mission: to promote and ensure the rational and sustainable utilization, development and effective management of water and environment resources for socio-economic development of the country. The ministry has three directorates: Directorate of Water Resources Management (DWRM), Directorate of Water Development (DWD) and the Directorate of Environmental Affairs (DEA).
Ministry of Local Government-MoLG	The Ministry is mandated to carry out a number of responsibilities in the Local Government Act as follows: to inspect, monitor, and where

	necessary offer technical advice/assistance, support supervision and training to all Local Governments; to coordinate and advise Local Governments for purposes of harmonization and advocacy; to act a Liaison/Linkage Ministry with respect to other Central Government Ministries and Departments, Parastatals, Private Sector, Regional and International Organizations; and to research, analyze, develop and formulate national policies on all taxes, fees, levies, rates for Local Governments.
STATUTORY AGENCIES	
National Environment Management Authority (NEMA)	NEMA retains its mandatory role of coordination, supervision and monitoring environmental issues. As for the implementation of the ESIA process, NEMA's role will involve coordinating the review of the ESIAs of the planned interventions with relevant line agencies. Other lead agencies that would participate in the review are the Ministry of Local Government and local governments. Specifically, the Environmental Monitoring and Compliance Department of NEMA is responsible for the review and approval of ESIAs, post-implementation audits and monitoring of approved projects. Although project sponsors have a responsibility for monitoring their own activities, NEMA carries out its own monitoring largely through District Environmental Officers and environmental inspectors at NEMA's head office/ Lead Agencies.
Uganda Wildlife Authority (UWA)	UWA in this case will have the role of monitoring the implementation of the ESMPs to specifically ensure that the provisions for mitigating the impacts across protected areas are implemented by the project.
National Forestry Authority (NFA)	NFA will closely monitor the activities of the project across forested areas.
National Water and Sewerage Corporation (NWSC)	NWSC's activities are aimed at expanding service coverage, improving efficiency in service delivery and increasing labour productivity. Key among its objectives is to plough back generated surpluses for infrastructure improvements and new investments.
DIRECTORATES	
Directorate of Environmental Affairs (DEA)	The DEA is responsible for environmental policy, regulation, coordination, inspection, supervision and monitoring of the environment and natural resources as well as the restoration of degraded ecosystems and mitigating and adapting to climate change.

Directorate of Water Development (DWD)	The DWD is responsible for providing overall technical oversight for the planning, implementation and supervision of the delivery of urban and rural water and sanitation services across the country, including water for production. DWD is responsible for regulation of provision of water supply and sanitation and the provision of capacity development and other support services to Local Governments, Private Operators and other service providers.
Directorate of Water Resources Management (DWRM)	The DWRM is responsible for developing and maintaining national water laws, policies and regulations; managing, monitoring and regulation of water resources through issuing water use, abstraction and wastewater discharge permits; Integrated Water Resources Management (IWRM) activities; coordinating Uganda's participation in joint management of transboundary waters resources and peaceful cooperation with Nile Basin riparian countries.
DISTRICTS	
District Environment Officer (DEO)	The functions of the District Environment Officer are amongst others, advise the district Environment committee on all matters relating to the environment amongst others.
District Environmental Committees	The functions of the District Environment Committees include: to act as a forum for community members to discuss and recommend environmental policies and bye laws to the District Council and advise the District Technical Planning Committee, the District Council and NEMA on environmental management issues in the district.
MUNICIPAL	
Municipal Environmental Officer	The functions of a Municipal Environment Officer include advising the urban Environment committee on all matters relating to the environment and liaison with NEMA on all matters relating to the environment.
Development Partners	The country has considerable **Development Partner** support for the development budget. These include ADB, Austria, BADEA, DANIDA, EU, France, Germany, JICA, UNICEF and Sida. Development Partners provide financial and technical support to the Environment and Water sector, including participating in monitoring implementation of various undertakings they support.
Private Sector	**Private Sector firms** undertake design and construction in the sector under contract to local and central governments. Hired Consultants and Contractors shall be required to have among other personnel qualified Environmental and Social Development Specialists. Private hand pump mechanics and scheme attendants provide maintenance services to water users in rural and peri-urban areas. Private operators manage piped water services in small towns and rural growth centers.
NGOs	The **NGOs** working in the sector are coordinated at the national level through **UWASNET**, Uganda Water and Sanitation NGO Network an

	umbrella organization, which has been largely funded by sector development partners through MoWE.
Local Environmental Committees	Principally, the Local Environment Committees are to mobilize people, through self-help projects to conserve the environment, restore the degraded environment and improve the natural environment, and to monitor and report on any event or activity, which has or is likely to have a significant impact on the environment.
Water Management at District Level	They receive funding from the center in the form of a conditional grant and can also mobilize additional local resources for water and sanitation programs. Local Governments, in consultation with MoWE appoint and manage private operators for urban piped water schemes that are outside the jurisdiction of NWSC.
COMMUNITY	
Beneficiary Communities	The Communities are responsible for demanding, planning, contributing a cash contribution to capital cost, and operating and maintaining rural water supply and sanitation facilities. A water user committee (WUC), which is sometimes referred to as a Water and Sanitation Committee (WSC) should ideally be established at each water point. Being the primary beneficiaries of the project, the community will be made to participate fully in all aspects of the program including project identification, preparation, implementation, operation and maintenance.

ROLES OF THE CONTRACTORS DURING PROJECT IMPLEMENTATION

All contractors hired to undertake project civil works shall be required to develop a Contractor's ESMP which will include among others the following aspects: the initial sub-project ESIA approved by both NEMA and World Bank, Health and Safety Management Plan, Traffic Management Plan, Waste Management Plan, Construction Camp and Equipment Yard Management Plan, Labour Force Management Plan which shall also include Code of Conduct for Workers, Construction Materials Acquisition Due Diligence Procedure, etc.

The Contractors shall hire the following key staff to undertake project implementation: Project Manager, Environmental Specialist, Sociologist, Health and Safety Officer. Their roles in terms of implementation of Environmental and Social Safeguard requirements among others shall include the following:

PROJECT MANAGER

- The Contractor shall employ a Project Manager who shall be charged with ultimate responsibility for implementation of C-ESMP and will therefore ensure that resources are duly provided.
- The Project Manager shall be responsible and ensure staff are adequately inducted and trained at site regarding environmental and social management including emergency procedures. The same applies to sub-contractors.
- The overall overseer on the contractors' side for the implementation of CESMP.

CONTRACTORS ENVIRONMENTAL, SOCIAL AND HEALTH & SAFETY SPECIALISTS/OFFICERS

The site environmental and social specialists shall have the following responsibilities:

a. Develop, implement and review environmental management systems and plans;
b. Develop other standalone documents (e.g. Waste Management Plan, Health and Safety Plan, Traffic Management Plan, Emergency Response Plan, etc.);
c. Advise the Project Manager on how to implement or address instructions issued by the Resident Engineer;
d. Provide leadership to ensure all contractor's staff comply with CESMP;
e. Works with other Contractor's staff to develop Site Specific method statements to address environmental and social aspects;
f. Notify the Engineers' Environmental and Social Specialists of any non-compliance and seek guidance on achievement of compliance;
g. Work closely with service providers to ensure that issues of, employment act (2006) compliance, HIV/AIDS (including child protection) and gender sensitivity are managed in a manner that meets national requirements and contract specifications;
h. Responsible for monitoring and reporting major defects and non-compliances and arranging for appropriate corrective actions;
i. Initiate and coordinate monitoring and auditing and prepare input into the Contractor's Monthly Progress Reports;
j. Review work schedule with respect to environmental management and monitoring;
k. Monitor fuel delivery procedures regularly and check all equipment on site on a regular basis;
l. Train contractor's staff in environmental objectives and procedures.
m. Supervise the implementation of the Environmental Management and Monitoring Plan and all the other required plans;
n. Address all environmental and social aspects attributed to the road works;
o. Ensure the site is kept tidy and litter is placed in bins;
p. Act in an environmentally and socially responsible manner always to reflect the contractor's commitment and responsibility on environmental and social practices.

7.2 IMPLEMENTTAION AND INSTITUTIONAL CAPACITY FOR SAFEGUARD MANAGEMENT IN THE PROJECT

7.2.1 IMPLEMENTATION ARRANGEMENT

The Project will be implemented by two implementing agencies namely: Ministry of Water and Environment (MoWE) and National Water & Sewerage Corporation (NWSC). The Project will utilize similar implementation arrangements set up for the ongoing Water Management Development Project (WMDP) (P123204). The MoWE has satisfactorily implemented water and sanitation (WSS) and water resources management projects with the current WMDP, and therefore, has accumulated extensive experience with respect to implementation of Bank safeguards procedures. In addition, the Ministry is implementing LVEMP II under the Bank financing which has also built its capacity regarding safeguards implementation.

An assessment of the capacity of IAs revealed acceptable and satisfactory levels of technical know-how within these IAs for planning, design and implementation of WSS and WRM investments and technical assistance. There are four qualified safeguards staff in each implementing agency responsible for day to day implementation and supervision of safeguards requirements for the Project. There is also a Safeguard Coordinator who will provide technical advice, consolidate the progress reports from the project safeguards specialists, monitor the implementation of the ESMF, RPF and specific safeguards documents, and liaise with the WMZ and other stakeholders (national, regional and district) on environmental and social issues related to the Project. The assessment indicates that there are dedicated and qualified staff to carry out safeguards activities. The proposed safeguards team will manage both the current WMDP and IWMDP for an estimated period of 6 months. The assessment concluded that there is not a need to add additional safeguards staffing at MOWE and NWSC given that the WMDP is closing in December 2018 and a projected low work load in 2018 for IWMDP given effectiveness period and planning phase. However, the Bank team in coordination with the IAs will monitor and assess the need of additional staff during implementation support missions.

However, the capacities of those experts will be enhanced through tailored trainings based needs for eefective delivery of safegaurds and at least two training events per year will be conducted. The Project will support the hiring of key personnel when needed, training and preparation of additional studies if required. Construction supervisors, consultants and NGOs will work as a supporting structure to ensure safeguards and social related activities are implemented as envisioned. In addition, the Bank will ensure that adequate budget is allocated to implement all proposed safeguards measures and adequate capacity building is included. The capacity assessment will be completed before appraisal.

