



Republic of Uganda
Ministry of Water and Environment

National Environment and Social Assessment
Stocktaking Report of the Water Sector

Water Management and Development Project (WMDP)

FINAL REPORT

March 20, 2012

EXECUTIVE SUMMARY

Introduction

The World Bank is supporting the Government of Uganda (GOU) to implement a Water Management and Development Project (WMDP) starting in 2013. In order to aid various stakeholders to identify and effectively manage potential environmental impacts of the proposed project, certain due diligence environmental instruments, namely (i) Environment and Social Management Framework and (ii) Resettlement Policy Framework have to be prepared in accordance with international good practice as well as the World Bank safeguards and GoU requirements. These instruments will provide practical guidance for management of potential environmental and social issues associated with future sub-projects under the WMDP.

In addition, to provide current environmental and social context of water resource management in Uganda based on the synthesis of existing analytical work, this National Environment and Social Assessment Stocktaking Report of the Water Sector (ESAS) was prepared.

Objective of the ESAS

The ESAS provides a strategic stocktaking review of environmental and social issues in the water sector and recommend measures for addressing them in the context of the WMDP.

The objectives of the ESAS are to:

- Describe the relevant national legislation, sectoral policies, and regulatory framework which will apply to the goals and implementation process of the WMDP;
- Provide an overview of the environmental and natural resources sector in Uganda in view of critical issues which may present challenges to the implementation of the WMDP;
- Provide a strategic environmental and social review of the WMDP, taking into account the potential environmental and social impacts of its implementation, the degree to which it addresses the key environmental concerns of the sector, and its consistency with Ugandan environmental policies and objectives and legislation and World Bank safeguard policies;
- Outline environmental and social priorities of the WMDP taking into account the legal and institutional challenges the Project will face;
- Identify institutional and capacity gaps at the federal, regional and local levels as pertains to environmental and social governance; and
- Recommend to the GOU strategic level enhancements for the environmental and social performance of the WMDP.

Project Description and Implementation Arrangements

Project Objectives and Components

The Project aims to strengthen key institutions to enable effective water development and management; to support the implementation of integrated water resources management through select investments in one or more Water Management Zones (WMZ); and to finance investments in sustainable expansion of Urban Water Supply and Sanitation (UWSS) services, including catchment protection. The Project financing institutions will consider the option of a Sector Investment Loan as well as a results based financing which may complement the MWE's use of performance based instruments (e.g. delegated contracts in the NWSC and output based contracts in Directorate of Water Development).

The Project Development Object is to improve (i) integrated water resources planning, management and development; and (ii) access to and reliability of water and sanitation services in priority areas. The project will contribute to higher-level goals of sustaining natural resources, improving service delivery, and increasing economic productivity.

The WMDP activities will be grouped under three components as follows:

- Component 1: Investment in Integrated Water Resources Development and Management (\$40.4 million)
- Component 2: Investment in UWSS Services and Catchment Source Protection (\$103 million)
- Component 3: Strengthening Institutions for Effective Project Implementation (\$3 million)

Proposed interventions

Most of the project physical investments in water resources management and development would include the preparation and implementation of targeted investments in water-related sectors (including construction or rehabilitation of dams, reforestation, re-vegetation of river banks, soil erosion control, other sustainable land management measures as well as small civil works for office construction and rehabilitation).

Water supply and sanitation investments would focus on priority water supply and sewerage investments in NWSC towns including Arua, Gulu, Bushenyi/Ishaka and Mbale and investments in approximately 10 DWD town water supply and sanitation systems (including limited sewerage and sludge management). The implementation of selected activities under the Kalagala Offset Sustainable Management Plan would take place in Kalagala.

Project target areas

The project will be implemented at national and sub-national levels all over Uganda divided into the four WMZs: the Upper Nile in the North, Lake Kyoga in the East, Lake Victoria in the South, and Albert Nile in the West and Southwest.

Project Administration

The Project will be implemented by two agencies, the MWE 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 facilitate integration within the sector, an MOU outlining joint responsibilities, will be signed between the implementing agencies and entities responsible for specific activities (e.g. NFA, districts).

Uganda Water and Sanitation Sector Framework

The overall policy objectives of the GOU for water resources management, (domestic) water supply and sanitation, and water for production respectively are as follows:

- To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations with the full participation of all stakeholders.
- To provide sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 100% of the urban population by the year 2015 with an 80%- 90% effective use and functionality of facilities¹. This is more ambitious than the Millennium Development Goal, which aims to halve the percentage of people without access to safe water by 2015 in Uganda.
- Promote development of water supply for agricultural production in order to modernise agriculture and mitigate effects of climatic variations on rain fed agriculture.

Priorities of the WMDP

The Uganda Water Country Assistance Strategy (Water CAS) aims to assist the GOU in identifying priority actions for building on successful outcomes, tackling remaining challenges, and exploiting opportunities in Uganda's water sector. The objective of the Water CAS is to define the World Bank's strategic role in supporting the GOU to better manage and develop its water resources. The recommendations of the Water CAS are complementary to the World Bank Uganda Country Assistance Strategy (CAS), 2011-15 priorities for Uganda and consistent with the country's development objectives as defined in the NDP and water and related sector plans and strategies, which form the foundation of the World Bank Uganda CAS.

¹ Government of Uganda, Medium Term Budget Paper, 2006.

It is within the context of the Uganda CAS, Water CAS and IWRM strategy that the WMDP will be prepared. The Project is intended to create an analytical, infrastructural and institutional platform to improve water resource management, protect watersheds and water sources, improve productivity and service delivery, and reduce vulnerability to water shocks. Included in the Project's proposed activities are development of the following:

- An enabling platform of institutional and governance arrangements, structures, systems and business processes in the water resource area, and strengthening institutional co-operation and integration between the entities responsible for management of water resources and the entities responsible for the management of land, wetlands and forest resources;
- A programme of water catchment investments that would include afforestation and reforestation, wetlands protection and boundary demarcation of forests and wetlands; and
- A capacity development programme at all levels (central, water management zone and local) to create a platform for engaging stakeholders during project preparation and implementation and developing a stakeholder communication strategy.

Legislative and Institutional Framework for Environmental Management

World Bank Requirements

The WMDP has been assigned an EA Category B given that significant adverse environmental and social impacts are not expected due to the nature of the proposed activities. The following Operational Policies have been triggered by the Project and will require specific safeguard provisions. The policies include: Natural Habitats (OP 4.04), Environmental Assessment (OP 4.01), Forests (OP 4.36), Pest Management (OP 4.09), Physical Cultural Resources (OP 4.11), and Involuntary Resettlement (OP 4.12).

Ugandan Requirements

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

- Waste Discharge Regulations, 1999;
- Regulations on Environment Impact Assessment, 1998,
- Regulations on Waste Management, 1999;
- Standards for Discharge of Effluent or Wastewater, 1999;
- Draft Standards for Air Quality, 1997;
- Draft Standards for Noise and Vibration, 1997;
- Minimum standards for the management of soil quality, 2001;
- National Environment Instrument (delegation of waste discharge functions) 1999;
- National Environment Notice (designation of Environment Inspectors 2000);
- The National Environmental Statute, 1995;
- National Policy for the Conservation and Management of Wetland Resources, 1995; and
- National Environment (Wetlands, River banks and Lake shore management) Regulations, 2000.

Institutional Arrangements

There are several entities which play a role in environmental management and protection in Uganda. These include at the federal level, the implementing agency the Ministry of Water and Environment (MEW), the National Water and Sewerage Corporation (NWSC), and the National Environmental Management Authority (NEMA), the National Forestry Authority, Uganda Wildlife Authority, and supporting line agencies. At the regional level are the WMZs and at the district level are sub-sector agencies such as the Directorate for Water Resources and Management, the Directorate of Environmental Affairs and the Directorate for Water Development.

Environment and Natural Resources Sector Trends and Challenges

Nearly half of Uganda is affected by severe land degradation characterized by soil erosion and nutrient depletion from unsustainable land use; in some areas its severity results in fatal and destructive landslides. Since 1990, Uganda has lost 40% of its forest cover, and timber requirements will now need to be met from imports. Fish catches have been declining since they peaked in 2004/05, when they were most surely passed maximum sustainable yields for the resource. Wetlands area has declined by at least 20% since 1999, increasing the severity of recent flooding events. Finally, water resources are degraded from all of the above – unsustainable land use, deforestation, wetland degradation and conversion – plus pollution of surface and groundwater. While at the same time, Uganda is becoming an increasingly water-stressed country because of water demand growth and the vagaries of climate variability and change.

Key sustainability issues in Uganda include:

- Inability to provide a reliable water supply to consumers through newly installed water infrastructure;
- Spiralling water treatment costs because of wetland degradation;
- Vulnerability of infrastructure in encroached wetlands to flooding;
- Flooding in areas next to encroached wetlands;
- Damage to ecotourism due to loss of wildlife habitat;
- Economic impacts of poor water quality;
- Economic consequences of contamination of local water supply points such as springs and wells;
- Danger of water borne diseases such as cholera and typhoid, and the economic costs of epidemics;
- Long-term economic damage to agriculture from loss of water catchment areas;
- Long-term economic damage to the timber industry from the depletion of timber stocks;
- Reduced fish stocks due to degradation of wetlands, which are breeding sites for most fish species;
- The costs, long-term and short-term, of illnesses caused by the release of waste products from factories;
- The impact of oil: among other issues, such as the fact that the process of oil extraction requires a great deal of water, putting further pressure on shrinking water resources, and the danger that oil spill, leakage and dumping will contaminate drinking water;
- Air pollution, and
- Economic damage to rural livelihoods through damage to fisheries, vegetation and land quality.

Public 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 WMDP safeguard tools, stakeholder consultations were carried out as part of the ESAS, ESMF and RPF process.

The MWE conducted rapid stakeholder consultations at various levels of governance to solicit information on the implementation of WMDP subprojects. This was undertaken between March 5 to 8, 2012 for the following districts:

- Mukono District which represents the Victoria Water Management Zone;
- Mbale, Butaleja, Kumi, Ngora, Lira and Nakasongola Districts which represent the Kyoga Water Management Zone; and
- Kamwenge District in Western Uganda which shares the largest part of the Mpanga Water catchment that falls under the Albert Nile Water Management Zone.

Consultations were undertaken through the use of 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, it is clear that the WMDP 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, destruction of cultural sites, and employment related to labour camps.

Resettlement is typically addressed during the sub-county development plan as is the environmental screening and impact assessment. EIAs are not commonly undertaken due to the size of subprojects (generally district

level), so EMPs are prepared during project design and costed for in the Bill of Quantities. Monitoring is carried out as part of the subproject's monitoring schedule.

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 WMDP through the various training and capacity building initiatives proposed under Component 3 which are budgeted for under the WMDP ESMF.

Assessment of Trends and Identification of Environmental and Social Priorities

Key trends identified include:

- Natural resource sectors will have difficulty meeting NDP 2010 growth targets.
- Land degradation is widespread and barriers to reverse it are many.
- Forests are under severe pressure from wood fuel demand.
- Biodiversity is threatened by environmental degradation and unsustainable ENR use.
- Water supply sources are threatened by land degradation.
- Wetlands important for water supply and subsistence are being lost.
- Fish catches have declined and stocks appear to be endangered.
- Decentralized capacity to manage natural resource management is undermined by lack of funds and political interference.

Identification of Priorities

Environmental, Social and Governance priorities for the WMDP have been addressed using a priority matrix. Trends and challenges were divided into themes and priority actions were recommended to address them.

Themes included:

- Land degradation
- Water resources availability
- Deforestation
- Climate change and climate variability
- Water quality
- Land use and land management
- Institutional and Governance
- Decentralisation
- Enforcement capacity

Priority actions focused on specific measures that the WMDP can implement to address these trends and ensure sustainability of its long-term objectives.

Recommendations

The following measures are considered integral to enhancing governance in the WMDP:

1. Good governance will rely on the follow through of commitments by the implementing agencies to apply structured policies and practices to the WSS and ENR sector. An example measure is the network of water catchment management organisations that has been developed in recent years by the Directorate of Water Resources Management. The origins of this network go back to the government's decision in 1999 to make integrated water resource management the foundation for water sector management and development. The sector is gradually developing a policy and institutional framework for IWRM, including regulatory, planning and development capacity for information management, planning and infrastructure financing. A significant part of this is the progressive establishment since 2006 of four decentralised water management zones (WMZs) under the MWE's Directorate of Water Resources Management.

2. Another important measure is ensuring that there is transparency and accountability in the funding mechanisms as there has been substantial discussion around the lack of governance and corruption. Establishment of grievance mechanisms for the purpose of addressing such issues is integral to the Project's design.
3. Establishing and building capacity within implementing agencies (regional and local) to address environmental and social governance in the WWS through targeted technical assistance in the form of awareness programs, trainings, and capacity building workshops.

In addition, the Project will apply certain tools which are designed to mitigate against potential impacts and enhance the Project's long term environmental and social sustainability goals. Recommended tools include the UWSS Guidelines, the Environmental Monitoring Template for the W&S Sector, the WMDP ESMF and RPF.

The monitoring indicators outlined in the WMDP ESMF and RPF will be included in the overall monitoring and evaluation of the WMDP to ensure that environmental and social performance is measured in line with the Project's M&E schedule.