7.2.2 CAPACITY BUILDING, TRAINING AND TECHNICAL ASSISTANCE

The goal of the IWMDP is to the maximum extent possible utilize existing institutional structures and capacity within the MOWE and NWSC to implement the Project. To successfully implement the guidelines and recommendations in the ESMF, it is important to ensure that target groups and stakeholders who play a role in implementing the ESMF are provided with the appropriate and continuous Environmental and Social Safeguards capacity development.

7.3 INSTITUTIONAL STRENGTHENING

As indicated above, additional safeguards specialists are not required now. However, the Bank team in coordination with the IAs will monitor and assess the need of additional staff during implementation support missions. In the case of additional safeguards specialists needed, generic Terms of reference for the Environmental and Social Safeguards staff are outlined in Box 9.1 and proposed budget for the appointment of Environmental Specialist and Social Development Specialist is included in Section 10.

7.3.1 CAPACITY BUILDING AND TRAINING

Roles and responsibility of Safeguards Staff – Generic TORs and to be customized to individual staff. The main role of the Environmental Coordinator (EC)/Environmental Specialist (ES)/Social

Development Specialist (SDS) are to provide technical advice on environmental and social management and mitigation planning and ensure that the ESMF is fully implemented. The EC will be designated from one of the qualified mainstream Ministry Staff, and report directly to the Project Coordinator at MOWE responsible for overall project implementation. The Safeguards Staff (EC, ES, SDS) should hold a degree in environmental science and/or related discipline (e.g. Social Science), have a minimum of 5 years' experience working with similar projects, and be highly familiar with Ugandan environmental laws and regulations.

7.3.1.1 TASKS

a. Liaise with NEMA, MGLSD, MLHUD on a regular basis;
b. Ensure ESIAs/ESMPs are carried out, as required, to meet Ugandan and World Bank requirements;
c. Commission an independent consulting firm to carry out an environmental performance audit of the IWMDP periodically (12-36 months) or on an annual basis for Component 2 projects;
d. Provide technical advice to regions and districts on all technical issues related to natural resources and environmental management. These issues will relate to impacts on surface water, groundwater, agricultural resources and vegetation, sourcing of materials used in construction, human health, ecology and protected areas, land and soil degradation;
e. Provide specific technical advice on mitigation measures for water supply and sanitation investments and catchment protection;
f. Monitor the implementation of safeguard management plans (ESIAs/ESMPs, RAPs, etc) and prepare monthly and quarterly monitoring reports;
g. Raise awareness and proactively create demand for this technical advice among District/Municipal Officers; and
h. Lead the delivery of capacity-building programs for District/Municipal Officers and communities/affected persons.

is recommended that part of the funds allocated to Component 4 of the IWMDP be used to provide the technical assistance to support the capacity needs of the implementing agencies to apply the ESMF tools and requirements. Funding under this component would be used to undertake workshops, trainings and ESMF monitoring and supervision which are needed to ensure effective implementation of the ESMF requirements throughout the life of the Project.

It is clear, as emphasized in both the Ugandan Country Environmental Analysis (2011) and supporting government and donor reports and noted during the consultations that were carried out in the 8 districts for the project, that there is need for capacity building in environmental management at the district and sub-district levels and refresher training at National level as well (MoWE, NWSC, NEMA, MoGLSD, MoLHUD). The weakness in managing environmental needs is compounded by a lack of funding, equipment and qualified staff despite the plentiful donor support that is available. It is therefore recommended that these be taken up by the project during implementation.

7.3.1.2 REGIONAL AND DISTRICT LEVEL TRAINING

Tables 26 and 27 outline recommended trainings and workshops to support capacity needs and institutional strengthening under the IWMDP ESMF. It is recommended that these trainings and workshops be prepared and undertaken by a local Consultant with relevant experience in the

proposed topics and highly familiar with the water sector and proposed WMDP catchment areas. The World Bank Safeguards staff may also be used to support development of safeguards capacity.

Table 17: Proposed WMDP Training and Workshops

Type	Topics	Intended Audience
Courses	Environmental and Social Assessments Environmental Information Systems/ Water Catchment Planning Resettlement & Land Acquisition Community Consultation/Participatory Planning Water quality management, pollution, surface and groundwater monitoring	National: MOWE, NWSC, NEMA, MGLSD, MLHUD, MAAIF Regional: WMZs, WSDFs District: DEOs, CDOs, DWOs,
Study Tours	Developing Catchment Plans for "Hot spot" Catchments (2 – 3 samples per WMZ)	DLGs, DWRMs and DWDs
Community Training	Technical (e.g. Participatory Water Resource Planning, Development of Catchment Plans, Sustainable Livelihood Planning)	Community Groups (for Catchment Plan investments)

It is also recommended that during the first year of the project, a 2-3-day workshop is held in Kampala targeting the MOWE, NWSC, NEMA, MGLSD, MLHUD, MAAIF and at least one workshop per WMZ targeting the regional groups. The workshop outlines as detailed below aims to provide attendees with the basic approach to implementing the guidelines provided in the ESMF combined with the use of the appropriate tools, such as the screening form, ESMP template and ESMF Annual Reporting Form. Refresher courses should be held as needed during the course of the project lifecycle.

TABLE 18: PROPOSED TRAINING FORMAT FOR ESMF IMPLEMENTATION

Module	Duration
Day 1	
Introduction A. Objective of the ESMF B. Key stakeholders with a role in the ESMF C. Relevant legislative and regulatory acts and World Bank safeguard policies D. Structure and role of relevant governmental authorities and NGOs as relates to the WMDP	1
Day 2	
Summary of guidelines for the subprojects A. Screening B. Appraisal and approval C. Disclosure D. Annual Review E. Annual Reporting	0.5
A. Capacity building requirements	0.25

Module	Duration
B. Budgeting for the implementation of EMPs, RAPs and other safeguard management plans	0.25
Total	**2 days**

7.3.2 TRAINING OF CONTRACTORS AND SUPERVISION CONSULTANTS

As part of best practice, and in order to comply with international standards for Occupational, Health and Safety (OHS), contractors and supervision consultants should be provided with awareness raising and environmental and OHS training on site. These should focus not only on the construction phase but also operational phase of the Project. The training will also cover some of the emerging safeguards areas of specific interest, including but not limited to: Development & Implementation of Contractor's ESMP, Health and Safety Management (both Occupational and Community Safety), management and use of Auxiliary Facilities (Labour Camps, Equipment Storage Yard), Construction materials acquisition – environmental and social due diligence, Labour influx management and use of Code of Conduct, Child abuse/defilement, Grievance Redress Management, and so on.

A proposed format for a 1-day training is provided in the following Table 26.

Table 19: Awareness raising and training for civil work contractors and supervision consultants

Topic	Input/Days
Awareness raising A. Environmental awareness and the importance of effective mitigation **B.** Practice mitigation measures and environmentally sound construction techniques C. Compliance with local legislation on OHS, ESIA and ESMP requirements	0.5 day
Technical training a. Development/Implementation & scope of Contractors' ESMPs b. Management of Environmental and Social Impacts of Construction. c. Environmental, Health & Safety Management onsite d. Acquisition & management of auxiliary facilities and construction materials sites e. Labour influx management and child abuse f. Grievance Redress Mechanism, Process and Committees g. Implementation of the ESMP (contract clauses) h. Monitoring and Reporting of ESMPs (and RAPs) i. Preparation of budgets	1.5 days
Total	**2 days**

7.4 ESMF IMPLEMENTATION BUDGET

It is estimated that the implementation of the ESMF including the management of associated environmental and social aspects of the project, training and capacity building will cost approximately **$2,500,000**. A 0.96% of total project amount has been recommended as budget allocation to environmental and social management. The breakdown is as follows:

a. Component 1: Small Towns and Rural Water Supply and Sanitation ($1,600,000)
b. Component 2*:* Urban Water Supply and Sanitation ($600,000)
c. Component 3: Water Resources Planning and Management ($200,000)
d. Component 4*:* Institutional Strengthening ($100,000)

The provisions proposed under Component 1 and 2 accounts for the majority of the costs in line with the proposed Project budget. The costs of preparing and implementing the safeguards aspects of the project are estimates as the size, type and location of the subprojects are not fully determined at this stage. It is not expected that there will be any significant land acquisition as part of the project; however, some financial provision has been made under contingencies in case there is any need for technical engagement, including awareness campaigns, communication and grievance redress. If there is a need for land acquisition, RAPs will be prepared and the project will consider any further re-allocation of budgets as needed when the project is reviewed at supervision and mid-term stages. ***Land acquisition and any associated compensation, shall be the responsibility of Government of Uganda, in accordance with provisions of OP 4.12.*** This is described in more detail in the IWMDP RPF

The costs outlined below may vary depending on when and how the ESMF implementation takes place; therefore, it can be expected that the proposed ESMF budget may increase or decrease depending on the workplan agreed upon.

Table 20: Budget Estimate for the Implementation of the ESMF

Recommendation	Responsible authority	Schedule	Estimated cost
Development of Sub-Projects Investments, Environmental and Social Assessment, Implementation, Monitoring and Reporting			
Environmental Screening and Preparation of ESIAs, ESMPs and related safeguard management plans for investments funded from the investment pool by MOWE (Components 1 & 2)	MOWE & NWSC	FY 2018 - 2023	$412,000
Implementation, monitoring and supervision of ESIAs, ESMPs and related safeguard management plans for investments funded from the investment pool by MOWE & NWSC	MOWE & NWSC		$600,000
Institutional Strengthening and Safeguards Capacity Development			
Environmental & Social Specialists for the IWMDP: Responsible for Project E&S implementation & Mgt	World Bank / MOWE	FY 2019 – 2023	$288,000

2-day workshops on ESMF implementation to MOWE, WMDP Focal Point Officers, NWSC, WSDFs, WMZs, Districts (DEOs, DWDs, and DWRM); training for contractors and supervision consultants. Annual Refresher trainings on ESMF implementation	DEA	FY 2019 – 2023 Annually	$50,000 $100,000
One day trainings on topics such as EIAs, Environmental Information Systems/ Water Catchment Planning, Community Consultation/Participatory Planning, and Water Quality Management to DWDs and DWRMs	DEA	Completed by end of FY 2019 with 4 annual refreshers	$50,000 $100,000
TOTAL			**$2,600,000**

8 CONCLUSIONS AND RECOMMENDATIONS

The proposed project once implemented shall have more of positive benefits to the host communities and surrounding environment. The project impacts can easily be identified, medium to short term, site-specific, limited in scope, and readily mitigated using available technologies, and best construction practices. It also clear that, some development aspects of the project that would have large negative impacts (water abstraction, pump house construction in Karuma as well as water treatment works) will be financed by KfW with the World Bank financing piping and distribution that is planned to be constructed within the road reserve along the road, which makes its impacts to be low key hence, its further placement as a category B type. The project EA Category is B, given the likely overall low impact of the project activities. The project will require establishment of clear implementation arrangements, and budget provision to ensure actual implementation of the environmental and social aspects, without which, the positive and expected benefits of the project will not be realized.

Specific measures shall be implemented by Contractors, and such measures shall form part of the Contractors' ESMPs. Socioeconomic impacts such as those associated to involuntary resettlement and compensation can be easily dealt with through a full RAP – relevant guidance will be available on the RPF prepared in parallel to this ESMF.

All project components shall be subjected to following the EA process and guidance set out in this ESMF, and will include project aspects that are assumed to be managed by the Contractor and not originally considered in the initial project ESIAs. These aspects tend to pose most challenges because of the Client's tendency to leave such to Contractors. For this project, the Client is encouraged to take interest and supervise the Contractors during acquisition and operation of auxiliary facilities.

9 REFERENCES

Author & Year Title	Title
The World Bank	World Bank Safeguard Policies. Retrieved May 25, 2015, from Environnemental and Social Safeguard Policies
Project Appraisal Document	
Project ISDS	
MOWE - Project Concept Paper	
World Bank – Project Concept Note	
TORs	
IFC. (2006).	Performance Standard 4 Community Health, Safety and Security. Washington, D.C: World Bank Group.
IFC. (2012).	IFC Performance Standards on Environmental and Social Sustainability. Washington, D. C: World Bank Group.

10 ANNEXES

10.1 ANNEX 01: STAKEHOLDER CONSULTATIONS (LIST, ISSUES, AND PHOTOS)

Date of the Meeting		15th January 2018
Meeting Proceedings Recorded by		Mugenyi Francis
Subject of the Meeting	Meeting with Technical Staff of Gulu district, CAO, DWO, DEO, DCDO,	
Item	**Summary of proceedings**	
1.	**Introduction**	
	The team leader started explained the proposed project and purpose of the consultation exercise and how findings would be utilised in preparation ESMF and RPF	
2.	**Issues discussed**	
	What are the current Water sources used by communities in Gulu district? **DWO –** Rural Communities obtain water from mainly Boreholes, protected springs, rivers and streams. The urban communities like Gulu town, Unyama have piped water schemes, protected springs and boreholes but during the dry season, people also collect water from the streams and rivers. Gulu district has six piped water schemes some of which are located in areas that were once IDP camps.	
	What is current water coverage in Gulu? The water coverage is currently at 72% which is below the National level	
	What is the average distance between communities and water sources? The varies between seasons; during the wet season its about 1km but during the dry season people walk up to 5km in search of water sources.	
	What are the main threats to water sources/ supply in Gulu? Climate change; the area is now experiencing a long dry spell that runs from October to February which has left Most water sources have been encroached on by the community especially the one supplying Oyitino dam has been serious affected upstream activities of stone quarrying resulting in siltation and reduction in water levels. Rampant deforestation which directly affects the rain seasons in Gulu	
	Who is in-charge of managing environmental safeguards? The Natural resources department headed by Natural Resources officer takes lead in implementing environmental safeguards. The district has District Environment Officer, the sub-county has designated Environment Focal Person and at the village level there are Environment Protection Village Committees.	

Date of the Meeting		15th January 2018
Meeting Proceedings Recorded by		Mugenyi Francis
Subject of the Meeting	Meeting with Technical Staff of Gulu district, CAO, DWO, DEO, DCDO,	
Item	**Summary of proceedings**	
	Who manages social issues/safeguards including grievances? The District Senior Community Development Officer assisted by the sub county community development officers. Each of the sub counties in Gulu district has a community Development Officer. These carry out supervision and monitoring of social safeguards. Trainings on safeguards have been conducted and they have full technical skills and knowledge to manage social issues including grievances and gender-based conflicts.	
	What are some of the interventions done by the district to protect water sources? Enforcement of wetland laws but this is still a challenge. Sensitization of communities on the need to protect water sources. Encouraging communities to plant trees by providing trees seedlings especially in schools. Establishment of water user committees at village level to manage water sources	
	What are some of the challenges faced by the district i	
	Are there any disputes over ownership of the land? There are no major land disputes	
	How is land accessed in the community? The land is accessed through cultural norms	
	What are the common types of land tenure in the host community? Customary land ownership	
	Average quantity of water available per person/day 12 litres/Person/Day which is the sphere standard against the National Standard of 20 litres/Person/Day.	
	Communal latrine coverage (host community) Stands at 74.9%	
	Sanitation **What is the latrine coverage in Gulu district?** Currently sanitation and hygiene is at 58% in rural areas of Gulu and at approx. 62% in the urban centers.	
	What interventions have been put in place by the district to improve sanitation? The CDOs and Health staff are implementing the Home Improvement Campaigns and the Community led total sanitation. Through this program Health Clubs have been formed in schools and health Centres to promote sanitation and hygiene. The target group here are the school going children and youth, these are easy to train and can easily promote sanitation activities in their homesteads. The program has helped to improve latrine coverage and hygiene from around 30% to 58% in rural areas of Gulu.	

Figure 10: Consultation with Gulu district Technical staff

ATTENDANCE LIST

Project Name: **Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Integrated Water Management Development Project (IWMDP)**

Location: Gulu A.O **Date:** 15/01/18

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12	Kato Milton	CAO	0782702223	milton.kato@yahoo.com	
13	Dr. Aliro Tonny	SVO	0772859189	drogun@gmail.com	

Date of Meeting	22nd January 2018
Place of Meeting	NEMA House, Jinja Road
Meeting proceedings recorded by	Muheki Mariam
Subject of the meeting	Consultation Meeting with Mr. Waiswa Arnold, Director Environment Compliance and Monitoring, NEMA

Item	Summary of the Proceedings
1	**Introduction**
	The Team Leader started by explaining the assignment and indicated how catchment protection is vital for water supply and human survival.
2	**Issues Discussed**
	a) How should the project manage issues of environment assessment during implementation? Mr. Waiswa explained that projects that are likely to cause significant impacts to the environment are required to submit their project briefs to the Authority that shall in-turn forward these to the appropriate sectoral Lead Agencies with responsibility for management of a specific environmental resource or component, so that these can be screened to determine the level of EIA required, and the developer advised accordingly. It is also important to involve the local leadership from the start of the project so as to understand the key concerns of the stakeholders. It is important to obtain the required permits from NEMA for activities to be carried out in the wetlands especially for the transmission pipelines traversing wetlands. **b) How does NEMA monitor compliance of environmental safeguards during project implementation?** All district environment officers are certified NEMA environmental supervisors, therefore take the lead in monitoring compliance of mitigation measures in their respective districts. **c) Should Uganda Wildlife Authority be consulted for sub-projects being implemented in protected areas?** UWA should be consulted because management and conservation of wildlife and biodiversity in Uganda is under their mandate and since some of the sub-projects traverse protected areas, then all issues and concerns of UWA should be incorporated into the project implementation.

	d) Impacts of water abstraction on environment Groundwater overexploitation not only results in aquifer depletion and water-quality degradation, but also impacts the ecological integrity of streams and wetlands and results in significant losses of habitat and biodiversity. Therefore, it is necessary for the project implementers to recognize that the water resources are finite and vulnerable, and find ways to reconcile the demands of human development with the tolerance of nature.

Date of Meeting	15th January 2018
Place of Meeting	Gulu Municipal Council Offices
Meeting proceedings recorded by	Mugenyi Francis
Subject of the meeting	Consultation Meeting with Gulu Municipal Technical Staff (Health Inspector, Asst. Town Clerk, CDO, Environment Officer)

Item	**Summary of the Proceedings**
1	**Introduction**
	The Team started by explaining the project components and its intended beneficiaries.
2	**Issues Discussed**
	a) What are the main water sources in Gulu Municipality? Gulu municipality has several sources of water from which the population obtains water including boreholes, shallow wells, protected streams and the piped water scheme managed by National Water Sewerage Corporation. The main source for the piped water scheme is the Oyitino dam in Bungatira sub-county **b) What is the latrine coverage in Gulu municipality?** The latrine coverage in Gulu MC is at 62% with a few household connected to Sewerage system. There are 7 public toilets within the municipality and 2 of them non-functional. **c) Are there any interventions by the municipality to increase toilet coverage within the municipality?** The municipality through the Health Inspector and environment officers at division are responsible for promoting sanitation within the municipality through mass awareness, enforcement of sanitation laws; but the resource envelope is still small. The municipality is also planning to acquire cesspool vehicles for draining public toilets and also purchase solid waste management equipment under KFW support. **d) What are activities are being undertaken by the municipality to protect water sources?** The main water source for Gulu MC is Oyitino dam which is managed by Nation water and sewerage corporation. The municipality does not have jurisdiction over the water source and the new policy requires all urban centers to have piped water. So the municipality is not allocated a budget for protection of water sources. **e) What are some of the threats to water sources in Gulu municipality?** Most areas in Gulu and the entire Northern Uganda are experiencing a change in climate with long dry seasons which has left many water sources dry. Encroachment on wetlands has also played a very big role especially the Oyitino dam wetland has been degraded by stone quarrying upstream. The upstream quarrying activities have created a number of large borrow pits which has resulted into less amounts of water reaching the dam and serious siltation of the dam. **f) Has the municipality ever engaged the stone quarrying community to explain to them the dangers of their activities on the dam?** The municipality together with the district have on several occasions engaged these communities but the problem is that stone quarrying is the only source of livelihood available for them and many of them were Internally Displaced Persons who relocated to this area after camps were decommissioned.