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
ADB	Asian Development Bank
BADEA	Arab Bank for Economic Development in Africa
CAS	Country Assistance Strategy
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EAAPP-APL1A	East Africa Agricultural Productivity Program APL1 Uganda Project
ENR	Environment and Natural Resources
CP	Catchment Plan
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
IWRM	Integrated Water Resource Management
JICA	Japan International Cooperation Agency
KOSMP	Kalagala Offset Sustainable Management Plan
LGMSDP	Local Government Management and Service Delivery Program
MWE	Ministry of Water and Environment
MFPED	Ministry of Finance, Planning and Economic Development
NWSC	National Water and Sewerage Company
NDP	National Development Plan
NFA	National Forestry Authority
NEMA	National Environmental Management Authority
NEMP	National Environment Management Policy
NWSC	National Water and Sewerage Corporation
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
ESAS	National Environment and Social Assessment Stocktaking Report of the Water Sector
SIDA	Swedish International Development Cooperation Agency
PIT	Project Implementation Team
UNICEF	United Nations Children's Fund
UWA	Uganda Wildlife Authority
UWASNET	Uganda Water and Sanitation NGO Network
UWSS	Urban Water Supply and Sanitation
UWCAS	Uganda Water CAS
WUC	Water user committee
WMZ	Water Management Zones
WMDP	Water Management and Development Project
WSDF	Water Sector Development Fund

1. INTRODUCTION

The World Bank is supporting the Government of Uganda (GOU) to implement a Water Management and Development Project (WMDP) [the Project] starting in 2013. In order to obtain the Environmental Approval Certification and Funding Approvals and to aid various stakeholders in identifying and effectively managing potential environmental and social impacts of the Project, certain due diligence environmental instruments, namely a (i) Environment and Social Management Framework (ESMF) and (ii) Resettlement Policy Framework (RPF) have to be prepared. These will be developed in accordance with international good practice as well as those of the financing institutions, the World Bank and Danida, and GOU requirements. These instruments will provide practical guidance for the management of potential environmental and social issues associated with future subprojects to be financed under the WMDP.

In addition, to provide current environmental and social context of water resource management in Uganda based on the synthesis of existing analytical work, this Environmental and Social Assessment Stocktaking Report for the Water Sector (ESAS) was prepared².

The ESAS has been carried out under a consultancy by the Ugandan Ministry of Water and Environment (MWE) [the Client] to provide a strategic review of environmental and social issues in the water sector and recommend measures for addressing them in the context of the Project. The MWE and Ugandan National Water and Sewerage Corporation (NWSC) are the implementing agencies for the Project.

1.1 OBJECTIVE OF THE ESAS

The objectives of the ESAS are to:

- Describe the relevant national legislation, sectoral policies, and regulatory framework which will apply to the goals and implementation process of the WMDP;
- Provide an overview of the environmental and natural resources sector in Uganda in view of critical issues which may present challenges to the implementation of the WMDP;
- Provide a strategic environmental and social review of the WMDP, taking into account the potential environmental and social impacts of its implementation, the degree to which it addresses the key environmental concerns of the sector, and its consistency with Ugandan environmental policies and objectives and legislation and World Bank safeguard policies;
- Outline environmental and social priorities of the WMDP taking into account the legal and institutional challenges the Project will face;
- Identify institutional and capacity gaps at the federal, regional and local levels as pertains to environmental and social governance; and
- Recommend to the GOU strategic level enhancements for the environmental and social performance of the WMDP.

The ESAS will take into account findings of the Country Assistance Strategy (CAS) for 2010-2015, the Uganda Water CAS (UWCAS), the Country Environmental Analysis (Oct 2011) and other relevant documentation provided in the bibliography in Annex A.

² The previous drafts of the report were entitled Strategic Environmental and Social Assessment (SESA), however, since the report does not follow a standard SESA outline, the current title was used in the final draft.

It is important to note that the objective of the ESAS is to synthesize data from existing sources and not to replicate information, which is why content in this Report is referenced where applicable in order to stress what is important in relation to the WMDP.

1.2 CONSULTATIONS

Stakeholder consultations were undertaken by the MWE at various levels of governance to solicit information on the implementation of WMDP subprojects. The consultations were carried out between March 5 to 8, 2012 in the following districts:

- Mukono District which represents the Victoria Water Management Zone;
- Mbale, Butaleja, Kumi, Ngora, Lira and Nakasongola Districts which represent the Kyoga Water Management Zone; and
- Kamwenge District in Western Uganda which shares the largest part of the Mpanga Water catchment that falls under the Albert Nile Water Management Zone.

Consultations were undertaken through the use of key informant interviews and focus group discussions. Questionnaires were developed to guide the discussions and community meetings were held at the village level. The WMDP 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.

1.3 PUBLIC DISCLOSURE

According to the World Bank's Access to Information Policy, environmental and social studies, such as the ESAS, ESMF and RPF for the WMDP, procured under World Bank financing shall be publicly disclosed in-country and at the Bank's Infoshop prior to Project appraisal. This allows the public and other stakeholders to comment on the possible environmental and social impacts and concerns related to the Project, and for the Project Appraisal Team to strengthen the necessary provisions needed to ensure environmental and social sustainability of the Project.

Towards this end, the ESAS (and ESMF/RPF) will be publicly released through the World Bank's InfoShop and in public locations in Uganda prior to Project appraisal.

2. PROJECT BACKGROUND AND DESCRIPTION

2.1 BACKGROUND

In 1999, the GOU began a series of reforms aimed at making Integrated Water Resource Management (IWRM) the foundation for water sector management and development. The sector is currently taking steps to build an appropriate policy and institutional framework for IWRM, including regulatory, planning and development capacity for information management, planning and infrastructure financing. The importance of IWRM is further acknowledged in Uganda's National Development Plan (NDP) 2010, the country's strategy for national development for the period 2010/11 to 2014/15.

The NDP (2010) is the first of six 5-year medium-term plans to achieve the Nation Vision that is a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years. The Vision sees Uganda graduate to a middle-income country by 2017. The NDP is the reference for fiscal strategy and lower level government and sector plans. It replaces the Poverty Eradication Action Plan (PEAP) that ended in 2008/09. The theme of the NDP (the six NDPs will have different themes) is: Growth, Employment and Socio-Economic Transformation for Prosperity. Consistent with the PEAP it continues to stress poverty reduction, but greater emphasis is placed on economic transformation, and in particular the removal of the constraints to that transformation. The NDP entails an increase in the number of strategically targeted public investments, which are predicted to have a large impact on the growth in all sectors for an economy-wide nominal growth rate that averages 7.2% per year.

In addition to the general objectives, the NDP has also identified three specific objectives for water resources management and development:

- Ensure that Uganda fully utilizes its water resources for development and guarantees water security;
- Ensure sustainable utilization of water resources to maximize benefits for present and future generations;
- Support the sustainable exploitation of water resources for economic activities.³

2.2 PURPOSE OF THE PROJECT

The proposed WMDP is included in the current Country Assistance Strategy (CAS) of 2010-2015. The CAS supports the Government of Uganda's water and sanitation sector goals for 2015, which are outlined in the National Development Plan (NDP). The indicators for these goals include: access to safe water, water infrastructure functionality, per capita investment cost, access to sanitation, gender, management, water quality, compliance with water permits, and hand washing.

In support of the CAS, the Bank prepared a Uganda Water CAS (UWCAS) that outlines priorities for Bank engagement in Uganda's water sector. The UWCAS identifies limited development of water infrastructure and inadequate water resources management – coupled with natural challenges of hydrological variability and transboundary water resources – as key reasons for the inefficient utilization of water, rising unmet demand, declining water quality, and high vulnerability to water shocks. Environmental degradation and climate change are expected to place additional pressure on Uganda's water resource base. The World Bank is well placed to assist the Government in implementing this reform package due to its: long history of support for sector reforms with MWE in both the water and environment sectors; ability to package financing, technical assistance and

³ Uganda Water CAS, World Bank, 2011.

analytical support; and comparative advantage in addressing cross-sectoral issues and working on joint programs with other partners.

Based on these findings, the WMDP will support the Government's efforts to introduce IWRM by creating an enabling analytical, infrastructural and institutional platform to improve water resource management, improve productivity and service delivery, and reduce vulnerability to water shocks. The World Bank has played a catalytic role in introducing transformational reforms in Uganda. For example, the World Bank funded Small Towns Water Project piloted reforms that have now been rolled out to 75 towns; and the Poverty Reduction Strategy Credit series supported a system of fiscal transfers to local governments that have now been mainstreamed. The WMDP will scale up support for IWRM currently being introduced at a smaller scale through the Nile Basin Initiative and the Lake Victoria Environmental Management Project I & II.

The project will promote integrated water resource management (IWRM). IWRM is predicated on recognizing interdependence of different water uses, including uses for maintenance of environmental services and ecosystem functions, and considering water, land and related resources holistically. It is also predicated on participatory decision making and recognition of the role of a central role of women in managing and safeguarding water resources. Through implementing these principles, the project will contribute to overall environmental and social sustainability of development. It will do so, for example, by through (i) developing and implementing IWRM guidelines for participatory catchment planning, (ii) financing environmental improvement measures rehabilitating or preventing environmental degradation related to water resources, and (ii) implementing environmental and social safeguards in its sub-projects through use of Environmental and Social Management Framework and Resettlement Policy Frameworks.

2.3 PROJECT COMPONENTS

The Project aims to strengthen key institutions to enable effective water development and management; to support the implementation of integrated water resources management through select investments in one or more Water Management Zones (WMZ); and to finance investments in sustainable expansion of Urban Water Supply and Sanitation (UWSS) services, including catchment protection. The Project financing institutions will consider the option of a Sector Investment Loan as well as a results based financing which may complement the MWE's use of performance based instruments (e.g. delegated contracts in the NWSC and output based contracts in Directorate of Water Development).

The Project Development Object is to improve (i) integrated water resources planning, management and development; and (ii) access to and reliability of water and sanitation services in priority areas. The project will contribute to higher-level goals of sustaining natural resources, improving service delivery, and increasing economic productivity.

It is proposed that WMDP activities will be grouped under three components as follows:

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- Component 3: Strengthening Institutions for Effective Project Implementation (USD 3 million)

Component 1 - Investment in Integrated Water Management and Development (USD 40.4 million)

- a. **Sub-component 1.1: Identification, preparation and implementation of selected priority investments through a participatory planning process at the WMZ level. (USD 28 million):** This sub-component will support investment in selected water infrastructure as outlined indicatively in the Table below. Priority investments would be identified in an integrated and comprehensive catchment plan prepared in “hot spot” catchments (see Figure 1) with the participation of representative stakeholders. Investments costing less than \$400,000 (UGX 1 billion) would be implemented through WMZ, using the existing Water Sector Development Fund (WSDF), and larger investments would be implemented through the concerned line department in MWE. The subcomponent would also develop capacity of newly established WMZ organizations to carry out participatory water resource planning in at least one catchment in each WMZ, and to carry out environmental and social due diligence for the proposed investments, including consideration of potential cumulative

impacts. It would strengthen the capacity of the WMZ to carry out stakeholder identification, analysis and consultation through the establishment of Catchment Management Organizations (CMO) in each catchment.

- b. **Sub-component 1.2: Improvement of water resources monitoring and information system covering the whole country (approximately USD 7.4 million).** This sub-component will strengthen and expand the existing monitoring network and develop a comprehensive water information system that will enable the country to make informed decisions regarding water development and management. Activities will include: enhancement of networks for water quality and pollution monitoring; hydrometeorological; and surface and groundwater monitoring. They would also include: equipping the national reference laboratory; and installing or upgrading key elements of the water information system at national level and in each of the WMZs. The development of the water information system would be phased, starting with a detailed study on optimizing its design, and then followed by implementation.
- c. **Sub-component 1.3: Kalagala Offset Sustainable Management Plan (approximately USD 5 million):** This sub-component will support priority activities implementing the environmental offset that complements the Bujagali Hydropower Project. These activities are planned out in the Kalagala Offset Sustainable Management Plan (KOSMP) that was launched by the Government on May 5, 2011, and covers important ecosystem in the catchment of the upper Nile near Jinja. These include afforestation and reforestation, restoration of native vegetation, conservation of sensitive habitats, restoration and protection of Nile banks, promoting environmentally sustainable livelihood strategies, and enhancing the capacities of the national and sub-national entities responsible for implementation of the management plan. These include the water and environment, tourism, local government, gender and social welfare ministries, as well as National Environmental Management Authority (NEMA) and National Forestry Authority (NFA).

Component 2: Investment in UWSS Services and Source Protection (USD 103.0m)

- a. **Sub-component 2.1: Water Supply and Sanitation under NWSC (USD 55.6 million):** This sub-component will construct, improve and expand priority water supply infrastructure and sanitation/sewerage services in the municipalities of Arua, Gulu, Ishaka-Bushenyi, and Mbale. It will also ensure the long-term availability and improved quality of water supply through better source protection. Activities will include: undertaking new or updating existing feasibility studies in each of the respective towns including environmental and social due diligence (EIA/EMP and RAP if needed); detailed engineering designs and the preparation of tender documents for the rehabilitation and construction of new water supply and sanitation infrastructure systems. Priority infrastructure improvements will be identified and a phased approach implemented to ensure sustainable water supply for the years to come. The provision of water and sanitation services for the urban poor will be a key element of the design for each of the four towns, building on lessons from Kampala.
- b. **Sub-component 2.2: Small towns Water Supply and Sanitation implemented by DWD (USD 47.4 million) –** This sub-component will construct, improve and expand existing water supply infrastructure and sanitation/sewerage services in eight towns: Butaleja-Busolwe, Budaka-Kadama-Tirinyi, Kumi-Nyero-Ngora, Rukungiri, Busia, Pallisa, Katwe-Kabatoro and Koboko. In a similar manner to sub-component 2.1 above, activities will involve updating or preparing feasibility studies in each of the respective towns including environmental and social due diligence (EIA/EMP and RAP if needed); detailed engineering designs; tender documents for the rehabilitation and construction of new water supply and sanitation infrastructure systems; and implementation of priority investments. In addition to design and construction of infrastructure, the projects will ensure that efforts to protect the

raw water sources and ensure sustainability of the infrastructure are undertaken. The main types of interventions in these towns will include water supply works, sanitation improvements, storm water drainage, community mobilization, health education, institutional support, engineering services - for design and construction supervision, land acquisition, and source protection. As several of these towns will be in catchments serving NWSC towns identified in 2.1 above, arrangements for coordinating the design and implementation of sub-project activities will be agreed between DWD and NWSC.