	Many of them are willing to leave the area but require alternative sources of income which the municipality cannot provide. If the project can provide a Resettlement scheme for this community to enable them return to their villages. **g) Who is responsible for environmental safeguards at the Municipality?** The municipality has an environment officer and at every division there is an Environment Focal Person (Health Inspector). These are responsible for implementing environment issues within the municipality. The environment Focal Persons report to the Environment Officer who also reports to the Municipal Engineer; this is because there is no environment department at Municipality level but its just a sector. **h) Does the municipality have capacity to manage environment safeguards?** The municipality has the Technical capacity to handle environmental safeguards; may be some staff like the division health inspectors require more training in these safeguards. The only challenge is in terms of logistics like transport; most technical staff need transportation to effectively monitor projects and also reach out to the population of the municipality. **i) How should the project be implemented to benefit the intended communities?** The project implementers should include the municipality at all stages of the project including design, community sensitization and implementation. This will enable the urban community appreciate the project **j) Recommendations for the project** Provide more public toilets in all public places Need for transport logistics for division extension workers like Health inspectors NWSC should install more public water stand to meet the water demands of the communities.

Figure 11: Consultations with Gulu Municipal Technical Staff

ATTENDANCE LIST

Project Name: Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Integrated Water Management Development Project (IWMDP)

Location: Gulu MC **Date:** 15th/07/2018

Sr no	Name	Designation	Contact	Email	Signature
1.	Mukonyezi Evelyn	physical planner	0774157328	mukonyezi evelyn@gmail.com	
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8.					
9.					
10.					

Date of Meeting	15th January 2018
Place of Meeting	National Water and Sewerage Corporation, Gulu Offices
Meeting proceedings recorded by	Mugenyi Francis
Subject of the meeting	Consultation Meeting with National Water and Sewerage Corporation, Gulu branch

Item	Summary of the Proceedings
1	**Introduction**
	The Team started by explaining the project to the staff members in attendance so as the have a background on what was to be discussed
2	**Issues Discussed**
	a) What is the current Water demand in Gulu Municipality? Currently Gulu requires 10million litres of water per day but NWSC can supply only 5million litres. This is because the main source Oyitino dam water levels have drastically decreased due climate change and degradation of the wetland upstream. **You hinted that the demand is 10million litres, why it difficult for NWSC to supply the required amount?** The infrastructure was designed to supply 5million litres per day and also if NWSC pumps 10 million litres a day, Oyitino dam will dry up within a short period. **b) How many households are connected to the piped water in Gulu municipality?** Approximately 6000 households are connected and out of these only 7% are connected to the sewer system. **c) Who is in charge of environmental safeguards during project implementation in NWSC?** At the head office in Kampala, there is a projects department; this has a team of engineers, Social workers and environment specialists. The department supervises all projects undertaken by NWSC in different areas of the country and the environmental specialist handles all environmental issues. Also most big projects handled by NWSC, have a supervising Consultants with an environmental specialist to monitor and supervise environmental mitigations. **d) What criteria is followed by the community to get connected on the NWSC pipeline?** Water connections are demand driven, any individual in need of water writes to NWSC requesting to be connected, he/she pays a connection fee of about 150,000shs depending on the distance from the NWSC pipeline, For public stand pipes, the communities through their leaders write to NWSC requesting for the public taps. **e) How do you handle grievances from communities?** Aggrieved individuals/communities write to the area manager who in turn liaises with social workers of NWSC to handle the grievances. **f) What intervention has NWSC put in place to protect water sources in Gulu?** At Oyitino dam, trees were planted along the dam boundaries but only few survived due to the harsh weather conditions at the time. Currently Oyitino dam is being desilted **g) Challenges facing NWSC during implementation of projects?** Compensation, communities tend to hike land prices whenever there is a project being implemented in their area. Communities at times resist projects, especially those not connected on the NWSC grid always refuse pipes from passing through their land.

	Sometimes NWSC does not have funds to compensate communities where water transmission lines pass. **h) Recommendations for the IWRMD project** The project should help to expand the sewage system because the existing design is old and cannot meet the demand from the increasing population of the Municipality. Need to construct more lagoons in different areas of the Municipality because the current one cannot handle all the sewage due to the terrain of Gulu. Need for more pipe extensions to areas without piped water.

Figure 12: Consultation with Branch Manager NWSC (Mr. Nyeko David), Gulu Branch

ATTENDANCE LIST

Project Name: Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Integrated Water Management Development Project (IWMDP)

Location: NWSC GULU OFFICE **Date:** 15/01/2018

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3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Date of Meeting	16th January 2018
Place of Meeting	Oyam district Headquarters
Meeting proceedings recorded by	Mugenyi Francis
Subject of the meeting	Consultation Meeting with Environmental Officer, Oyam

Item	**Summary of the Proceedings**
1	**Introduction**
	The Team introduced the project background to the Environment Officer also explained the purpose of their visit.
2	**Issues Discussed**
	a) What is the main threats to catchment protection in Oyam district? Encroachment through settlement and agriculture on forest reserves and wetlands Poor farming methods along river and stream banks causing siltation of rivers and streams. Deforestation caused by charcoal burning Long spells of drought that has forced communities to encroach on welands. **Interventions by the district to increase catchment protection** The district has supported some sub-counties like Aber with tree seedlings to replant forest reserves. The district in partnership with NGOs is providing alternative sources of income to communities like Apiary to lure communities away from forest reserves and wetlands. **b) What can the project do to reduce degradation water sources in Oyam?** Carry out watershed management panning for the wetlands in Oyam Support climate change and adaptation interventions Need to support environment office with logistics for monitoring to reduce catchment degradation. Provision of water for production so that communities do not depend on rain fed agriculture. **c) Does the district have capacity to implement environmental safeguards?** The environmental officer and Forestry Officer plus a team of environmental focal persons have been provided in local government structure, the only problem is inadequate funding in terms of budget allocation. The Natural Resources department needs at least a motorcycle to enable staff to supervise and monitor projects which have impacts on the environment. **d) How do you handle grievances from communities?** The Local Government Structures for grievance resolution are in place. At the District, there is the District Technical Planning Committee, (consisting of the Chairman and his executives and entire area councilors) sub county level there is the Technical Planning Committee. There are area land committees clan heads and their structures that deal in grievance resolutions in the communities **e) Are they effective?** Yes, they are effective **f) How are grievances about land ownership handled?** These are handled by the Clan heads, sub county chiefs and the sub county Technical Planning Committee. These committees sit on monthly basis to review cases

Figure 13: Consultations with Kamdini sub-county leaders, Oyam district

Figure 14: Consultations with Kamdini sub-county technical staff

ATTENDANCE LIST

Project Name: Environment and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) for Integrated Water Management Development Project (IWMDP)

Location: Oyam District Office **Date:** 15/01/18

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7.	OKECH GEOFFREY	SAS Kamdini	0782282587		
8.	Bosco [illegible]-Atim	LCV Councillor Kamdini - Oyam	0772-625552		
9.	ACAR FIDELITY	H/I	0782438822		
10.	Opio Mario R	PIC	0788349118		

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12- AMENY ROBERT EPPAFR 0750705788

Date of Meeting	17th January 2018
Place of Meeting	Ruyonza sub-county headquarters
Meeting proceedings recorded by	Mugenyi Francis
Subject of the meeting	Consultation Meeting with Environmental Focal Person, CDO and Parish Chief of Ruyonza sub-county, Kyegegwa district)

Item	Summary of the Proceedings
1	**Introduction**
	The ESMF Team introduced the project background to the audience and explained the purpose of their visit to the sub-county.
2	**Issues Discussed**
	A) **What are the main water sources in the sub-county?** Water sources in the sub-county include boreholes, protected springs, wetlands, excavated water ponds and valley dams. **B) What are the major threats affecting water sources in the sub-county?** Unsustainable farming practices where communities are cutting down trees for crop cultivation, encroachment on wetlands like Katonga, prolonged drought, **C) What interventions has the sub-county put in place to protect water sources?** Sensitization of communities to stop encroaching on wetlands and forest reserves. Encouraging farmers to practices agroforestry as a way increasing tree cover in the area. Sub-county provides farmers with tree seedlings for planting in degraded areas. **D) Who is responsible for environmental issues in the sub-county?** The sub-county formed an environment committee of 9 members, these take lead in monitoring environmental issues in the sub-county. The committee reports to Environmental Focal person who reports to the sub-county chief. **E) How do you handle grievances from communities?** Communities report grievances to the Local councils and at times, they settled at that level. Others report to the sub-county where the grievances may be settled by mediation between the warring parties or cases may be referred to the district tribunals or courts of law. Sometimes community members report conflicts to the police. **F) What are main conflicts reported by communities to the sub-county?** Land conflicts, Gender based violence, Family and child neglect **G) How does the sub-county acquire land to implement projects?** In cases where land belongs to private individuals, the sub-county liaises with owner, value the land and then compensates. But for projects like roads the sub-county cannot compensate since it necessities a lot of funds, the communities are mobilized by their leaders and persuaded to offer land for free.

Figure 15: Consultation with the community of Ruyonza

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Project: ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK FOR IWRMD PROJECT

ATTENDANCE LIST

S/N	NAME	DESIGNATION	DISTRICT	SIGNATURE
1.	Alumsin D. Hillary	PAS	Kyegegwa	
2.	Eng. Christopher Katusabe	DWO	Kyegegwa	
3.	Binungi Agnes	HgSCDO/Gender	Kyegegwa	
4.	Nyakabwa Augustine	DPWO	Kyegegwa	
5.	Agaba George	Office Attendant	Ruyonza s/c	
6.	Mbabazi Grace	CDO	Ruyonza s/c	
7.	MASARA SAMUEL	Ruyonza s/c s/o	Ruyonza s/c	M. Samuel
8.	Kabajungu Nocline	AO(Agric office	Kyegegwa	
9.				
10.				