Component 3: Strengthening Institutions for Effective Project Implementation (USD 3 million)

- a. **Subcomponents 3.1-3.5: Support implementing agencies to effectively implement the project:** This sub-component will enable MWE to provide oversight to the project and its directorates, DWRM, DWD, DEA and NWSC, to effectively implement and manage the project on a day-to-day basis (including procurement of computers and vehicles, vehicle operations and maintenance, monitoring and evaluation, facilitation of project supervision and review missions, etc.). These sub-components will also support capacity building activities for all key stakeholders including MWE, WMZs and WSDFs, catchment management organizations and District officials. Activities will include support for awareness and training on catchment planning and management, stakeholder engagement and training, and raising community awareness of catchment protection. Other cross-cutting activities will include training in procurement, support to annual financial audits, and implementation of the ESMF, RPF and Governance Action Plan.

2.4 PROPOSED INVESTMENTS

Most of the project physical investments in water resources management and development would include the preparation and implementation of targeted investments in water-related sectors (including construction or rehabilitation of dams, reforestation, re-vegetation of river banks, soil erosion control, other sustainable land management measures as well as small civil works for office construction and rehabilitation).

Water supply and sanitation investments would focus on priority water supply and sewerage investments in NWSC towns including Arua, Gulu, Bushenyi/Ishaka and Mbale and investments in approximately 10 DWD town water supply and sanitation systems (including limited sewerage and sludge management). The implementation of selected activities under the Kalagala Offset Sustainable Management Plan would take place in Kalagala.

Table 2.1 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 & 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

The project 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.

2.4.1 Subproject 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:

- Religious infrastructure;
- Headquarters for cooperatives, groups, or executing organizations;
- Acquisition of equipment for government services. This will be financed if “government services” means services to be provided by the new water management zone offices.
- Administrative buildings (except accommodations for health workers, and primary school teachers)⁴;
- 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;
- Purchase of mechanical equipment (e.g. trucks, tractors)⁵;
- Salaries to any persons other than providers of frontline services;
- Contributions to political parties, trade unions or any other interest groups; and
- Projects that may lead to pollution, deforestation, or other significant environmental problems.

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.

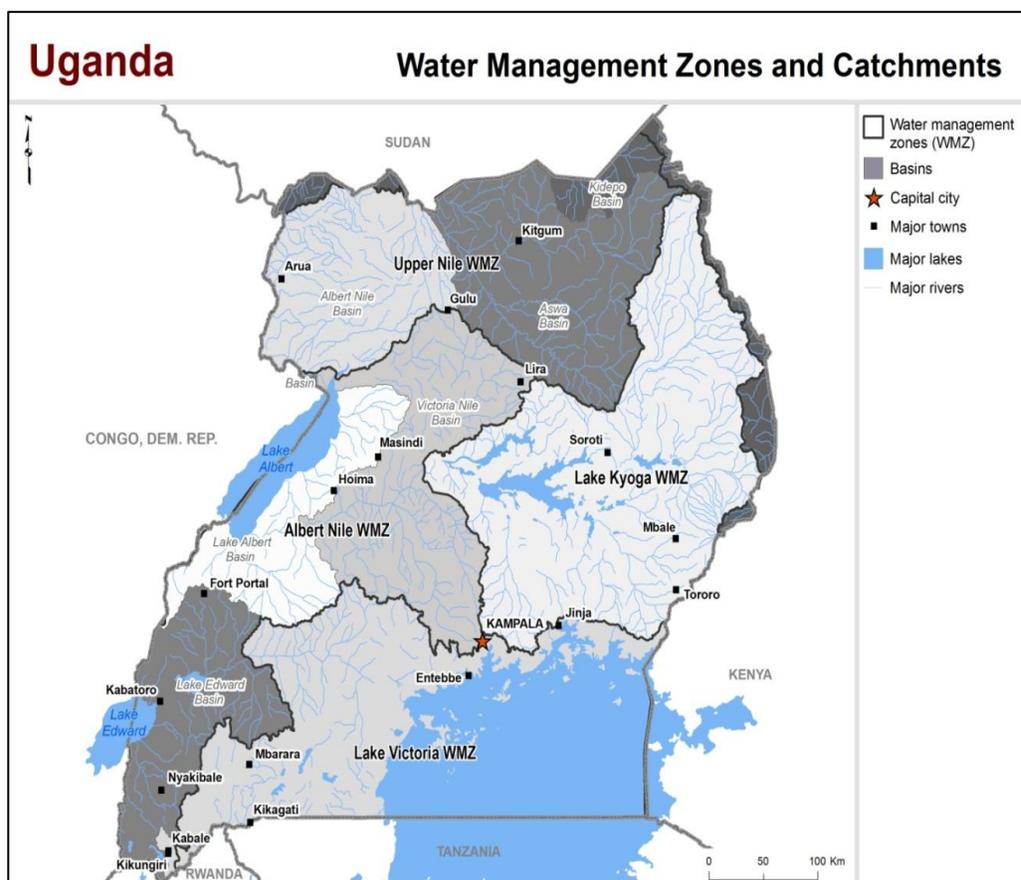
⁴ Water Management Zone offices will be built / refurbished with IDA financing.

⁵ Under the WMDP, some equipment may need to be financed and will be identified during pre-appraisal.

2.5 PROJECT TARGET AREAS

The project will be implemented at national and sub-national levels all over Uganda divided into the four WMZs. The WMZs (refer to Figure 2.1) approximate as far as practicable the boundaries of the eight major hydrologic catchments in the country (with adjustments in delineation made to ensure that a district is not located in more than one WMZ). The four WMZs are the Upper Nile in the North, Lake Kyoga in the East, Lake Victoria in the South, and Albert Nile in the West and Southwest.⁶

Figure 2.1 Water Management Zones and Priority Hotspots Catchments



⁶ Uganda Water CAS, World Bank, 2011.

3. PROJECT IMPLEMENTATION ARRANGEMENTS

3.1 INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

The Project will be implemented by two agencies, the MWE 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 facilitate integration within the sector, an MOU outlining joint responsibilities, will be signed between the implementing agencies and entities responsible for specific activities (e.g. NFA, districts).

Day to day implementation will be carried out by MWE and NWSC. A description of the arrangements for each component is provided below:

- a) **Component 1 – Investment in Integrated Water Management and Development** - will be implemented by several teams. (i) A DWRM team will operate at both central and WMZ level, with staff in each of DWRMs three departments and focal points designated within the respective Water Management Zone. At regional level each WMZ will be responsible for establishing and supporting the CMO and its subsidiary committees. WMZs will have six core professional staff (including a team leader and social scientist) in each of the zones supported by appropriate departments and their respective divisions. The project will support the enhancement of the capability of these WMZ to carry out these functions. (ii) A DEA team will coordinate and support NFA and district governments in Jinja, Kayunga and Buikwe Districts to implement the Kalagala Offset activities (sub-component 1.3.). The implementation support, including procurement and M&E, will be provided to these entities by DEA / MWE on the basis of MoUs, and coordinated by a focal point officer in the DEA quarterly work plans.
- b) **Component 2 – Infrastructure Investments in urban Water Supply and Sanitation/Sewerage and Catchment Protection** - will be implemented by: (i) an NWSC team at headquarters, working in cooperation with staff in branch offices to ensure timely implementation; and (ii) a DWD team operating at central level, working in cooperation with staff in WSDFs at regional level.
- c) **Component 3 – Project Management and Implementation Support** - will ensure adequate management, administrative and logistical support is available to DWRM, DWD, NWSC and DEA for the implementation of their respective sub-components. Each directorate will assign focal points and provide adequate implementation capacity for their respective sub-components. The focal points will be responsible for the day to day implementation of their components as well as for ensuring adequate capacity is available at all levels for project implementation. Overall coordination of the project will be carried out by WSLD which will liaise with relevant departments and agencies to coordinate planning, reporting, supervision, and oversight across departments and agencies involved in the project. A Project Coordinator will be hired to undertake this task with the assistance of a Project Support Team which will assist all components through a team of staff with additional capacity to undertake, reporting, M&E, procurement, financial management, and liaison with the Water and Environment Sector Working Groups (SWGs).

The Project's primary stakeholders are the: a) MWE 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 MWE to develop catchment 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 SWG, 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.

3.2 PROJECT ADMINISTRATION

To the maximum extent possible the Project implementation arrangements utilize existing structures and capacity within the MWE and NWSC. The institutional arrangements are illustrated in Figure 3.1 and detailed below.

Component 1: Investment in Water Resources Development and Management

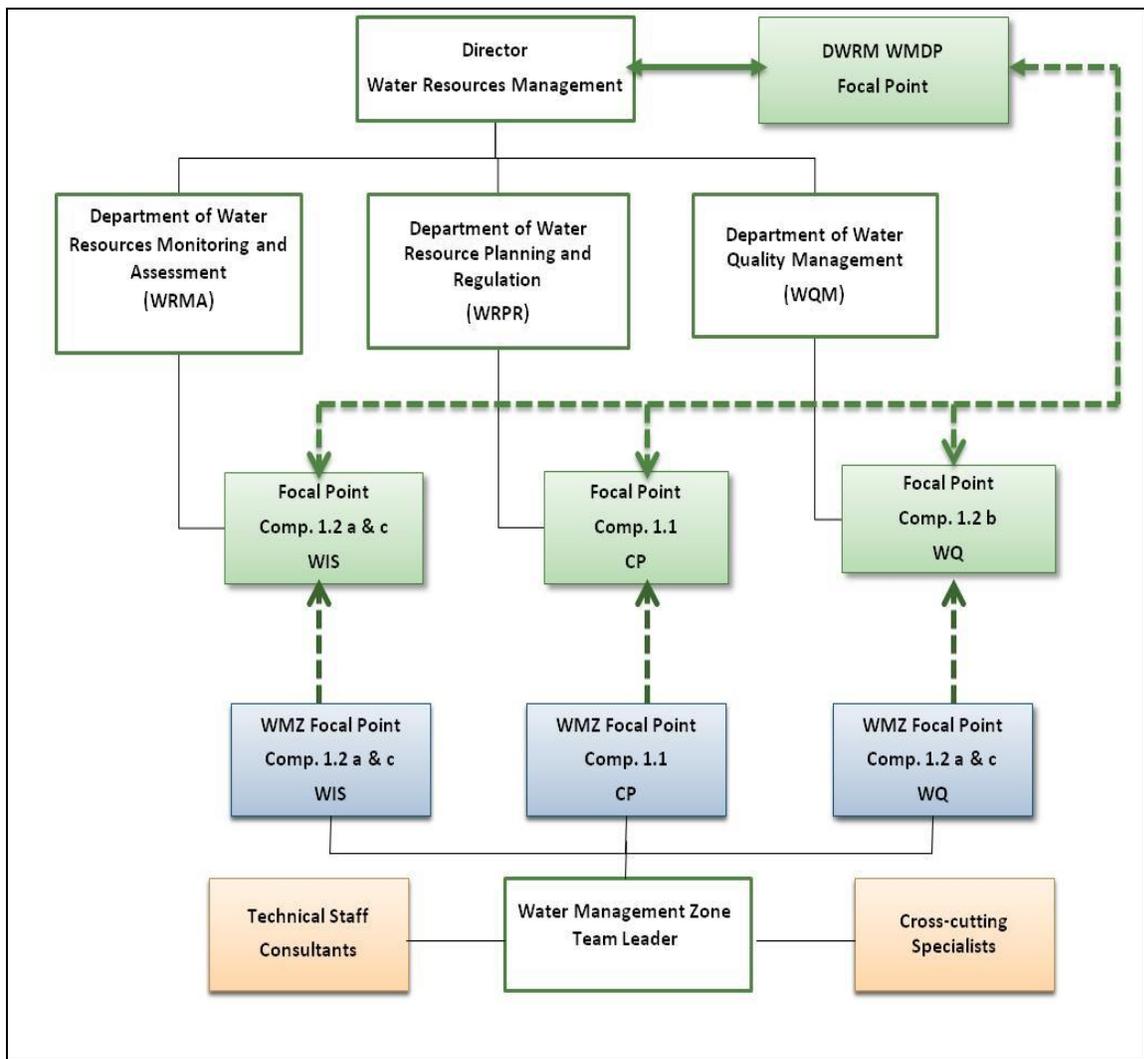
- a) Component 1 will be managed and administered by the Director for Water Resources Management (DWRM). A Focal Point reporting to the Director will be appointed for the overall component who will be responsible for coordinating the activities of the three departments and the WMZs and for consolidating all required reports and annual plans and for regular progress reporting. Each of the DWRM departments will also appoint sub-component Focal Points for their respective sub-component. The WMZ will appoint Focal Points from among its staff that mirrors the Department sub-component Focal Points. The Focal Points will coordinate activities with their respective sub-components and with other sub-components; monitor work progress, implementation of the procurement plan, achievement of sub-component miles and results; and prepare annual work plan in consultation with the activity teams. The Focal Points will also consolidate their respective annual workplans, procurement plans and progress reports.
- b) Arrangements for implementation of the investments and management actions prioritized in the catchment in a plan agreed with the CMO. The Catchment Plan (CP) and its constituent investment and management proposals would be reviewed by Joint Sector Review Committee, which is a body established by the Ministry and the donors to provide a mechanism for technical review and coordination. The final approved plan is then divided into two parts: (i) the proposed management actions would be prepared and implemented jointly by the WMZ and the concerned department within DWRM and the Ministry; and (ii) the proposed investment sub-projects which are to be prepared by the Water Sector Development Fund (WSDF) or the concerned Ministry Departments (DWD or DEA) depending on the current threshold for project implementation. Sub-project financing would be provided by the Project through the DWRM in accordance with an agreed Sub-Project Technical Brief prepared by the WMZ for each proposed investment.

Component 2: Investment in UWSS services and catchment protection

- a) The DWD in the MWE will be primarily responsible for project management activities including for conducting EIAs, monitoring and evaluation, project management support, procurement, financial audits and capacity building.
- b) A Project Implementation Team (PIT) is established in the MWE to implement the small town component and take the coordination responsibility between the other implementing agencies that are involved in the related project activities. Implementation of the catchment

management and protection activities, project activities around the large towns, as well as in towns that are identified to be transferred to the NWSC require coordination among the implementing agencies. The DWRM as the lead institution will take the coordination responsibility.

Figure 3.1: Organization of WMDP implementation arrangements within DWRM



4. UGANDA WATER AND SANITATION SECTOR FRAMEWORK

4.1 WATER SECTOR POLICIES AND PLANS

4.1.1 Overall Water and Sanitation Policy Objectives

The overall policy objectives of the GOU for water resources management, (domestic) water supply and sanitation, and water for production respectively are as follows:

- To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations with the full participation of all stakeholders.
- To provide sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 100% of the urban population by the year 2015 with an 80%-90% effective use and functionality of facilities”.⁷ This is more ambitious than the Millennium Development Goal, which aims to halve the percentage of people without access to safe water by 2015 in Uganda.
- Promote development of water supply for agricultural production in order to modernise agriculture and mitigate effects of climatic variations on rain fed agriculture.⁸

4.1.2 National Water Policy

The National Water Policy (1999) “*promotes an integrated approach to manage the water resources in ways that are sustainable and most beneficial to the people of Uganda*”. The approach is based on the continuing recognition of the social value of water, while at the same time giving much more attention to its economic value. The policy has been developed under the two categories of Water Resources Management and Water Development and Use. With respect to water resources, the Water Policy sets out the guiding principles, strategies (enabling environment, institutional development, planning and prioritization, data collection and dissemination), management functions and structure, roles of the private sector and NGOs, as well as data and information.

The six guiding principles set out with respect to domestic water supply are:

1. Protection of the environment and safe-guarding of health through the integrated management of water resources and liquid and solid waste.
2. Institutional reforms promoting an integrated approach, including changes in procedures, attitudes and behavior and the full participation of women at all levels in sector institutions and in institution making.
3. Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes.
4. Financial viability of public utilities should be assured through sound financial practices, achieved through better management of existing assets, and widespread use of appropriate technologies.
5. Provision of services through demand driven approaches in which users are fully involved and contribute to the cost of facilities and services to promote ownership and sustainability.

⁷ Government of Uganda, Medium Term Budget Paper, 2006.

⁸ Government of Uganda, The National Water Policy, 1999.

6. Allocation of public funds for water supply development activities will take into account that priority is given to those segments of the population who are presently inadequately served or not served at all, and who are willing to participate in planning, implementation and maintenance of the facilities.

The Water Policy also sets out guiding principles for Water for Production (refer to Table 4.1).

4.1.3 Sector-wide approach to planning (SWAP)

A Sector Wide Approach to Planning (SWAP) for the Water and Sanitation Sector was adopted in September 2002. SWAP is a mechanism whereby Government and development partners support a single policy and expenditure programme, which is under Government leadership and follows a common approach. The rural water and sanitation sub-sector is the most advanced in terms of SWAP implementation.

4.1.4 Sub-Sectors

The water and sanitation sector consists of four sub-sectors outlined in Table 4.1⁹:

Table 4.1 Sub-sectors of Water and Sanitation Sector in Uganda

Sub-sector	Role
Water Resources Management (WRM)	The sub-sector is concerned with the integrated and sustainable management of the water resources of Uganda so as to secure and provide water of adequate quantity and quality for all social and economic needs for the present and future generation.
Rural Water Supply and Sanitation (RWSS)	The sub-sector comprises the provision and maintenance of adequate supply of water for human consumption and domestic chores. Sanitation aspects include sanitation promotion and hygiene education in rural communities and schools. End users are responsible for the management, operation and maintenance of their improved water and sanitation facilities.
Urban Water Supply and Sanitation (UWSS)	The sub-sector comprises services for human consumption, industrial use, and other uses to gazetted towns and centres with population of more than 5,000 people. Urban WSS is sub-divided into 43 large and 106 small towns. Large towns are managed by NWSC under a performance contract arrangement with Government. Private operators accountable to the Local Government, through the water authorities manage the small town schemes.
Water for Production (WFP)	The sub-sector refers to water for agricultural production, which includes water for irrigation, livestock, fish farming and rural based industry. Water for production is considered to be an area of increasing importance for Uganda's future development of the agricultural sector in line with the Plan for Modernization of Agriculture (PMA).

⁹ Government of Uganda, Water and Sanitation Sector: District Implementation Manual, 2007.

Sub-sector	Role
	DWD/MWLE and the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) are both responsible for WFP.

4.1.5 Poverty Eradication Action Plan

Poverty eradication remains the central objective of the Government of Uganda. The Poverty Eradication Action Plan (PEAP) provides an over-arching framework to guide public action to eradicate poverty. The PEAP, first published in 1997 and revised in 2000 and 2004 has adopted a multi-sectoral approach and recognises the multi-dimensional nature of poverty. Water and sanitation sector programmes addresses the PEAP objectives. In the revised PEAP (2004) water and sanitation falls under two pillars:

- Pillar 2 – Enhancing production, competitiveness and incomes; and
- Pillar 5 – Human development.¹⁰

¹⁰ Government of Uganda, Water and Sanitation Sector: District Implementation Manual, 2007.

5. PRIORITIES OF THE WMDP

5.1 INTEGRATED WATER MANAGEMENT STRATEGY

In 2005, the Government adopted an integrated water management approach (IWRM) as a part of its water sector reform program. The cornerstone of the MWE's strategy is to devolve planning and water management to the catchment level within an institutional and geographical framework of water management zones (WMZs). WMZs are largely delineated along catchment boundaries and will be the platform for participatory and integrated water resources planning, management and development at the catchment and WMZ levels. As the process of establishing WMZs quickly advances, MWE is concurrently laying the foundation for preparing a National Water Strategy in collaboration with all concerned Ministries (beginning with the National Water Resources Assessment).

5.1.1 Benefits of IWRM

The following has been derived from the MWE District Implementation Manual (2007) to highlight the context in which the WMDP will benefit:

“Most uses of water bring benefits to society but can also have negative impacts. These impacts can be aggravated by poor management practices, lack of regulation or lack of motivation. Every country or area has its priority developmental and economic goals set according to environmental, social and political realities. Problems and constraints arise in each water use area. The willingness and ability to address such issues in a coordinated way is affected by the governance structure of water. Recognising the inter-related nature of different sources of water and thus also the inter-related nature and impacts of the differing water uses is a major step to the introduction of IWRM.¹¹

Specific benefits of IWRM are:

a) Environment

- Ecosystems can benefit from applying an integrated approach to water management by giving environmental needs a voice in the water allocation debate. At present these needs are often not represented at the negotiating table.
- IWRM can assist awareness among different users of the needs of ecosystems and the benefits these generate for them. Often these are undervalued and not incorporated into planning and decision-making.
- IWRM can focus more attention on a system approach to water management: protecting upper catchments (e.g. reforestation, good land husbandry, soil erosion control), pollution control (e.g. point source reduction, non-point source incentives, groundwater protection) and environmental flows. It provides an alternative to a sub-sector competition perspective and can enable stakeholders to develop a shared view and take joint action.

b) Agriculture

- Worldwide, agriculture is the main demand for water and the main non-point source polluter of surface and groundwater resources. This, coupled with the low value added in agricultural production, means that under conditions of water scarcity, water is often diverted from agriculture to other uses. However, indiscriminate reduction in water allocation for agriculture may have far-reaching economic and social consequences. With IWRM, planners are encouraged to look beyond the sector economics and take account of

¹¹ Government of Uganda, Water and Sanitation Sector: District Implementation Manual, 2007.

the implications of water management decisions on employment, the environment and social equity.

- By bringing all sectors and all stakeholders into the decision-making process, IWRM is able to reflect the combined “value” of water to society as a whole in difficult decisions on water allocation. This means that the contribution of food production to health, poverty reduction and gender equity, could over-ride strict economic comparisons of rates of return on each cubic metre of water. Equally, IWRM can consider the reuse potential of agricultural, municipal and industrial wastewaters.
- IWRM calls for integrated planning so that water, land and other resources are utilised in a sustainable manner. For the agricultural sector IWRM seeks to increase water productivity (i.e. more crop per drop) within the constraints imposed by the economic, social and ecological context of a particular region or country.

c) Water supply and sanitation

- Properly applied IWRM could lead to the water security of the poor and unserved being assured. The implementation of IWRM based policies should mean increased security of domestic water supplies, as well as reduced costs of treatment as pollution is tackled more effectively.
- Recognizing the rights of people, and particularly women and the poor, to a fair share of water resources for both domestic and household-based productive uses, leads inevitably to the need to ensure proper representation of these groups on the bodies that make water resource allocation decisions.
- The focus on integrated management and efficient use should be a stimulus to the sector to push for recycling, reuse and waste reduction. High charges for pollution backed by rigid enforcement could lead to highly beneficial improvements in industrial water-use efficiencies, with benefits for domestic water supplies and the environment.
- Sanitation systems often focus on removing the waste problem from the areas of human occupation, thus keeping the human territories clean and healthy, but replacing it with a waste problem, with often detrimental environmental effects elsewhere. Introduction of IWRM can improve the opportunity for introduction of sustainable sanitation solutions that aim to minimise waste-generating inputs, and reduction of waste outputs, and to solve sanitation problems as close as possible to where they occur.
- At a practical local level, improved IWRM leads to greatly reduced costs of providing domestic water services, if for instance more irrigation schemes were designed with a domestic water component explicitly involved from the start.”

5.2 OUTCOMES OF THE WATER COUNTRY ASSISTANCE STRATEGY

The Uganda Water Country Assistance Strategy (Water CAS) aims to assist the GOU in identifying priority actions for building on successful outcomes, tackling remaining challenges, and exploiting opportunities in Uganda’s water sector. The objective of the Water CAS is to define the World Bank’s strategic role in supporting the GOU to better manage and develop its water resources. The recommendations of the Water CAS are complementary to the World Bank Uganda Country Assistance Strategy (CAS), 2011-15 priorities for Uganda and consistent with the country’s development objectives as defined in the NDP and water and related sector plans and strategies, which form the foundation of the World Bank Uganda CAS.¹²

The ‘success’ of specific actions in meeting the objectives depends on the criteria by which they are judged or measured. The NDP and related sector documents highlight the desirability of

¹² Uganda Water CAS, World Bank, 2011.

outcomes that are (i) ‘sustainable’ and (ii) impact at multiple scales. These criteria can be taken as the core ‘principles for prioritization’ as outlined in Figure 5.1.

Figure 5.1 Water CAS: Strategic Choices in the Water Sector

Investment Choices	Sustainability			Scale	
	Economic	Social	Environmental	Growth-oriented	Poverty-targeted
System Storage					
Small (e.g. checkdams)	Light	Light			Light
Large Storage (involving inter-basin transfers)	Light	Light		Light	Light
Groundwater Development					
Drinking water only		Dark			Dark
Multipurpose uses	Light	Dark		Light	Dark
Flood Management					
Structural Measures	Light	Light		Light	Light
Non-Structural Measures	Light	Light		Dark	Dark
Climate Adaptation					
to Historical Variability	Dark			Dark	Dark
to projected Climate Change	Light			Light	Light
Agriculture					
Rainfed	Light	Dark	Dark		Dark
Irrigated	Dark	Light		Dark	
Energy systems					
Small Hydropower (off-grid, mini, micro)		Light			Light
Large Hydropower (on the Nile)	Dark			Dark	Light
Water Supply and Sanitation					
Urban	Dark	Dark	Dark	Dark	
Rural		Dark	Light		Dark
Environmental Services					
Wetland Management	Light	Light	Dark	Light	Dark
Watershed/sustainable land management	Light	Dark	Dark	Light	Light
Biodiversity, Wildlife, and Tourism	Dark	Light	Dark	Dark	Light
Water Quality Management	Light	Light	Dark	Light	Light

Note: the darker the shade, the more the contribution to sustainability and scale criteria.

The Water CAS highlights the need to prioritize interventions in poorest geographical areas. Hence, subsidies will be provided for water services (through construction of small valley tanks and dams) to vulnerable groups, which comprise of subsistence farmers. The subsidies will be managed so that they can be targeted at the poor rather than all farmers (especially since many cattle owners are relatively rich).

5.3 LONG TERM OBJECTIVES OF THE WMDP

It is within the context of the Uganda CAS, Water CAS and IWRM strategy that the WMDP will be prepared. The Project is intended to create an analytical, infrastructural and institutional platform to improve water resource management, protect watersheds and water sources, improve productivity and service delivery, and reduce vulnerability to water shocks. Included in the Project's proposed activities are development of the following:

- An enabling platform of institutional and governance arrangements, structures, systems and business processes in the water resource area, and strengthening institutional co-operation and integration between the entities responsible for management of water resources and the entities responsible for the management of land, wetlands and forest resources;
- A programme of water catchment investments that would include afforestation and reforestation, wetlands protection and boundary demarcation of forests and wetlands; and
- A capacity development programme at all levels (central, water management zone and local) to create a platform for engaging stakeholders during project preparation and implementation and developing a stakeholder communication strategy.

6. LEGISLATIVE AND INSTITUTIONAL FRAMEWORK FOR ENR AND WATER SECTOR

The WMDP will comply with the relevant local laws and requirements as well as the World Bank's safeguard policies which have been triggered, including OP 4.01 (Environmental Assessment) and OP 4.12 (Involuntary Resettlement). The following section describes the various set of laws related to environmental management of natural resources, including local provisions for undertaking EIAs, and laws related to the water sector and outlines the various institutions that are involved in implementing these requirements.