Date of Meeting	18th January 2018
Place of Meeting	CAO's Office, Buhweju district Headquarters
Meeting proceedings recorded by	Ssegawa Samuel
Subject of the meeting	Consultation Meeting with CAO, District Water Officer Buhweju district)

Item	Summary of the Proceedings
1	**Introduction**
	The ESMF Team introduced the project background to the audience and explained the purpose of their visit to the sub-county.
2	**Issues Discussed**
	A) What percentage of households in Buhweju have access to safe water? Access to safe water in Buhweju is at 54% below the National average and sanitation at 84%. The urban centers like Buhweju Town Council are connected to piped water scheme managed by NWSC including Kyenjogyera Gravity Flow Scheme. Most rural communities **B) What interventions has the district put in place to increase access to safe water?** The district is relying mainly on central government projects to provide safe water to its population. Due to the terrain of Buhweju, delivering water to the communities in the hills is quite costly whereas the district budget is still small. However, the district has been able to sink boreholes and shallow wells in low lying areas to enable communities' access safe water. **C) What interventions has the district put in place to protect water sources?** The district through the environmental officer and community development department sensitize the communities to plant more trees especially on slopes to prevent erosion and siltation of streams. The district also put a ban on cultivation near wetlands and most communities are adhering to this law. But due to the small budget allocations, monitoring is still low. D) **How do you handle environmental issues during project implementation in the district?** The district environment officer handles all issues of environment including screening, monitoring and supervision of Contractors at all projects implemented by the district. Also, sub-county environment focal persons plus environment committees help in mobilizing and sensitization of communities and monitoring contractors to ensure environmental sustainability. **E) Do you envisage any positive impacts of the project on communities?** The area where the project is to be implemented is very remote and most households relying on streams as water sources. The project will greatly increase access to safe water in the area and also help to reduce water borne diseases. **F) Who owns land at the proposed project?** The land is owned by private individuals and the district has already agreed with them to buy off the land at 8million shillings. Land conflicts, Gender based violence, Family and child neglect **G) How should the project be implemented to benefit target communities?** The district local government should be involved especially in monitoring Contractors to prevent shoddy work and sensitization of communities to own up the project.

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Project: ESMF & RPF FOR INTEGRATED WATER MANAGEMENT DEVELOPMENT PROJECT

ATTENDANCE LIST

S/N	NAME	DESIGNATION	DISTRICT	SIGNATURE
1.	KAHASHAYIA ERASMUS	A-CAO	BUHWEJU	[signature]
2.	MUGUNGOZI DAN	ADWO - MOB	BUHWEJU	[signature]
3.	MUTEGYEMBE ERICSON	Ado-BJU	BUHWEJU	[signature]
4.	MUTANDA FRANK. N.	Plumber BJU	BUHWEJU	[signature]
5.				
6.				
7.				
8.				
9.				
10.				

10.2 ANNEX 2: ESMF SCREENING FORM

Sub-project name:	
Subproject Location (include map/sketch):	(e.g. WMZ, District, etc).
Type of activity:	(e.g. new construction, rehabilitation, periodic maintenance)
Estimated Cost: (x)	
Proposed Date of Commencement of Work:	
Feasibility Study, Technical Drawing/Specifications Reviewed:	(circle answer): Yes No

This report is to be kept short and concise.

Site Selection

Physical data:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
Site area in ha	
Extension of or changes to existing alignment	
Any existing property to transfer to sub-project	
Any plans for new construction	

Table 21: Refer to project application for this information.

Issues	Site Sensitivity		
	Low	**Medium**	**High**
Natural habitats	No natural habitats present of any kind	No critical natural habitats; other natural habitats occur	Critical natural habitats present
Water quality and water resource availability and use	Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues	Medium intensity of water use; multiple water users; water quality issues are important	Intensive water use; multiple water users; potential for conflicts is high; water quality issues are important
Natural hazards vulnerability, floods, soil stability/ erosion	Flat terrain; no potential stability/erosion problems; no known volcanic/seismic/ flood risks	Medium slopes; some erosion potential; medium risks from volcanic/seismic/ flood/ hurricanes	Mountainous terrain; steep slopes; unstable soils; high erosion potential; volcanic, seismic or flood risks
Cultural property	No known or suspected cultural heritage sites	Suspected cultural heritage sites; known heritage sites in broader area of influence	Known heritage sites in project area
Involuntary resettlement	Low population density; dispersed population; legal tenure is well-defined; well-defined water rights	Medium population density; mixed ownership and land tenure; well-defined water rights	High population density; major towns and villages; low-income families and/or illegal ownership of land; communal properties; unclear water rights
Indigenous peoples	No indigenous population	Dispersed and mixed indigenous populations; highly acculturated indigenous populations	Indigenous territories, reserves and/or lands; vulnerable indigenous populations

Impact identification and classification

When considering the location of a subproject, rate the sensitivity of the proposed site in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to

adequately avoid, mitigate or manage potential effects. The following table should be used as a reference.

Table 22: Checklist of environmental and social impacts

Roads and Footpaths	**Potential for Adverse Impacts**				
	None	Low	Med	High	Unknown
Soil erosion or flooding concerns (eg, due to highly erodable soils or steep gradients)					
Number of stream crossings or disturbances					
Wet season excavation					
Creation of quarry sites or borrow pits					
Significant vegetation removal					
Wildlife habitats or populations disturbed					
Environmentally sensitive areas disturbed					
Cultural or religious sites disturbed					
Economic or physical resettlement required					
New settlement pressures created					
Other (specify):					

Drinking Water Projects	**Potential for Adverse Impacts**				
	None	Low	Med	High	Unknown
New access (road) construction					
Existing water sources supply/yield depletion					
Existing water users disrupted					
Downstream water users disrupted					
Increased numbers of water users due to improvements					
Increased social tensions/conflict over water allocation					
Sensitive ecosystems downstream disrupted					
Economic or physical resettlement required					
Local incapacity/inexperience to manage facilities					
Other (specify):					

Irrigation Projects	**Potential for Adverse Impacts**				
	None	Low	Med	High	Unknown
Existing water sources supply/yield depletion					
Existing water users disrupted					
Downstream water users disrupted					
Water storage requirement and viability (soil permeability)					
Vulnerability to water logging (poor drainage)					
Vulnerability to soil and water salinization					
Sensitive downstream habitats and waterbodies					
Environmentally sensitive areas disturbed					
Cultural or religious sites disturbed					
Increased agric. chemicals (pesticides, etc) loading					
Increased social tensions over water allocation					

Irrigation Projects	Potential for Adverse Impacts				
	None	Low	Med	High	Unknown
Local incapacity/inexperience to manage facilities					
Local incapacity/inexperience with irrigated agriculture					
Other (specify):					

Catchment, Forestry, Grasslands Projects	Potential for Adverse Impacts				
	None	Low	Med	High	Unknown
New access (road) construction					
Wet season soil disturbance					
Potential for debris flows or landslides					
Sensitive downstream ecosystems					
Removal of native plant/tree species					
Introduced plant/tree species					
Invasion of native species					
Wildlife habitats or populations disturbed					
Environmentally sensitive areas disturbed					
Insufficient capacity to manage catchment ponds					
Insufficient capacity to prohibit or control open grazing					
Insufficient capacity to manage new plantations/pastures					
Economic or physical resettlement required					
Other (specify):					

Infrastructure Projects	Potential for Adverse Impacts				
	None	Low	Med	High	Unknown
New access (road) construction					
Alteration of existing drainage conditions					
Vegetation removal					
Wet season soil disturbance					
Construction materials impact on adjacent forests/lands					
Quarries and borrow pits created					
Cultural or religious sites disturbed					
Water supply development effects in available supply					
Effect of sanitation development on existing disposal sites					
Effects of medical waste on existing disposal system					
Economic or physical resettlement required					
Number of potential Project Affected Persons (PAPs)					

Infrastructure Projects	Potential for Adverse Impacts				
	None	Low	Med	High	Unknown
In-migration/settlement induced by facilities development					
Local incapacity/inexperience to manage facilities					
Other (specify):					

Detailed questions:

Preliminary Environmental Information:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
State the source of information available at this stage (proponents report, ESIA or other environmental study).	
Has there been litigation or complaints of any environmental nature directed against the proponent or sub-project	
Refer to application and/or relevant environmental authority for this information.	
Identify type of activities and likely environmental impacts:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
What are the likely environmental impacts, opportunities, risks and liabilities associated with the subproject?	
Refer to ESMF– Impact Mitigation, Disclosure and Monitoring Guidelines	
Determine environmental screening category:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
After compiling the above, determine which category the subproject falls under based on the environmental categories A, B and C.	
Refer to ESMF– Screening and Review Process	
Mitigation of Potential Pollution:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
Does the subproject have the potential to pollute the environment, or contravene any environmental laws and regulations?	
Will the subproject require pesticide use?	
If so, then the proposal must detail the methodology and equipment incorporated in the design to constrain pollution within the laws and regulations and to address pesticide use, storage and handling.	
Does the design adequately detail mitigating measures?	

Refer to ESMF– Impact, Mitigation and Monitoring Guidelines	
Environmental Assessment Report or environmental studies required:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
If screening identifies environmental issues that require an ESIA or a study, does the proposal include the ESIA or study?	
Indicate the scope and time frame of any outstanding environmental study.	
Required Environmental Monitoring Plan:	
If the screening identifies environmental issues that require long term or intermittent monitoring (effluent, gaseous discharges, water quality, soil quality, air quality, noise etc), does the proposal detail adequate monitoring requirements?	
Refer to ESMF– Impact, Mitigation and Monitoring Guidelines	
Public participation/information requirements:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
Does the proposal require, under national or local laws, the public to be informed, consulted or involved?	
Has consultation been completed?	
Indicate the time frame of any outstanding consultation process.	
Refer to relevant legislative acts in Uganda.	
Land and resettlement:	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
Will the subproject require the acquisition of land? If so, what is the likelihood of land purchase for the subproject?	
Is the land public or privately owned?	
How will the proponent go about land purchase?	
What is the plot currently being used for? (e.g. agriculture, gardening, etc) List the key resources.	
Will people need to be displaced, and therefore require compensation and resettlement assistance?	
Are the relevant authorities aware of the need for a Resettlement Process, involving a census, valuation, consultation, compensation, evaluation and monitoring?	

What level or type of compensation is planned?	
Who will monitor actual payments?	
Refer to the Resettlement Policy Framework.	
Actions:	
List outstanding actions to be cleared before subproject appraisal.	
Approval/rejection	Yes/No answers and bullet lists preferred except where descriptive detail is essential.
If proposal is rejected for environmental reasons, should the sub-project be reconsidered, and what additional data would be required for reconsideration?	

Recommendations

Environmental category: ☐ **A** ☐ **B** ☐ **C**

☐ Requires an EIA to be submitted on date:
☐ Requires a RAP to be submitted on date:
☐ Requires an ESMP to be submitted on date:
☐ Requires preparation of additional plans (e.g. Pest Management Plan or Dam Safety Plan)
☐ Does not require further environmental or social studies

Reviewer: _____
Name: _____
Signature: _____
Date: _____

10.3 ANNEX 3: SAMPLE TERMS OF REFERENCE FOR AN ESIA

Introduction: state the purpose of the terms of reference.
Background information: briefly describe the need for, objectives of and major components of the proposal.
Objectives: summarise the scope of the ESIA and timing in relation to project preparation, design, and approval.
ESIA requirements: identify the regulations and guidelines governing the conduct of the ESIA and/or specify the content of its report.
Study area: outline the time, space and jurisdictional boundaries of the study.
Scope of work: identify the tasks to be carried out, information deficiencies to be addressed, studies to be carried out, methodologies etc.
Task 1. Description of the proposed project: provide a brief description of the relevant parts of the project, using maps (at appropriate scale) where necessary.
Task 2. Description of the environment: assemble, evaluate and present baseline data on the relevant environmental characteristics of the study area. Include information on any changes anticipated before the project commences.
Task 3. Legislative and regulatory considerations: describe the pertinent regulations and standards governing environmental quality, health and safety, protection of sensitive areas, protection of endangered species, siting, land use control, etc.
Task 4. Determination of the potential impacts of the proposed project: distinguish between significant positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts. Identify impacts that are unavoidable or irreversible. Wherever possible, describe impacts quantitatively, in terms of environmental costs and benefits.
Task 5. Analysis of alternatives to the proposed project: describe alternatives that were examined in the course of developing the proposed project and identify other alternatives which would achieve the same objective.
Task 6. Development of management plan to mitigate negative impacts: recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels and describe the actions necessary to implement them.
Task 7. Identification of institutional needs to implement environmental assessment recommendations: review the authority and capability of institutions at local, provincial/regional, and national levels. Recommend steps to strengthen or expand them so that the management and monitoring plans in the environmental assessment can be implemented.
Task 8. Development of a monitoring plan: prepare a detailed plan to monitor the implementation of mitigation measures and the impacts of the project during construction and operation.
Task 9. Public/NGO participation and inter-agency co-ordination: describe how the arrangements for obtaining the views of local NGOs and affected groups, and in keeping records of meetings and other activities, communications, and comments and their deposition.
ESIA report: keep it concise and limited to significant environmental issues. The main text should focus on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used.

10.4 ANNEX 4: TERMS OF REFERENCE FOR AN ESMP

The ESMP should be formulated in such a way that it is easy to use. References within the plan should be clearly and readily identifiable. Also, the main text of the ESMP needs to be kept as clear and concise as possible, with detailed information relegated to annexes. The ESMP should identify linkages to other relevant plans relating to the project, such as plans dealing with resettlement issues. The following aspects should typically be addressed within ESMPs.

Summary of impacts: The predicted adverse environmental and social impacts for which mitigation is required should be identified and briefly summarized.

Description of mitigation measures: The ESMP identifies feasible and cost-effective measures to reduce potentially significant adverse environmental and social impacts to acceptable levels. Each mitigation measure should be briefly described with reference to the impact to which it relates and the conditions under which it is required (for example, continuously or in the event of contingencies). These should be accompanied by, or referenced to, designs, equipment descriptions, and operating procedures which elaborate on the technical aspects of implementing the various measures. Where the mitigation measures may result in secondary impacts, their significance should be evaluated.

Description of monitoring program: Environmental performance monitoring should be designed to ensure that mitigation measures are implemented, have the intended result, and that remedial measures are undertaken if mitigation measures are inadequate or the impacts have been underestimated within the ESIA report. It should also assess compliance with national standards and World Bank Group requirements or guidelines.

The monitoring program should clearly indicate the linkages between impacts identified in the ESIA report, indicators to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions, and so forth. Although not essential to have complete details of monitoring in the ESMP, it should describe the means by which final monitoring arrangements will be agreed.

Institutional arrangements: Responsibilities for mitigation and monitoring should be clearly defined. The ESMP should identify arrangements for coordination between the various actors responsible for mitigation.

Budget: Outline the estimated costs for implementation of the mitigation and monitoring measures.

Example formats for an ESMP are provided overleaf.

10.5 ANNEX 5: A FRAMEWORK ESMP

A. Mitigation

Project Activity	**Potential Environmental and Social Impacts**	**Proposed Mitigation Measures** (Incl. legislation & regulations)	**Responsibilities**	**Cost Estimates**	**Comments** (e.g. secondary impacts)
Pre-Construction Phase					
Construction hase					
Operation and Maintenance Phase					

B. Monitoring

Proposed Mitigation Measure	**Parameters to be monitored**	**Location**	**Measurements** (incl. methods & equipment)	**Frequency of measurement**	**Responsibilities** (Incl. review and reporting)	**Cost** (equipment & individuals)
Pre-Construction Phase						
Construction Phase						
Operation and Maintenance Phase						
Total Cost for all Phases						

10.6 Annex 6: GENERAL Environmental Management Conditions for Construction Contracts

GENERAL

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental Management Plan (EMP) or Environmental and Social Management Plan (ESMP) for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy and plan to fully take into account relevant provisions of that EMP. If the Contractor fails to implement the approved EMP after written instruction by the Supervising Engineer (SE) to fulfill his obligation within the requested time, the Owner 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, asphalt mixing sites, dispersing coal ashes, 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, blasting) 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 or irrigation 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, irrigation channels 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 archeological 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 fulfillment 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, and 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 the sites by the SE for adherence to the contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities may carry out similar inspection duties. In all cases, as directed by the SE, the Contractor shall comply with directives from such inspectors 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

a. 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 off at designated disposal sites in line with applicable government waste management regulations.
b. 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.
c. Used oil from maintenance shall be collected and disposed of appropriately at designated sites or be re-used or sold for re-use locally.
d. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.
e. Construction waste shall not be left in stockpiles along the road, but removed and reused or disposed of on a daily basis.
f. 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.
    d. Shall not be located in forest reserves. However, where there are no other alternatives, permission shall be obtained from the appropriate authorities and an environmental impact study shall be conducted.
    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, and any applicable EMP, 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 research institutions, forest department 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.

10.7 ANNEX 7: CHANCE FIND PROCEDURES

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

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

10.8 ANNEX 8: GENERIC IMPACT AND MITIGATION GUIDELINES FOR PROPOSED WMDP INVESTMENTS

Table 23: Small-scale Irrigation and Drainage

Potential Impacts	Generic Mitigation Measures	Monitoring Indicators	Responsibility
Loss of vegetative cover, decrease in soil fertility	Avoid infringing on protected areas, critical habitats or areas with significant biodiversity (e.g. wetlands)	• Decreased productivity	Community/NGO
Reduction in soil and groundwater quality, declines in plant growth and reduced harvests	Use the right fertilizers at correct time (e.g. before field crops are planted), and in correct amounts for the specific crop and soil type	• Decreased productivity	Community/NGO
Fertilizer runoff leading to degradation of aquatic environments in nearby ponds, streams and other water bodies	Use manure to help fertilize crops and build soil quality. Do not apply agro-chemicals too close to streams, ponds and drinking water sources. Do no wash fertilizer bags in streams or ponds	• Quality of liquid effluent and receiving waters • Decreased productivity	Community/NGO
Illness or disease due to pollution of water sources from food processing wastes	Ensure thorough training in safe storage, handling, use and disposal of agro-chemicals. Do not apply agro-chemicals too close to streams, ponds and drinking water sources. Do no wash fertilizer bags in streams or ponds.	• Occurrence of human (or livestock) illness or disease	DEA/ NGO/ Community
Health effects on workers	Ensure thorough training in safe storage, handling, use and disposal of pesticides. Wear protective clothing. Consider training and use of integrated pest management (IPM).	Incidence of worker disease or illness	DEA NGO/ Community
Degradation of groundwater, streams, and rivers from solid and liquid wastes, and consequent	Locate waste disposal sites away from surface and groundwater sources, watercourses, housing and town centers. Install grease traps and skim tanks. Ensure receiving waters for liquid wastes are able to absorb and naturally decompose the effluent. Screen waste liquids to remove coarse solids.	• Occurrence of illness in livestock or community • Surface water flows and ground table levels in project area	DEA/ NGO/ Community

	Ensure waste that is stored before transport to treatment facility or landfill cannot leak into the ground.		
Upsetting existing social and economic community management relationships, land tenure systems, security of livelihoods, and gender division labour	Avoid sites that require: Resettlement Displacement of other important land uses Encroachment on historical, cultural, or traditional use areas	A. Number of people displaced and compensated B. Encroachment onto historical, cultural or protected areas	Ministry of Lands, Housing and Urban Development/ NGO/ Community
Conflicting demands on surface or groundwater supplies	Locate and size irrigation schemes: Where water supplies are adequate and the scheme will not conflict with existing human, livestock, wildlife or aquatic water uses, especially during dry seasons. Withdrawals should not exceed "safe yield" from groundwater resources.	A. Involve community in local planning B. Complaints from community about water use	DWD/ NGO/ Community
Creating habitats in canals and ditches for disease carriers such as mosquitoes and snails	Assess ecology of disease carriers in the project area, and employ suitable prevention and mitigation measures, e.g.: Site and orient water works, fields and furrows to ensure adequate natural drainage of surface water Avoid unsuitable gradients, and creating stagnant or slowly moving water.Construct straight or only slightly curved canalsInstall gates at canal ends to allow complete flushing.Ensure adequate sub-surface drainage of fields.Avoid over-irrigation.Maintain water works, and clear sediment and weeds, regularly.	Occurrence of higher numbers of disease carriers such as mosquitoes and snails, as documented by community survey/complaints	DEA/ NGO/ Community
Spreading infection and disease through the inappropriate use of irrigation canals for	Provide/ensure alternate facilities for domestic water supply, bathing and human waste disposal	A. Involve community in local planning	Community/ NGO

water supply, bathing or human waste disposal		C. Periodic survey of community about which facilities they use for which activity	
Health effects from improper storage, handling, use or disposal of agro-chemicals (pesticides, herbicides)	Training/supervision of farm workers on use of agro-chemicals to protect worker health and safety along with the environment Training of Integrated Pest Management (IPM) scouts for early recognition of pest outbreaks and the most environmentally sound methods to combat outbreaks	A. Pest outbreaks B. Occurrence of illness or disease among workers	Community/ NGO
Waterlogging	A. Thoroughly assess project soils and their management needs under irrigated agriculture B. Apply water efficiently (consider drip or dawn/evening sprinkler system) C. Install and maintain adequate surface and subsurface draining D. Use lined canals or pipes to prevent seepage	A. Incidences of gathering water from improper drainage B. Soil erosion C. Dampening of surrounding area due to seepage	Community/NGO
Salinization	Avoid waterlogging (above) Mulch exposed soil surfaces to reduce evaporation Flush irrigated land regularly Cultivate crops having high tolerance to salinity	Maintain log of hours/water used for irrigation	Community/local government
Erosion	Design and layout of furrows appropriately. Avoid unsuitable gradients. Avoid over-irrigation. Install sediment traps in fields and canals to capture sediment for return to fields. Minimum tillage, contour cropping, terracing and other methods of conserving soil moisture.	Involve community in local planning of sites	DEA/ NGO/ Community
Reduced quality of surface and groundwater receiving excess irrigation water or drainage (nutrients,	Minimize risks of waterlogging and salinization (see above). Use agro-chemicals appropriately (see above). Prevent surface drainage of fields into nearby water bodies (streams, ponds, etc.).	• Involve community in local planning of sites • Training/practices of local farmers	Community

agro-chemicals, salts and minerals)			
Overgrazing	Development of range management specialists in Agricultural Ministry. Training/supervision of herders in range management.	• Involve community is local planning of range management • Practices of local herders	DEA/ NGO/ Community