6.1 WORLD BANK SAFEGUARD POLICIES AND REQUIREMENTS

The WMDP has been assigned an EA Category B given that significant adverse environmental and social impacts are not expected due to the nature of the proposed activities. The applicable safeguard policies are:

Yes	If applicable, how might it apply?
[x]	<p>Environmental Assessment (OP/BP/GP 4.01) OP 4.01 is triggered as the project may have potential impacts on the environment. The project will finance rehabilitation and/or expansion of urban water supply and sanitation systems (Component 2), as well updating of the hydrometeorological network and implementation of selected activities under the Kalagala Offset Sustainable Management Plan (Component 1). The project may also finance physical investments in water resources management and development that are identified through a catchment planning process (Component 2) and civil works, e.g., construction and/or rehabilitation of office buildings (Component 3). Compliance will be handled through both a strategic environmental and social assessment (ESAS) and an environmental and social management framework (ESMF). Specific costed EIAs and Environmental Management Plans (EMP) will be prepared as necessary, once the exact locations of those subprojects have been identified.</p>
[x]	<p>Natural Habitats (OP/BP 4.04) OP 4.04 is triggered due to the project location that may include sensitive ecological areas of Uganda like the wetlands, Kalagala Offset, etc, even though activities in these locations are to improve the sustainable management of the offset. Compliance will be handled through the ESMF and site specific EIAs.</p>
[x]	<p>Forests ((OP/BP 4.36) OP 4.36 is triggered due to potential project impacts on and in management of forests. Some of the project's interventions will include implementation of selected activities under the Kalagala Offset Sustainable Management Plan that consist of afforestation and revegetation in the Kalagala area. Compliance will be ensured through the ESMF and EIAs.</p>
[x]	<p>Pest Management (OP 4.09) OP 4.09 is triggered as afforestation in the watershed will likely entail use of pesticides for weed control. The ESMF will ensure that Integrated Pest Management (IPM) is enhanced and that the requirements of OP4.09 are mainstreamed into project implementation.</p>
[x]	<p>Physical Cultural Resources (OP 4.11) The ESMF defines the mechanisms to determine whether there are important physical cultural resources in project areas that will require special protection, and what additional studies will be needed as part of subsequent EIAs. Field surveys and environmental assessments during the feasibility studies will identify any important physical cultural resources that need protection.</p>

- [x] [Involuntary Resettlement \(OP/BP 4.12\)](#)
OP 4.12 is triggered due to potential for land acquisition associated with infrastructure development and limited access to natural resources based livelihoods in protected areas. Compliance will be ensured through the RPF and site specific RAPs.
- [] [Indigenous Peoples \(OP 4.10\)](#)
OP 4.10 is not triggered as there are no known indigenous peoples in the project area of influence.
- [x] [Safety of Dams \(OP/BP 4.37\)](#)
The project is unlikely to include any large dams. The development or rehabilitation of any small dams (i.e. dams smaller than 15m, as per OP 4.37) identified through the catchment planning process will follow required procedures, including ensuring that the structures are designed or upgraded by qualified engineers.
- [] [Projects in Disputed Areas \(OP/BP/GP 7.60\)](#)
OP 7.60 is not triggered as there are no known disputes over the project area of Uganda.
- [x] [Projects on International Waterways \(OP/BP/GP 7.50\)](#)
The Bank/MWE technical evaluation needs to determine that the project will have no adverse impacts on any of the Nile riparian countries. In accordance with OP7.50, the process of notifying the riparian states of the Nile Basin of the proposed project will be completed either directly by MWE or via the Nile Basin Initiative Secretariat. The project encompasses international waters including the River Nile and Lake Kyoga.

6.2 RELEVANT LEGISLATIVE REQUIREMENTS FOR ENVIRONMENTAL MANAGEMENT

6.2.1 The Constitution of the Republic of Uganda, 1995

The Constitution is the supreme law and provides for environmental protection and conservation. Under the National Objectives and Directive Principles of State Policy, the Constitution provides that the state shall promote sustainable development and public awareness of the need to manage land, air, and water resources in a balanced and sustainable manner for the present and future generations.

The Constitution further provides that the utilization of the natural resources of Uganda is to be in such a way as to meet the development and environment needs of present and future generations of Ugandans. In particular, the state is required to take all possible measures to prevent or minimize damage and destruction to land, air, and water resources due to pollution or other causes. Article 39 of the Constitution entitles every Ugandan to a clean and healthy environment. Under Article 17(1) (j) it is the duty of every citizen of Uganda to create and protect a clean and healthy environment.¹³

The Constitution also imposes a duty on the state to protect important natural resources; including land, water, minerals, oil, fauna and flora on behalf of the people of Uganda. In its Article 245, the Constitution provides that parliament shall, by law, provide for measures intended to protect and preserve the environment from abuse, pollution and degradation, to manage the environment for sustainable development; and to promote environmental awareness. Parliament has ably done this through the enactment of the National Environment Act, the Water Act, the Land Act, the Wildlife Act and the Local Government Act, among others.

¹³ National Environmental Management Authority, Review of EIA Application in Uganda, July 2004.

6.2.2 The National Environment Act, Cap 153, 1995

This National Environment Act, Cap 153, of 1995 includes EIA in its general principals as a requirement for proposed projects and activities which may significantly affect the Environment or use of natural resources. The Act also establishes the National Environment Management Authority (NEMA) as the principal agency responsible for supervising, coordinating and monitoring all aspects of the environment, including the review of environmental impact assessments carried out for various projects. The Act empowers NEMA, in consultation with lead agencies, to issue guidelines and prescribe measures and standards for the management and conservation of natural resources and the Environment. To this effect, NEMA prepared Guidelines for EIA (1997) which define the roles of the different stakeholders in the EIA process. Section 19 of the Act imposes an obligation on all developers to carry out EIA for their projects that are likely to have adverse impacts on the environment.

The Act also provides for the establishment of a Technical Committee on EIA and this has been in place since 1996. The Committee provides advisory services to NEMA on critical aspects of EIA implementation.

6.2.3 The National Environment Management Policy

The National Environment Management Policy (NEMP) was developed in 1994 as a follow up to the recommendations of the National Environment Management Action Plan. The NEMP sets out the overall policy goals, objectives and principles for environmental management in Uganda.

The NEMP recommended, among other actions, revision and modernization of sectoral policies, laws and regulations and establishment of an effective monitoring and evaluation system to assess the impact of policies and actions on the environment, the population and economy. The Policy also allowed for the formulation of sectoral or lower level policies concerning environment and natural resources management. Some of the policies that have been formulated in conformity with the NEMP include: the National Water Policy (1999), the National Wetlands Management Policy (1996), the Wildlife Policy (1996), the Fisheries Policy (2000), the Forestry Policy (2001), the draft National Soils Policy, and several District Environment Management Policies.

6.2.4 Environmental Impact Assessment Regulations, 1998

The EIA Regulations elaborate in detail the provisions of the Act and present the details of the EIA process and roles of various stakeholders. The Regulations also stipulate it as an offence for any person to commence, proceed or execute any project without approval from NEMA. The Regulations also advocate for the principle of full disclosure in the conduct of EIAs and makes it an offence to make false statements in an EIA.

6.2.5 The Local Governments Act

The Local Governments Act (1997) specifies functions and services for central government, district councils, urban councils and those to be devolved by the district council to lower government councils. This is in conformity with the constitution of the Republic of Uganda. It builds on the Decentralisation Act (1995).

6.2.6 Public Health Act

The Public Health Act (1964), Cap 269 aims to consolidate the law regarding the preservation of public health. It sets down out the framework for regulation of the pollution of the environment to detrimental limits which can be risky to the health of the population of Uganda.

6.2.7 Land Act

The Constitution of the Republic of Uganda (1995) and Land Act (1998) and set out the various land tenure systems in Uganda. All land is vested in the citizens of Uganda to be owned in accordance with customary, freehold, mailo and leasehold tenure systems. This means that both Government and private owners of land can set up facilities on land they occupy and own. Land tenure issues are critical to the development of water infrastructure. Any location of a water supply project must respect the proprietary rights of the landowner or occupier as protected by the Constitution (1995) and the Land Act (1998).¹⁴

6.2.8 Other Applicable Environmental Regulations and Standards

In order to operationalize the provisions of the National Environmental Act, a number of specific regulations and standards have been developed together with the accompanying guidelines for managing the environment. Those directly applicable to water resources management include:

- Waste Discharge Regulations, 1999;
- Regulations on Environment Impact Assessment, 1998,;
- Regulations on Waste Management, 1999;
- Standards for Discharge of Effluent or Wastewater, 1999;
- Draft Standards for Air Quality, 1997;
- Draft Standards for Noise and Vibration, 1997;
- Minimum standards for the management of soil quality, 2001;
- National Environment Instrument (delegation of waste discharge functions) 1999;
- National Environment Notice (designation of Environment Inspectors 2000);
- The National Environmental Statute, 1995;
- National Policy for the Conservation and Management of Wetland Resources, 1995;
- National Environment (Wetlands, River banks and Lake shore management) Regulations, 2000.

6.2.9 International Treaties and Conventions

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:

- Convention on Wetlands of International Importance especially as Waterfowl Habitat - Ramsar Convention (1971)
- Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)
- Convention on the International Trade in Endangered Species of Wild Fauna and Flora - CITES (1973)
- Convention on the Conservation of Migratory Species of Wild Animals (1979)

¹⁴ Government of Uganda. Resettlement Policy Framework for the WMDP, January 2012.

- Vienna Convention for the Protection of the Ozone Layer (1985)
- Montreal Protocol on Substances that Deplete the Ozone Layer (1987)
- Convention Concerning Safety in the Use of Asbestos (1986)
- Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal

In addition, Uganda has entered into several regional environmental conventions and agreements:

- African Convention on the Conservation of Nature and Natural Resources (1968)
- Lake Victoria Fisheries Organisation (1994)
- Lake Victoria Environment Management Programme
- Kagera Basin Agreement (1997)
- Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin
- Cooperation Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (the Lusaka Agreement) 1996
- Inter-Governmental Authority on Development

6.3 INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

6.3.1 National Environmental Management Authority

The main administrative body for environmental management in Uganda is the National Environmental Management Authority (NEMA). NEMA, which became operational in 1996, was created as the principle agency responsible for oversight, co-ordination, supervision and monitoring implementation and compliance to the EIA requirements and also to champion EIA capacity building in Uganda. Section 6(1) (f) of the Environment Act provides that the Authority is charged with the function to review and approve environmental impact assessments submitted in accordance with the provisions in the Act or any other law. Amongst the many other functions NEMA has, it plays an important role in promoting, encouraging and ensuring enforcement of environmental standards, regulations and the National Environmental Statute (1995).

Within NEMA is found the Department of Environment Monitoring and Compliance, which is responsible for environmental monitoring and ensuring compliance to environmental Regulations and standards. The Department also provides technical guidance on EIA matters and coordinates review of EIAs with other sectors / lead agencies, and provides advisory services to developers on EIA matters. The Department is also responsible for preparation and issuance of EIA certificates and also implements a follow up program to ensure that mitigation measures as contained in the EIAs and approval conditions stated in the certificates of approval are implemented. The Department also carries out training and capacity building on EIA.

The National Environment Act also creates the office of the District Environment Officer who acts as a liaison officer between NEMA and the District and carries out co-ordination of EIA activities at the district level. The recruitment of District Environmental Officers (DEOs) in all districts and their subsequent training in EIA has increased Local Government capacity to contribute to EIA reviews. Prior to the recruitment of the DEOs, however, local Government input into the EIA process was basically nil as there was no direct office responsible for co-ordination of EIA review at that level.

6.3.2 Lead agencies supporting environmental requirements

The role of NEMA in implementation of EIA as stated above does not relieve the relevant line ministries and sectoral departments and other public and private institutions from the primary duty of ensuring that EIA is done for projects and development activities under their jurisdiction and in accordance with their respective sectoral policies, and within the framework of cross-sectoral participation required in the conduct of environmental impact assessments. Each lead agency is therefore primarily responsible for ensuring that EIA is done for development activities under their jurisdiction, as well as carrying out review for EIAs of such projects. This responsibility also includes carrying out inspections related to the environment and implementation of the EIA requirements.¹⁵

Where the review of any one EIA requires holding of a public hearing, the responsible lead agency shall take the lead in co-ordinating and executing the holding of such a public hearing in accordance with the guidelines that have been prepared by NEMA.

6.4 RELEVANT LEGISLATION FOR WATER AND SANITATION SECTOR

The Water Act (1997) provides the overarching legal framework for the use, protection and management of water resources and water supply. The National Water Policy (NWP), adopted in 1999, is the government's guiding policy objective for water resources in the country, including for the provision of water of an adequate quantity and quality.

6.4.1 Water Statute

The Water Statute (1995) provides the framework "...for the use, protection and management of water resources and supply; to provide for the constitution of water and sewerage authorities and to facilitate the devolution of water supply and sewerage undertakings". The main objectives set out in the statute are to¹⁶:

- (a) promote the rational management and use of the waters of Uganda by:
 - progressive introduction and application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources;
 - co-ordination of all public and private activities which may influence the quality, quantity, distribution, use or management of water resources;
 - co-ordination, allocation and delegation of responsibilities among Ministers and public authorities for the investigation, use, control, protection, management or administration of water resources;
- (b) promote the provision of a clean, safe and sufficient supply of water for domestic purposes to all persons;
- (c) allow for the orderly development and use of water resources for purposes other than domestic use, such as the watering of stock, irrigation and agriculture, industrial, commercial and mining uses, energy, navigation, fishing, preservation of flora and fauna and recreation in ways which minimizes harmful effects to the environment; and
- (d) control pollution and to promote the safe storage treatment, discharge and disposal of waste which may pollute water or otherwise harm the environment and human health.

¹⁵ National Environmental Management Authority, Review of EIA Application in Uganda, July 2004.

¹⁶ Government of Uganda, Water and Sanitation Sector: District Implementation Manual, 2007.