10.9 ANNEX 9: WATER SUPPLY AND SANITATION SPECIFIC MITIGATION MEASURES PLAN

Project Potential Impact	**Impact trigger through**	**Mitigation Management and Enhancement Measures**	**Responsible for implementation of mitigation measure**	**Monitoring indicators to track implementation of mitigations**	**Frequency of monitoring mitigations: Continuous Weekly Monthly Annually**	**Costs of mitigations (USD)**
Soil erosion risk from loose excavated soils	Excavation of soil for water supply lines	Full restoration of excavated areas.	Contractor	Report on works restoration. Inspection	Continuous	Part of contract budget
Impact of land take for the water pipes	Areas where water supply systems are to be constructed will take up land.	Restrict pipeline to construction line especially at the roadside edges; Sensitization of the communities.	District, Water Use Committees	Designs of the pipeline layout in place	Continuous	Part of contract budget
Risks of accidents and injuries on workers, livestock and the public.	Equipment and operation	Provide PPEs to the workers; Put up barriers around the trenches; Proper restoration and backfilling of the water pipeline trenches; Plan to complete works on schedule to	Contractor	PPEs purchased and worn by the workers; Barriers around the sites; Records of sensitization meetings.	Continuous	Part of contract budget

		reduce of open trenches for a long time; and Sensitization of the public.				
Dust nuisance	Excavations and transportation of construction earth-based materials. Do excavations in the early hours of the day when wind is low.	Provide PPES to the workers Dusty surfaces be sprinkled with water	Contractor	PPEs supplied to the workers and being used.	Continuous	Part of contract budget
Impact of temperatures on the workers	Working during hot hours of the day especially during sunny days. Some areas of the project especially Northern Uganda has fairly hotter temperatures (Gulu).	Workers digging trenches be made to work in the early hours of the day (8:30-12:00 noon); Workers be provided with clean and safe drinking water. Use of equipment for excavation of water trenches.	Contractor	Equipment for excavation works in place. Measures for provision/supply of water in place.	Continuous	Part of contract budget
Risks associated with flushing of water supply system	Flushing of water supply system to clean it up before people begin to consume it. Management of flush water from the system.	Flush water be discharged to a dug pit that should be backfilled properly; Work with security agencies to supervise the	Contractor	Arrangements with police in place; PPEs for workers.	Continuous	Part of contract budget

		flushing exercise so as to oversee use and disposal of any excess chlorine; Provide PPEs to the workers.				
Leakages in the water supply system due to: Breakages/damage to pipelines Lack of maintenance Poor quality of water supply pipes.	Reduced pressure in the system hence, poor transmission of water to the users. Risks of water contamination. Increased energy consumption because more water has to be pumped to compensate for the loss. Flooding or ponding of water at sections of leakages.	Regular checks of water supply pipelines for any leakages. Monitoring of water flow/pump performance to detect any mal-flows.	Contractor. Water Supply Provider/NWSC; Water Use Committee	Schedule of monitoring and reports of monitoring.	Continuous	Part of contract
Conflicts with water trackers and those supplying water on bicycles.	Water trackers and other selling water on bicycles, motor cycles risk to lose the business. The trackers or other water suppliers can maliciously damage the water supply infrastructures.	Sensitising the communities on the intervention. Provide a schedule for the project so that, the water trackers can progressively shift their operations to other areas or	Area LCs. Water Use Committees.	Meetings minutes Records	Continuous	Part of contract

		explore alternate business.				
Management of construction waste	General laborers presence on site	Site clearance and restoration after works; Routine removal of construction and demolition debris. Dumper trucks to have tarpaulins to cover the rubble.	Contractor		Continuous	Part of contract budget
Risks of vandalism of the project infrastructures.	Theft and malicious damage to the installations.	Employing security guards. Sensitization of communities.	Contractor. Water use Association	Armed security guard working on 24-hour basis.	Continuous	Part of contract budget
Faecal Sludge Treatment Solution						
Disease vector nuisance	Improper management of pit latrines	The project to support set of WASH and Environment Committees in the communities to champion hygiene campaigns; Schools to have clear cleanings rosters for the pit latrines.	WASH and Environment Committees in place. Modalities for their operations in place.	Site inspections	Monthly	Part of contract budget
Risks of Management of faecal sludge	Pit latrines filling up quickly.	The project to put in place, an elaborate fecal	Modalities for their operations in place.	Presence of meeting minutes on	Quarterly	

	Irresponsible dumping of fecal sludge in non-designated areas. No facility which is well equipped to handle volumes of sludge in the region of West Nile.	sludge treatment solution which is equipped to handle fecal sludge. To provide free Personal Protection Equipment to emptiers such as gloves, masks or boots. Monitoring the operations of the fecal sludge treatment solution.	WASH and Environment Committees in place;	awareness creation and trainings. Records on PPEs distributed. Site inspections records		
Risks of Management of cesspool emptiers	Fecal sludge if not handled carefully can be a health risk to the operators and the communities; There can be risks of livestock or children drawing in the fecal sludge treatment facility. Dumping of solid waste into the pit latrines which causes great challenges during emptying	To organize awareness-raising on the risks and safety issues relating to the facility during and when operational, sessions on OHS in FSM for emptiers in both the formal and informal sector; To organize trainings on proper and safe operations of the facility.	Modalities for their operations in place. WASH and Environment Committees in place;	• Records	Quarterly	District operations budget.

10.10 ANNEX 10: BASIC REQUIREMENTS TO ENHANCE ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY (ESHS) PERFOMANCE

This template is based on the World Bank Summary of Environmental, Social, Health and Safety (ESHS) Enhancements available at http://www.eic-federation.eu/media/uploads/newsletter/summary-key_eshs_enhancements-procurement-10-03-2017.pdf

Table 24: Environmental Measures Performance EnhancementPlan

Subject	Enhancement
Declaration of contract suspension or termination	Applicants/Bidders/Proposers required to declare any civil works contracts that have been suspended or terminated by an employer and/or performance security called by an employer, for ESHS reason/s.
Strengthened specifications/ employer's requirements	The employer should set out clearly the minimum expectations of ESHS performance to ensure that all Bidders/Proposers are aware of the ESHS requirements
Workers' ESHS Code of Conduct	Bidders/Proposers should submit, as part of their Bid/Proposal, an ESHS Code of Conduct that will apply to their employees and sub-contractors, and details of how it will be enforced.
	The successful Bidder/Proposer is required to implement the agreed Code of Conduct upon contract award
Contractor's ESHS Management Strategy and Implementation Plans	Bidders/Proposers should submit ESHS Management Strategies and Implementation Plans required to manage the key ESHS risks of the project. Particular Conditions of Contract now include provisions relating to the (C-ESMP), e.g.: • the Contractor shall not commence any Works unless the Engineer is satisfied that appropriate measures are in place to address ESHS risks and impacts; • the Contractor shall apply the plans and ESHS Code of Conduct, submitted as part of the Bid/Proposal, from contract award onwards.
ESHS Performance Security	The successful Bidder/Proposer should provide an ESHS Performance Security (the sum of the two "demand" bank guarantees, normally not to exceed 10% of the contract price). The ESHS performance security is in the form of a "demand" bank guarantee." The application of this provision is at the Borrower's discretion. Recommended for contracts where there is significant ESHS risks as advised by Social/Environmental specialist/s.
ESHS Provisional Sum	An additional provisional sum, specifically for ESHS outcomes, may be included in the Request for Bids/Proposals documents, and eventual contract. Normally, the payment for the delivery of ESHS requirements

Subject	Enhancement
	shall be a subsidiary obligation of the Contractor covered under the prices quoted for other Bill of Quantity/price items.
Key ESHS Personnel	Bidders/Proposers are now required to demonstrate that they have suitably qualified ESHS specialists among their Key Personnel. Key Personnel must be named in the Bid/Proposal, and in the contract. The quality of the proposed Key Personnel (including ESHS specialists) will be assessed during the evaluation of Bids/Proposals The Contractor shall require the Employer's consent to substitute or replace any Key Personnel. The Engineer may require the removal of Personnel if they undertake behaviour which breaches the ESHS Code of Conduct, e.g. spreading communicable diseases, sexual harassment, gender-based violence, illicit activity, or crime.
ESHS Reporting	Contracts contain specific ESHS reporting requirements relating to: • ESHS incidents requiring immediate notification • ESHS metrics in regular progress reports.
ESHS considerations during contract variation	As part of variation procedures, the Contractor shall provide relevant ESHS information to enable the Engineer to evaluate the ESHS risks and impacts.
Ability to withhold interim payment	Contracts now contain provisions allowing interim payments to be withheld where there is a failure to perform an ESHS obligation.
ESHS considerations included in civil works Consulting Services	The standard Request for Proposals for consulting services now include ESHS considerations to apply to the supervision of civil works.

10.11 ANNEX 11: UGANDAN ESIA PROCESS, SCREENING, EA CATEGORIZATION AND ASSESSMENT

ESIA regulations and procedures focus on the following points:

SCREENING PROCESS

The screening process is designed to determine which projects are exempt, require partial assessment (Project Brief) or require a full ESIA process. The nature, type and location of the project are described in the environmental screening form with a preliminary indication of potential socio-economic and biophysical impacts (number of people/ communities affected, sensitive habitats, threatened species, etc). Based on the screening exercise, NEMA makes a decision on whether an ESIA is required or not. In the event of an ESIA is not required, the proponent is still obliged to describe methods and procedures for proper environmental management, including health and safety management. The projects listed under Schedule III of the Act undergo mandatory full ESIA.