6.4.2 Water Resources Regulations and Waste Water Discharge Regulation

The Water Resources Regulations (1998) and Waste Water Discharge Regulation (1998) prescribe the threshold and procedure for applications to construct any works, use water or discharge waste under the Water Statute 1995.¹⁷

6.5 INSTITUTIONAL FRAMEWORK FOR THE WATER AND SANITATION SECTOR

The WSS sector in Uganda is managed through different institutions (refer to Table 6.1). In urban areas, there are two entities engaged in supporting or delivering urban WSS services; the parastatal National Water and Sewerage Corporation (NWSC) and the MWE's Directorate of Water Development (DWD). In practice, NWSC provides services to urban "large towns" while DWD provides WSS services to urban "small towns." The National Water and Sewerage Corporation (NWSC) supplies water and sanitation services to 18 supply areas (which include 23 large towns and 30 satellite areas) with a population of just under 3 million people. Meanwhile, the DWD provides services to just over 200 small towns through 85 water supply schemes, including Municipalities, Town Councils and Town Boards not served by NWSC. Here, development is undertaken by MWE (specifically, DWD); management is overseen by MWE through various mechanisms (including contracts with private operators in 75 of 85 schemes).

Table 6.1 Role and responsibilities of stakeholders in WSS Sector

Institution/agency	Role and responsibilities
Ministry of Water, and Environment (MWE)	The MWE, through the Directorate of Water Development (DWD), is the lead agency responsible for managing water resources, as well as coordinating, regulating and monitoring all water and sanitation activities and providing support services to local Governments and other service providers. DWD regulates water use and waste discharge, supports districts in implementing decentralised water supply and sanitation programmes and implements new construction and rehabilitation of schemes in small towns and rural growth centres. DWD has established eight Technical Support Units to support Districts to build their capacity to implement their sector mandates. DWD is responsible for the development of water supplies for water for production.
National Water and Sewerage Corporation (NWSC)	The NWSC operates and provides water and sewerage services 18 large urban centres assigned to it. 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 towards infrastructure improvements and new investments. The implementation of urban reform aims to create an independent regulatory framework and an Asset Holding Authority, which will affect the future management of urban water and sanitation systems.
Ministry of Finance, Planning and Economic Development (MFPED)	MFPED has the role of mobilising and allocating funds and co-ordination of donor inputs. MFPED reviews sector plans as a basis for releasing allocated funds, and reports on compliance with sector objectives. MFPED also coordinates the planning and reporting to donors.
Ministry of Local Government (MoLG)	The MoLG has the mandate of establishing, developing and facilitating the management of self sustaining, efficient and effective decentralized government systems capable of delivering the required services to the people. It aims to foster good governance and integrated social and economic development.

¹⁷ Water Quality Standards and Guidelines, 2007, MWE/DWD, Government of Uganda.

Institution/agency	Role and responsibilities
Ministry of Health (MoH)	The MoH is responsible for development of the policy on hygiene promotion and sanitation development and ensuring its implementation by concerned stakeholders. The Environmental Health Division (EHD) is the main part of MoH responsible for the provision of support on environmental health to the decentralised structures regarding environmental health.
Ministry of Education and Sports (MES)	The MES is responsible for hygiene promotion and sanitation in primary schools. It works to ensure that schools have the required sanitation facilities and provide hygiene education to the pupils. It also promotes harvesting of rainwater for hand washing after latrine use.
Ministry of Gender, Labour, and Social Development (MGLSD)	The MGLSD is responsible for spear heading and co-coordinating gender responsive development and community development. It assists the different sectors in gender responsive policy development, and supports Districts to build staff capacity to implement sector programmes.
Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF)	The MAAIF is responsible for the development of agriculture, animal husbandry and fisheries and is a major stakeholder in the utilisation of water for agriculture production.
Local Governments	Local Governments (Districts, Towns, Sub-counties) are charged with responsibilities for the provision and management of rural water services, in liaison with DWD/MWE. Local Governments undertake planning, budgeting, resource allocation, community mobilization. They ensure effective participation involvement of end users, follow up implementation by the private sector and support the operation and maintenance of water services. They undertake monitoring, provide accountability and report to DWD/MWE and MFPED. Local Governments, in consultation with DWD/MWE, also appoint and manage private operators for urban schemes outside the jurisdiction of NWSC.
End users	End users are responsible for demanding for and planning improved water and sanitation services. A group of individuals who collectively plan, manage and maintain a point water source is referred to as a Water User Group. WUGs contribute a cash contribution towards construction of water facilities and are responsible for operation and maintenance, including the collection of revenue. A Water and Sanitation Committee (WSC)/Water User Committee (WUC) is the executive organ of a water user group. A WSC/WUC is to be established at each improved water point.
Private sector	The GOU is firmly committed to the privatization process. The private sector, undertakes design, construction, operation, maintenance, training, capacity- building and other commercial services. The private sector is also being considered for mobilizing resources and financing for sub-sector development in the on-going sector reform studies.
Donors	The country has received considerable donor support for funding the development budget including rural water and sanitation programmes.
NGOs/CBOs	NGOs and CBOs are active in the provision of water and sanitation services (construction of facilities, community mobilisation, training of communities and local Governments, hygiene promotion as well as advocacy and lobbying. In August 2006 the Uganda Water and Sanitation NGO Network (UWASNET) had a membership of 150 NGOs/CBOs implementing projects in the sector.

7. ENVIRONMENT AND NATURAL RESOURCES SECTOR TRENDS AND CHALLENGES

In order to better understand the context in which the WMDP will be implemented and the potential impacts it will have on a strategic level, it is important to understand the challenges the Project will have to address on a national scale. Hence, the following section will:

- a) Provide an overview of the environment and natural resources sector in Uganda;
- b) Identify key environmental and social trends; and
- c) Highlight the main environmental, institutional, and governance issues and challenges facing the environment and natural resources (ENR) sector.

7.1 OVERVIEW

7.1.1 Socio-economic Profile

Uganda's population is about 32 million (2010). Growing at 3.5% per year, it has the third highest population growth rate in the world and is predicted to take first place in the coming decades. One quarter of the population currently lives below the national poverty line; and food security is an issue for 62% of the population. The country's population growth is an indicator also used by District and central Government to estimate the levels of and changes to access to improved water supplies and sanitation.¹⁸

Most Ugandans (85%) depend on the agriculture sector, which includes cash and food crops, livestock, forestry and fishing. The sector's real growth has been falling since 2000/01, although it is expected to recover to 2% in 2009/10. Low growth in agriculture relative to the population growth will increase the number of poor, and remove any chance of achieving the Millennium Development Goal for poverty reduction.

The poor are closest to the ENR sector, and the first to suffer the consequences of degradation. Over 95% of Uganda's farmers are cultivating, on average, 2 ha of rain-fed agriculture. Declining yields from cropland degradation, coupled with population growth, has the poorest farmers increasingly farming marginal land. The resultant environmental degradation has reduced the resilience of ecosystems to absorb climate variability and change. Landslides and flooding have become regular events with devastating impacts exacerbated by land or wetland degradation, or deforestation, or some combination of the two.¹⁹

The World Bank estimated Uganda's per capita wealth in natural assets at US\$3400 in 2005, with cropland accounting for most (US\$2485) of that amount. The estimate presents a lower bound because it excludes fisheries and water resources, and the country's newly found oil wealth. A rough estimate of the asset value of oil raises per capita wealth by US\$1240. Oil provides a considerable jump in per capita natural capital. However, cropland remains the country's most important asset.

Uganda's economy is driven by production from renewable and non-renewable natural resources for domestic and export markets. The core natural resource-based sectors are agriculture, manufacturing (fish, meat and other food processing), mining, and tourism. Production from recently discovered oil and gas resources is expected to come online in the near future. According to the Uganda CEA (2011), agriculture – crops, livestock, forestry and fishing – accounts for nearly 24% of total GDP. It supports a large food-processing sector that accounts for about 40% of total manufacturing, and it employs about 80% of the working population.

¹⁸ Government of Uganda, Water and Sanitation Sector: District Implementation Manual, 2007.

¹⁹ Uganda Country Environmental Analysis, World Bank, 2011.

Uganda's natural resources are being depleted and degraded at an unprecedented rate. Forests and woodlands – upon which more than 90% of population depends for energy – are deforested at 90,000 hectares per year or close to 3% annually.²² Wetlands that are essential for environmental services, water resources, and agricultural purposes have shrunk by 30% between 2000 and 2008. Biodiversity and protected areas that drive Uganda's growing tourism industry are under increasing pressure from competing land uses, now including the oil development in the Albertine Graben.²³

7.2 KEY ENVIRONMENTAL AND SOCIAL TRENDS

The Uganda Country Environmental Analysis (2011) illustrates the key trends based on data collected from various government sources. The section below summarizes those trends.

7.2.1 Deforestation

The FAO estimates annual deforestation rate in Uganda to be 2.72% in 2005-2010, 4th highest in the world after Comoros, Nigeria, and Togo. Over the 15 years, from 1990 to 2010, Uganda witnessed a decline in its forest cover from about 20% to about 15% of the total land area (FAO 2010). Some districts have experienced extensive loss of forest cover – e.g. Bugiri district in Eastern Uganda lost 76% of its forest cover, and Nakasongola district lost 43% of its forest cover between 1990 and 2005. Deforestation rate is constantly increasing (2.03% in 1990-2000; 2.39% in 2005-2010, and 2.72% in 2005-2010). Recent estimates (2008) point to an annual loss of 92,000 ha annually. The increased population and growth in the manufacturing sector is putting even more demands on the rapidly declining forest and tree cover in Uganda. About 91% of Uganda's population depends on woodfuel for their energy needs. High levels of deforestation and forest degradation contribute to climate change, as well as increasing frequency of natural disasters, e.g. Bududa landslides.

Timber plantation establishment: Uganda's total plantation area has been steadily depleted, and there are now hardly any mature plantations in the country that can be harvested for timber. Private sector took a lead in establishment of timber plantations with support of the Sawlog Production Grant Scheme, while the National Forestry Authority started tree planting of its own. These initiatives have resulted in an increase in plantation area of 35,000 ha in recent years.²⁴

7.2.2 Land degradation

An additional 5.7% of Uganda's land area is under cultivation as compared to 1990 (NFA 2009). Although this is encouraging in terms of economic development, the clearance of forests and use of marginal lands (e.g. wetlands, steep slopes, etc.) poses a problem resulting in soil erosion and land degradation in many parts of the country (about 36% of Uganda's lands are affected by severe land degradation and 10% by very severe land degradation). Figure 7.2 illustrates land cover in Uganda.

²² FAO, Forest Resources Assessment 2010.

²³ Environment and Natural Resources (ENR) Sub-Sector Overview, LDPG meeting, October 2010.

²⁴ FAO, 2010.

Consumptive use of freshwater for productive agricultural and industrial purposes is still very low in Uganda with less than 1 per cent of the available Total Renewable Water Resources withdrawn annually.²⁸ Whereas significant advances have been made in the last decade in the area of the provision of domestic water to both rural and urban water populations, there is evidence to show that the rate of increase of access to improved water sources has levelled off. The access rate remained at 63 per cent in the rural areas for the FY 2007/8, just as it was in FY 2006/7.²⁹

Given the significant decline in the water sector budget in absolute figures and as a proportion of the national budgets from FY 2004/5 to FY 2007/8, coupled with a rapidly increasing population and partial functionality of the improved water sources, there is a danger that Uganda might not be able to meet the water-related PEAP and Millennium Development Goal targets.

The contribution of Uganda's wetlands is increasingly being recognised in such aspects as water storage, flood impact reduction, flow regulation, ground water recharge, water quality protection and purification, drinking water supply and storage, erosion and sediment control, waste water treatment, recreation, ecotourism, wildlife and habitat function including the provision of breeding environment for fish. There is concern however, that Uganda's wetlands are increasingly being destroyed or converted to other land uses. The main drivers of this conversion process are the rapidly growing population that is still predominantly rural and agricultural, as well as indirect pressures such as lack of institutional capacity at district level to manage wetlands, ignorance of the law and weak enforcement mechanisms.

7.2.4 Water resources availability and utilisation

The MWE estimates that Uganda's total renewable water resources are about 43 million cubic meters (MCM), less than was estimated in the MWE's Sector Investment Plan (SIP) in 2009. About 13% of this is sustainable groundwater (5.67 MCM) and the balance is surface water (37.41 MCM). Virtually all of Uganda's surface water is transboundary (flowing from or flowing to its riparian neighbors). The MWE estimates that about 88% of the Uganda's total surface water resources flow out of Lake Victoria (which it shares with the other Lake Victoria Nile riparians) into the Victoria Nile River (which it shares with its Nile River riparian neighbors downstream).³⁰

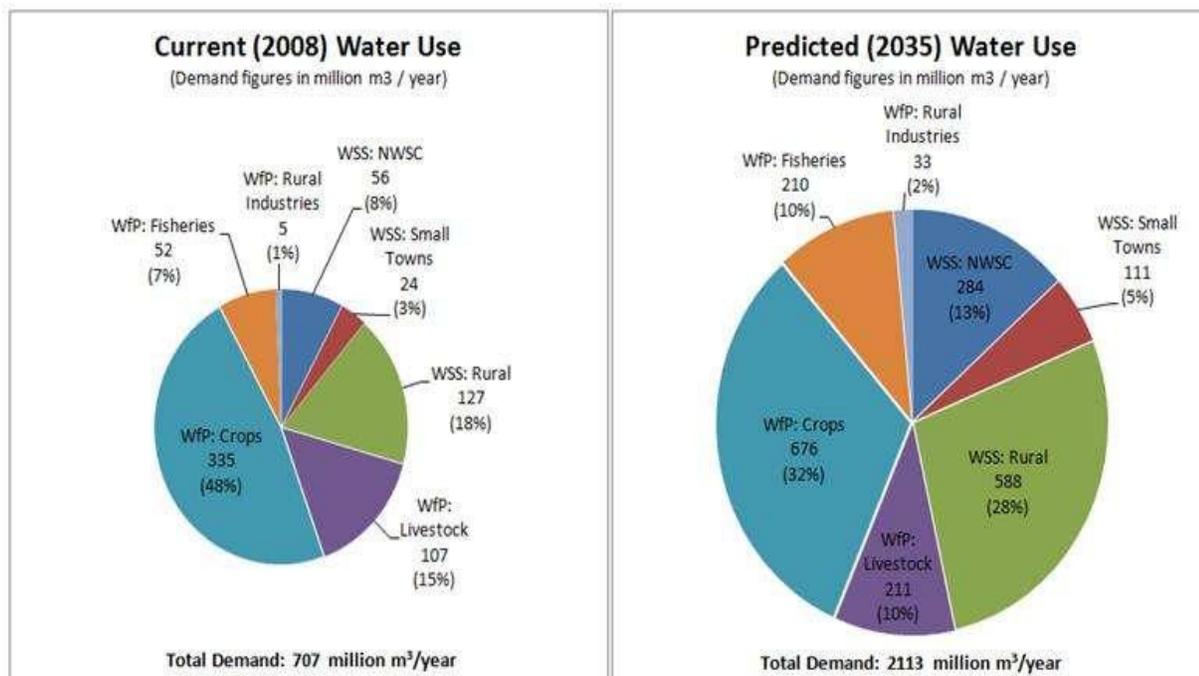
The most recent estimates of current and future water use indicate that total water use will triple from 797 MCM per year to 2,133 MCM per year. By 2035, water use will constitute about a fifth of net water availability (i.e. net of water committed to hydropower in the Victoria Nile River). Projections for 2035 indicate that use of water for agriculture is expected to double (refer to Figure 7.3). However, the percentage of total water use by agriculture declines from 48% to 32% because of the high growth in drinking water use in rural areas, small towns, cities, and fisheries. In each of these areas, water use is projected to increase by between 4 and 5 times.