SCREENING FORM

A standardized Project Brief is submitted by a developer using a Screening Form. The form requires that the developer submit information on the proposed project/activity and *inter-alia*, on the following:

a. Developer;
b. Contact address;
c. Location and size of the site/facility;
d. Project design, activities-during & after, inputs required (utilities and raw materials);
e. Products and by-products (finished products and wastes);
f. Methods of waste disposal;
g. Anticipated environmental and social impacts (number of people/communities likely to be affected, sensitive habitats, vulnerable groups and species etc).
h. Proposed mitigation actions responsible centers, and budget estimates.

The First Schedule of the EIA Regulations 1998, lists the issues that are considered in making environmental and social impact assessment, and these include:

a. Ecological considerations, which encompass biological diversity, sustainable use, and ecosystem maintenance;
b. Social considerations, including employment, social cohesion & disruption, culture, human health, communication and local economy;
c. Landscape impacts; and
d. Land use impacts.

General information is required at this first stage. If in-depth analysis has already been done, results should be indicated on the screening form. If however, only preliminary analysis/surveys have been done, this will in general suffice for the screening form.

Where the developer needs assistance to complete the screening form, a lead sectoral department concerned or a consultant can be enlisted for help. Upon completion by the developer, the form is submitted to the lead department or the Authority. If the form has been completed correctly, the lead department forwards the form to the Authority for consideration. The Authority determines the follow-up actions required in consultation with the lead department. If necessary, the Authority, the lead department, and/or a designated sectoral working group may visit the proposed project site to clarify details or complete the information required.

AUTHORITY PROJECT CLASSIFICATION

Based on information obtained from the screening form, a systematic review of the information is completed by the Authority to determine whether an ESIA needs to be conducted or not (exception). Evaluation criteria have been established which provides a general guide for determining whether or not a full ESIA is required. This ensures a fair and consistent review of all proposed projects at this screening stage, based on the information provided by the project proponent. As a result of this screening, the project is classified in the following manner[21]:

CLASS A PROJECTS

Under this category, full ESIA will be required. In all, projects listed under the Third Schedule of the NEA are required to undergo full ESIA. If the project is not listed under the third Schedule of NEA, the Authority will review the screening form or after additional information has been provided, and if in their professional judgement that the project will cause a significant negative impact on the environment, it will require a full ESIA be made in accordance with the provisions stipulated below. Comprehensive and meaningful stakeholder consultations, including a public hearing (disclosure) are required for Category A projects. These requirements are similar to World Bank Category A projects requirements in terms of Consultations and disclosure.

Apart from the ESIA content, the procedures require a public survey and consultations prior to the issuance of any authorization on the basis of the ESIA. The ESIA conducted by the consultants at the request of the proponent is submitted for approval to the NEMA that among other aspects reviews the procedure for the conduct of ESIAs (approval of the TORs, authorization given to consultants and consultancy firms, evidence of stakeholder consultations undertaken, etc.).

CLASS CLASS B PROJECTS

Projects placed under this category, will require partial ESIA to be conducted before their implementation. Such projects under this category are considered not to have adverse environmental and social impacts compared to Category A. Their impacts are readily mitigated, site specific and reversible. Typically, the Authority requires preparation of a Comprehensive ESMP as part of the Project Brief (Screening Document). In cases where doubts remain as to the significance of potential impacts on the environment, further information is required. In this case, the Authority will give the

project proponent, in writing, a clear indication of the information that needs to be provided. The Executive Director reserves the right to determine what additional information is required. After additional information has been provided, the Authority will reassess the proposed project and if the ESMP contained in the Project Brief is deemed adequate, EIA Certificate of approval is issued.

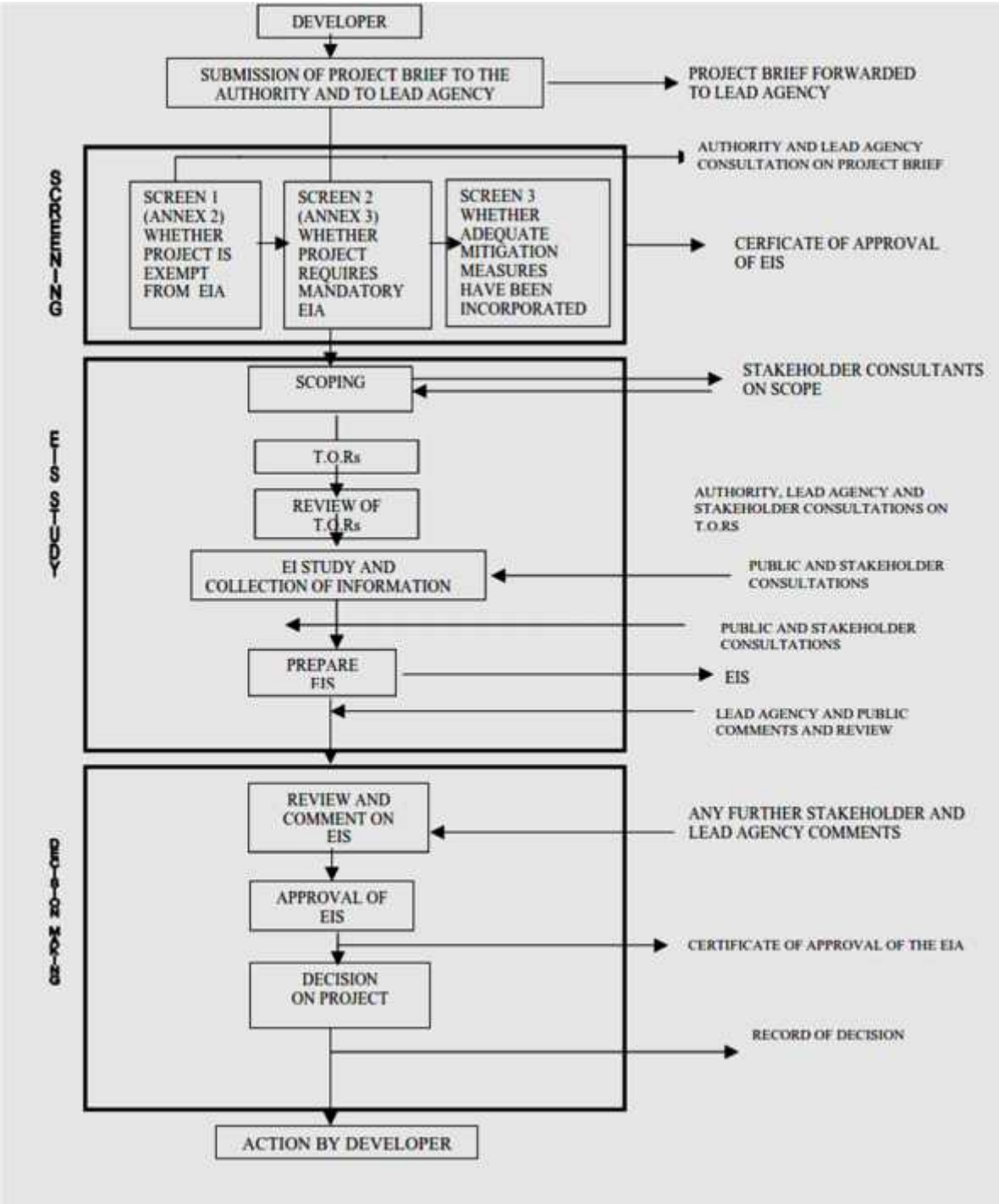
PROJECTS UNDER CLASS C TYPES

These basically require no ESIA before their implementation. A project may be categorized as Class C if it is determined that the proposed project will have no significant or adverse impact on the environment. The Executive Director may grant environmental approval to the project without further analysis.

CONSULTATIONS DURING THE ESIA PROCESS

The Authority, upon receiving a Project Brief (screening checklist/ ESMP) consults the lead sectoral department. It invites public comments on statements of project intent submitted to it especially from those most likely to be affected by a proposed project. It is only subsequent to these two consultations that the Authority is required to invite interested organs of the State to comment on both the statement and the comments to follow. A public enquiry/hearing is the final form of consultation.

The ESIA process usually follows the following schematic process:



EIA Process in Uganda

The impacts due to implantation of various industries in urban and peri-urban areas or the resettlement of populations close to these centers of economic activity will have to be dealt with in a timely manner for the safety, security and health of the communities. These issues will be addressed

in the RPF. In cases where it is obvious that a project will not be in line with the laws of Uganda the Executive Director may reject a project without any obligation to carry out an EIA.

ENVIRONMENTAL ASSESSMENT CATEGORIES FOR IWMDP INTERVENTIONS

In accordance with OP 4.01, the environmental categories to be applied to IWMDP subprojects will rely on the screening of environmental and social impacts which takes place during the pre-appraisal of the investments. Under the IWMDP ESMF and in line with the World Bank's OP 4.01 and the local regulations, the following categories will be used to screen subprojects[22]:

a. **Category A** are defined as those that pose significant environmental and social impacts (due to the scale, type and location of the investment) and will require the preparation of a site specific ESIA for approval. For example, *dams, reservoirs and/or associated small-scale hydropower*[23] may require an ESIA during the design and preparation of the investment in order to ensure that engineering and feasibilities options being considered are environmentally sound.
b. **Category B** (e.g. *valley tanks, check dams, small-scale irrigation, rehabilitation of wastewater treatment plants, water supply and distribution pipeline work, gravity flow schemes*) have moderate or limited environmental and social impacts, which can be mitigated and managed through an Environmental and Social Management Plan (ESMP) and associated safeguard management plans.

If the subproject is likely to have minimal or no adverse environmental impacts. Beyond screening, no further environmental assessment action is required for a Category C sub-project.

The majority of the proposed IWMDP investments will be considered Category B since they are local level small-scale interventions which can be managed effectively by an ESMP and related safeguard management plans where applicable. Refer to Section 9 for a pre-screenning exercise based on the identified subprojects.

[22] For the IWMDP ESMF, environmental 'categories' are equivalent to Ugandan environmental screening 'classes'; however, the term' category' is used to ensure consistency with the WB OP 4.01.

[23] These investments fall under Schedule III Annex 1 of the Ugandan EIA law.