²⁸ Uganda SOE, MWE, 2008.

²⁹ Uganda SOE, MWE, 2008.

³⁰ Uganda Water CAS, World Bank, 2011.

Figure 7.3 Current and Project Water Use in Uganda³¹



7.2.5 Water quality

The deteriorating trend of raw water in Lake Victoria and other water bodies continues to pose a challenge to water treatment whereas the quality of monitored effluent (municipal and industrial) improved considerably in FY 2007/8 (MWE 2008). The quality of surface and ground water as well as water for domestic consumption is briefly described below.

a) Surface water quality

The quality of surface water in Uganda has been deteriorating over time during the last two decades. Increasing urbanization, population growth and anthropogenic activities have resulted in significant deterioration in the quality of both surface and groundwater in many parts of the country. There are increasing incidences of surface water pollution from both domestic and industrial waste discharges, and run-off from agricultural fields.

The major causes of pollution of surface water bodies, as highlighted in the State of Environment Report (2008) include:

Poor agricultural practices – These contribute significantly to the pollution of surface water bodies in Uganda through increased sediment loads to the rivers due to soil degradation, increased nutrient run-off due to application of agro-chemicals, and contamination by toxic chemicals used for control of weeds and pests. The chemicals either cause eutrophication or are toxic to flora and fauna. Lake Victoria, for example, has become the recipient of increased concentrations of nitrogen and phosphorus, washed down from surrounding plantations of tea, sugarcane and coffee. This has led to the invasion and rapid proliferation of aquatic weeds, especially the water hyacinth, in the lake (MWE, 2008).

³¹ Uganda Water CAS, World Bank, 2011.

Poor sanitation practices - Poor on-site sanitation (pit latrines) and dilapidated sewerage systems significantly contribute to the contamination of both surface and groundwater. The most common sanitation hazard is the poorly constructed pit latrines, which are widely used in the rural and peri-urban areas.

Industrial waste discharge - The industrial sector, though still small, is another source of pollution of surface water bodies due to the discharge of untreated or partially treated industrial effluent into nearby water bodies. The major industries include; breweries, soft drink, sugar, food processing, textile, diary processing, soap, fish processing, paper and tobacco processing industries.

Mining activities - General mining activities in the country are still low and as such do not threaten the general quality of both surface and groundwater. However, the possibility for localized pollution still exists in the areas where the mining is taking place.

b) Groundwater quality

Generally, the quality of groundwater in most parts of the country is of acceptable quality, especially with respect to its inorganic water quality. However, in several areas, groundwater has been observed to contain excess levels of aluminium, chloride, iron, manganese, zinc and hardness. Groundwater in a few areas also exhibits high levels of nitrate and chromium.

Most groundwater problems are attributed to among other factors corrosion of borehole casings and raising mains and seepage of sewage waste. Sewage wastes are generally responsible for elevated concentrations of chloride and nitrate, while corroded pipe work is responsible for the high concentrations of iron, zinc and manganese. In some areas, high concentrations of aluminium, iron, manganese and chromium are also associated with natural weathering of the aquifer matrix. With regard to total dissolved solids, iron and manganese, the quality of groundwater in the regolith aquifer appears to be slightly better than that in the fractured bedrock aquifer.

c) Water quality of domestic water supplies

Although the National Water Quality Management Strategy has placed the responsibility of carrying out routine water quality monitoring on the districts, water quality monitoring in districts is insufficient and data still scarce. In 2006/7, only 1% of the District Water and Sanitation Development Conditional Grant was spent on water quality monitoring.

The 2007/8 water quality surveillance of rural and urban water supplies also raised a number of other issues: of the 653 samples drawn from rural water supplies throughout the country, only 41% were free of faecal bacteria. This is a contradiction, given that the current access to improved water sources in rural areas is 63 per cent (MWE, 2008). In the districts where heavy rains and flooding were followed by outbreaks of water borne diseases, epidemiological data showed a concentration of cases in areas where there was a combination of high water tables and poor environmental sanitation. The studies further showed that water that is safe at the collection point is nearly always contaminated at the consumption point in people's home storage containers.

The key concern in the quality of urban water drinking water supplies continues to be the difficulty of removing organic based colour and dissolved organic substances from the treated water. Aluminium sulphate (alum) is used as the coagulant of choice in treatment systems which include coagulation as it is easy to handle and relatively expensive. However, the worsening raw water quality is making it difficult to obtain satisfactory and cost-effective treatment with alum.

7.2.6 Water resource management

The reasons that Uganda, like many other countries in the world, faces an impending water crisis include:

- Water resources are increasingly under pressure from population growth, environmental degradation, economic activity and intensifying competition for the water among users;
- Pollution is further enhancing water scarcity by reducing water usability;
- Water withdrawals and pollution have increased and Uganda is projected to be water scarce country by 2020;
- Shortcomings in the management of water, a focus on developing new sources rather than managing existing source better, and top-down sector approaches to water management result in uncoordinated development and management of water resources;
- Increasing development means greater impacts on the environment; and
- Current concerns about climate variability and climate change demand improved management of water resources to cope with more intense floods and droughts.³²

Sectoral approaches to water resources management still prevail, leading to fragmented and uncoordinated development and management of the resource. Furthermore, water management is usually in the hands of top-down institutions with limited involvement of lower levels. This, coupled with weak governance aggravates increased competition for water resources. Although Uganda gives first priority to satisfying basic human needs for water, about 40% of the country's population is without access to safe drinking water and about 50% of the population is without access to adequate sanitation. Meeting water supply and sanitation needs for urban and rural people therefore represents one of the most serious challenges the country faces. In an effort to improve food security and increase the incomes of Uganda's population government is focusing on increasing irrigated agriculture. Water is increasingly seen as a key constraint on food production. Conflicts are already being experienced between water for irrigated agriculture, water for livestock and water for other human and ecosystem uses.³³

Ecosystems in the upstream areas of a basin are important for rainwater infiltration, groundwater recharge and river flow regimes. Aquatic ecosystems produce a range of economic benefits, including such products as timber, fuel wood and medicinal plants, and they also provide wildlife habitats and spawning grounds. The ecosystems depend on water flows, and are subject to seasonality, water-table fluctuations and are threatened by poor water quality. Water is negatively affected by environmental degradation in all other ecosystems. Forests and wetlands in particular are known to impact both water supply and water quality. Therefore meeting the water supply development challenge means addressing degradation in these ecosystems.

7.3 ENR SUSTAINABILITY ISSUES AND CHALLENGES

The high population growth rate combined with a predominately agrarian population struggling to survive puts high pressure on Uganda's natural resource base. Soils, forests, water, wetlands and fisheries are at risk to unsustainable farming practices, encroachment in fragile ecosystems, over-harvesting, and pollution (refer to Box 7.1). These issues are further elaborated in this section.

³² Government of Uganda (GOU), Water and Sanitation Sector (WSS): District Implementation Manual, 2007.

³³ GOU, WSS District Implementation Manual, 2007.

Box 7.1 Key sustainability issues in Uganda ³⁴

- Inability to provide a reliable water supply to consumers through newly installed water infrastructure;
- Spiralling water treatment costs because of wetland degradation;
- Vulnerability of infrastructure in encroached wetlands to flooding;
- Flooding in areas next to encroached wetlands;
- Damage to ecotourism due to loss of wildlife habitat;
- Economic impacts of poor water quality;
- Economic consequences of contamination of local water supply points such as springs and wells;
- Danger of water borne diseases such as cholera and typhoid, and the economic costs of epidemics;
- Long-term economic damage to agriculture from loss of water catchment areas;
- Long-term economic damage to the timber industry from the depletion of timber stocks;
- Reduced fish stocks due to degradation of wetlands, which are breeding sites for most fish species;
- The costs, long-term and short-term, of illnesses caused by the release of waste products from factories;
- The impact of oil: among other issues, such as the fact that the process of oil extraction requires a great deal of water, putting further pressure on shrinking water resources, and the danger that oil spill, leakage and dumping will contaminate drinking water;
- Air pollution, and
- Economic damage to rural livelihoods through damage to fisheries, vegetation and land quality.

7.3.1 Land Degradation

An estimated 85% of the rural population depends on land for its livelihood. Over 95% are smallholder farmers cultivating, on average, 2ha of land. The majority has limited capital and knowledge to combat land degradation and adjust to climate variability and change. Agriculture is mostly rain-fed and input use is low. Productivity is low, agricultural sector growth is flagging, and poverty and food insecurity persist. Population pressure coupled with low and declining agricultural yields has the poorest farmers increasingly farming marginal land that is especially prone to degradation.³⁵

According to the CEA (2011), land degradation is widespread and varies according to population pressure and the biophysical characteristics of the landscape. The major human-induced types of land degradation in Uganda in terms of priority include soil erosion, soil fertility decline and habitat loss (MWE, 2006). Soil erosion and nutrient depletion are the result of unsustainable farming and grazing practices, and the loss of vegetation due to fuel wood demand and agricultural expansion (refer to Table 7.1). Declining soil productivity and consequent reduced household incomes do not allow for land investment, even in the form of fallowing. The result is the perpetuation of inappropriate farming practices and increasing encroachment on forest reserves, wetlands and riverbanks.

Around 36% of Uganda is affected by severe land degradation and 10% by very severe land degradation. Based on biophysical factors, four land degradation zones across the country have been identified. These are the Cattle Corridor, Southwestern and Eastern Highlands, Lake Victoria Crescent Region, and Eastern and Northern Uganda. The Cattle Corridor is considered to be the

³⁴ Governance and Anti-corruption in the ENR sector in Uganda, World Bank, 2011.

³⁵ Uganda Country Environmental Analysis, World Bank, 2011.

most affected by land degradation because of its expanse, and because as a semiarid to arid hydro-climatic zone, it is water stressed and its ecosystems are fragile.³⁶

Barriers impeding the reversal or slowing of land degradation are multifaceted. Structural barriers reflect the incapacity of natural resource users to invest. Market and policy failures include the system of land tenure and the lack of land use policies that renders farmers and pastoralists unmotivated to invest. Institutional barriers are those associated with the need for a coordinated effort to address land degradation when the institutions involved are many. Lastly are the barriers associated with political interference and corruption.

Table 7.1 Land Degradation Challenges by Farming System³⁷

Farming system	Area	Land degradation challenges
Intensive-banana coffee system	Shores north of Lake Victoria, Mukono, south-east Mubende, southern Luwero, Ssese Islands, Kampala and Entebbe, Jinja, Iganga, Mpigi, south Kamuli and eastern Masaka and Rakai	Perennial crops and intercropping though advantageous has not stopped soil degradation due to continuous use of small plots that do not benefit from restorative measures; <i>mailo</i> land tenure system
Western banana-coffee-cattle	Bushenyi, Kabale, Rukungiri and parts of Mbarara	Highly fragmented land holdings due to population pressure; alarming deforestation, poor farming practices and steep slopes resulting in soil erosion; customary land tenure
Kigezi Afro-montane (Southwest highlands)	High altitude areas in Kabale and Kisoro as well as the northern slopes of the Muhavura Mts.	Soil fertility is dwindling fast; land fragmentation increasing due to population pressure; contour bunding increasingly eroded for more farmland therefore increased soil erosion leading to land slides
Northern and eastern cereal-cotton-cattle	Apac, Gulu, Kumi, Tororo, Soroti and some parts of Mbale	High wind and water erosion; bunding and fallowing virtually abandoned
West Nile cereal-cassava-tobacco	Arua, Nebbi, Moyo, Adjumani, Yumbe	Declining soil fertility; increased soil erosion

7.3.2 Land policies and land management

The majority of poor farmers and pastoralists do not have the capacity to either invest in their own land, or in off-farm enterprises. The result is that household and farm productivity remains low or declines as land and fodder is continually exhausted. Smallholders who might be able to invest have very limited access to financial products and services. Market access is poor and transportation and transaction costs are high, which puts downward pressure on returns to farmers.

The GOU does not currently have a land use policy in place. There also lacks a rangeland policy or pastoral code for pastoralists who graze their cattle in the dry lands. The land tenure regime is complex and changes frequently due to ad hoc parceling of land to individuals and institutions.

Absentee landlords hold large tracts of land for rent, with no motivation to conserve its fertility. Their tenants have no security and hence no incentive to make investments, and so essentially mine the land. In the last few years there has been cases of conflict between resources users due to the lack of clear property rights and management policies, exacerbated by harsh climatic

³⁶ Uganda Country Environmental Analysis, World Bank, 2011.

³⁷ J. Olson, L. Berry. Land Degradation in Uganda: Its Extent and Impact, 2003.

conditions and dwindling natural resources, particularly water. Conflict has occurred between pastoralists, and between pastoralists and farmers.³⁸

The GOU formulated a land sector strategic plan (LSSP) for the period ranging from 2001 to 2011, to be implemented in two phases. The key issues of sustainable land management addressed by LSSP are: ownership and management of reserved land (forest reserves, national parks, wildlife reserves, lakes, rivers and wetlands) under the trusteeship of government/local government, management of common property resources, individual land use and planning and development of urban areas.³⁹

Subsequently, in March 2011, the GOU prepared the final draft of the National Land Policy aimed at consolidating a number of scattered policies, which exist on various aspects of the land question, but are diverse, sectoral and inconclusive in many respects. Uganda has never had a clearly defined and / or consolidated National Land Policy since the advent of colonialism in the nineteenth century. Post-independence and recent attempts to settle the land question by the Land Reform Decree 1975, the 1995 Constitution of Uganda, and the Land Act 1998 failed to deal with the fundamental issues in land tenure due to absence of clear policy principles to inform the enactment of legislation that offers politically and socially acceptable and technically feasible solutions. The key policy issues touch on (1) historical injustices and colonial legacies, (2) contemporary issues, mainly arising from such legacies; and (3) land use and land management issues.

7.3.3 Forest Resources

According to the CEA (2011), Uganda depends on fuel wood for 92% of its energy. It requires timber and other forest products for construction and domestic consumption. The forests support the biodiversity for a thriving tourism industry. They provide ecosystem services that maintain water quality and supply, and that prevent erosion and dampen the impacts of landslides and flooding. In 1990 Uganda completed a biomass study of the country. The data obtained indicated that between 1950 and 1990, the natural forest cover consisting of tropical high forest, woodlands and forest plantations had declined drastically: over the course of 4 decades 63% of the forest cover had been lost, going from 13.2 to 4.9 million ha. In 1990 forest cover accounted for 24% of the land base.

The most recent biomass inventory for the country (2005) adjusted by ground proofing and extrapolation indicates that the inventory for 2010 stands at about 2.9 million ha (FAO 2010). This represents a 40% loss of forest cover in just two decades. In 2010 forest cover accounts for about 15% of the land base.

The current rate of deforestation (2005-2010) is about 2.7% per year, or some 88,000 ha per year. Most of it occurs on private or communally held forestland, which is nearly 70% of Uganda's forest cover. Public forestland – the permanent forest estate – accounts for 30 percent. It consists of Central Forest Reserves (CFR) managed by National Forest Authority; Local Forest Reserves (LFR) managed by the district governments; and national parks and wildlife reserves managed by the Uganda Wildlife Authority. Between 1990 and 2005, private forest area declined by 34%, while public forests area declined by 11%.⁴⁰

³⁸ Uganda Country Environmental Analysis, World Bank, 2011.

³⁹ N. Banadda. Gaps, barriers and bottlenecks to sustainable land management (SLM) adoption in Uganda, December 2010.

⁴⁰ Uganda Country Environmental Analysis, World Bank, 2011.

FAO estimates that in 2010 Uganda had 51,000 ha of forestry plantations. Since 2005 the planting rate has been about 5000 ha/year and the cutting rate is less than 1000 ha/year.⁴¹ This trend is a reversal of what occurred in the pre-2005 period when cutting exceeded replanting. As a result of that earlier trend, most of the sizeable timber plantations are now below six years old. As the rotation age for harvest for timber is 20 years, it will be a decade or more before these are harvestable. This is of concern because if timber requirements are to be met from domestic plantations, about 4,000 ha are needed for annual harvest, at current levels of demand. The GOU wants to reverse the degradation trend in forestry. In the NDP, the governing objective for the forestry sector is restoration of forest cover to its 1990 level by 2015.

7.3.4 Biodiversity

Uganda is located in an area where seven of Africa's distinct bio-geographic regions or phytochoria converge. Given Uganda's location in a zone between the ecological communities that are characteristic of the drier East African Savannas and the more moist West African rain forests, combined with high altitude ranges (from 600 masl in the Albertine Rift to 5,100 masl in the Rwenzoris), the country has a high level of biological diversity. Uganda possesses a rich natural endowment of forests, mountains, and waterways, as well as some of the richest assemblages of biological diversity in Africa. Recent survey reports reveal the occurrence of 18,783 species in the country harboring 11% of the world's bird species and more than 7% of total world mammals, including the famed Mountain Gorillas⁴². Uganda has pursued an ambitious program of protection and conservation that has resulted in an extensive system of protected areas. This system includes ten national parks, and twenty-nine game reserves, sanctuaries, and controlled hunting areas. The nation's forest reserve estate complements the protected area system, which is also potentially important to biodiversity maintenance.

The principle threats to biodiversity in Uganda include habitat loss, modification and alteration along with unsustainable harvesting, pollution and introduction of alien species. Climate change induced extreme weather conditions will also introduce new threats to biodiversity.

Until the early 1970s, Uganda's protected areas served as the basis for a well-established tourism industry that was the country's third largest foreign exchange earner. Subsequent political strife resulted in the deterioration of a significant proportion of the country's protected area system; wildlife poaching, encroachment in protected areas for food crop production and livestock grazing, and land clearing for human settlement have all taken a heavy toll on the natural resource base. Degradation in the physical infrastructure that had previously supported a vital tourism industry threatened the overall sustainability of the protected area system. Wildlife disappeared, tourism revenues fell, habitat became degraded, and local populations – through poverty and economic necessity – reverted to further non-sustainable use of local resources. In spite of these historical trends, the rather extensive system of protected areas remains in good enough condition that, if properly managed, will provide opportunities for sustained economic growth and local poverty alleviation, as well as to ecological goals such as the maintenance of globally important biodiversity.⁴³

In recent decades, most forest degradation has occurred outside the protected areas. However, protected areas and the biodiversity contained therein are coming under threat in Uganda's Albertine Rift area. This area rich in biodiversity harbors over half of Uganda's protected area and 84 of its centrally managed forest reserves. The reserves are small in size, few exceeding 50 km² but together with the parks, they provide important corridors for biodiversity moving between the parks. Oil and gas development in the area through its direct and indirect impacts threatens the

⁴¹ Uganda Country Environmental Analysis, World Bank, 2011.

⁴² Uganda SOE, MWE, 2008.

⁴³ Uganda Country Environmental Analysis, World Bank, 2011.

integrity of the corridors, and the overall biodiversity of the area. Hence, the issue of forest corridor conservation and restoration is critical for biodiversity conservation in this particular area of the country.

7.3.5 Wetlands

According to the CEA (2011), wetlands represent one of the country's vital ecological and economic natural resources, and constitute about 11 percent of the total land area of Uganda, about 26,000 km². It was estimated in the 1990s that an average of 7.3 per cent of the original wetland in Uganda had been converted to other uses.⁴⁴

The most common wetlands are seasonally wet grasslands – about half of total wetlands area. Seasonally wet woodlands account for 16%; and permanent wetlands – near open water bodies – account for about 15%. It is estimated that wetlands provide some 320,000 workers with direct employment, and 2.4 million people with subsistence employment. Wetlands also provide domestic and livestock water supply. They provide forage for animals, and food security during dry periods. They provide wood fuel, and plant materials for construction and artisanal crafts. Vital wetland ecosystem services include water supply and filtration, groundwater recharge, waste treatment, sediment retention, flood control, and climate modulation.

Wetlands are a common property resource under threat. Population pressure coupled with the absence of effective management structures is causing their degradation. Currently, it is estimated that districts such as Jinja and Mukono have now lost 80 per cent and 15 per cent respectively, of their original wetland. There is a general consensus that the area under wetland coverage is still reducing.⁴⁵ Uncontrolled land reclamation for agriculture, industrial activities, and human settlement are the main factors. Degraded wetlands threaten water supplies, and increase the risk of flooding of the sort that occurred in eastern regions in 2007 and 2010. Wetland resources are particularly important for subsistence activities, hence wetland degradation disproportionately affects the economic security of the poor.

7.3.6 Fisheries

The fisheries sector is a very important source of livelihoods in Uganda. The sector contributed over US\$ 117 million in export revenue in 2007, down from US\$ 142.69 million the previous year. Although the sector's contribution to export revenue declined slightly, the sector continued to provide significant employment opportunities. The sector absorbs over 136,000 artisanal fishermen while more than 700,000 people are employed in secondary and tertiary activities related to fish processing. The sector also provides important sources of protein for the population.⁴⁶

Five major lakes account for the bulk of Ugandan fish catch: lakes Victoria, Albert, Kyoga, Edward and George. Lake Victoria is the most important water body in terms of both its size and contribution to fisheries production. Its share of total recorded catch is about 60%. While the sector employs about 300,000 people directly, there is at least 1.2 million in secondary and tertiary industries. Fish is important for subsistence and food security; it is an important source of protein with a per capita consumption of around 10 kg/person/yr.

In recent years, fish catches have declined. Fisheries sector growth started a marked upward climb in the mid-1990s and peaked in FY 2004/05 when its year over year growth reached 13.5%. After

⁴⁴ Uganda SOE, MWE, 2008.

⁴⁵ Uganda SOE, MWE, 2008.

⁴⁶ Uganda SOE, MWE, 2008.

that period, annual growth became negative but seems to have stabilized in 2009. Catches from Lake Victoria are falling, while those in Lakes Edward and George are almost becoming extinct. Lake Kyoga catches have dropped from 150,000 tons in the 1980s to about 60,000 ton in 2007. Eight out of the previous 18 fish processing factories have closed and others are threatened with closure. The other challenges include degradation of the water environment due to population pressure, pollution and re-invasion by water weeds including the water hyacinth.

Beyond the biological factors, the causes of the decline include inadequate regulatory structures to control destructive fishing practices and illegal fishing gear; and to prevent fishing in, and the destruction of, fish breeding grounds. At current trends, catches are unlikely to sustain the growth rates in domestic or export demand.

7.3.7 Climate change

Global climate change is affecting Uganda and is likely to have direct or indirect impact on the natural resource base (refer to Box 7.1). Impacts include frequent and prolonged droughts, heavy rains and floods, landslides and outbreaks of water-borne diseases. Incidences of malaria have been increasing with the frequent floods.

Box 7.1 Findings of the "Climate Variability and Change in Uganda" study in 2008⁴⁷

Analysis of Historic Climate Variability:

- Climate-related natural disasters, predominately flood-related, have increased markedly in Uganda, indicating an adaptation deficit for natural disasters.
- It is unequivocal that there has been a warming trend in Uganda (at the scale of the country or WMZ and the Lake Victoria Basin) from 1901 – 2006.
- There are no discernible trends in mean annual precipitation, but the Lake Victoria Basin seems to have experienced an increase in the number of wet days, i.e. precipitation days.
- Whilst there is a trend in climate-related natural disasters (which is also a function of inherent human vulnerability), there is no strong evidence that Uganda (at the scale of the country or WMZ) or the Lake Victoria Basin have experienced more year- to-year precipitation variability.

Future Climate Projections:

- Climate models simulate reasonably well the historical mean annual precipitation for Uganda and the Lake Victoria Basin.
 - All models project increased warming and more 'hot' days in the future.
 - There is very strong model agreement that mean annual precipitation, runoff, precipitation during extreme storm events, and precipitation intensity will increase in Uganda and the Lake Victoria Basin.
- Most climate models project that the months outside of the summer (June – August) will experience precipitation increases. Some of the largest increases will likely occur in months that now receive substantial rainfall, e.g. April and October, but precipitation in August, another month with significant rainfall, will likely not change much. Thus, in relative terms, more precipitation will likely occur outside the summer in the future. This combined with increases in summer temperature could lead to water scarcity issues in the summer. Uganda may have dual challenges related to both flood management and water storage.

Impacts of climate change on biodiversity have already been observed in some areas. As a result of global warming, the ice caps on the Rwenzori ranges have largely melted, leading to increased volumes of water in the Semliki River. This has led to erosion; siltation and shifting of the course of the river, which all lead to habitat disturbance, as reported in the Uganda National Adaptation Programmes of Action report (GOU 2007). Species which may be affected include the Mountain

⁴⁷ Westphal, Michael. Uganda and the Lake Victoria Basin: Historic Climate and Future Climate Change. 2010.

Gorilla, alpine and sub-alpine species on the Rwenzoris such as the Giant Lobelia, Tree Senecio, the Rwenzori Leopard the Rwenzori Red Duiker. The Three-horned Chameleon and the Senecio are reported to have already shifted their ranges upwards due to warmer temperatures. Areas around the Rwenzoris have shown consistent air temperature increases of about 0.50 C per decade since the 1960s.⁴⁸

Droughts undoubtedly have adverse effects on biodiversity. Droughts increase the chances of wild fires which destroy a lot of biodiversity. From 1991 to 2000, Uganda experienced seven droughts (GOU 2007). Droughts also result into migration of people into protected areas, migrations of animals, drops in water levels and disruption of the biological clock, especially in reproductive cycles (GOU 2007). The 1998 El Niño floods, also attributed to climate change, caused a lot of habitat disturbance in addition to other economic and health effects. Floods in general destroy fauna and flora with a direct impact on biodiversity.⁴⁹

7.4 INSTITUTIONAL AND GOVERNANCE CHALLENGES

According to the SoE (2008), the framework for environmental governance in Uganda is well elaborated with clear roles for local governments and the center. There have also been well-supported initiatives to strengthen the ENR institutional framework, and improve and enhance policies and laws to reflect current governance concerns.

However, sustainable ENR management is failing in Uganda because of corruption and political interference, and a lack of adequate and reliable funding.⁵⁰ These two factors translate into poor ENR governance. According to the CEA (2011): “Corruption and political interference plagues the entire ENR management hierarchy: from the very top to the bottom. Lack of funding handicaps both central and decentralized ENR institutions, preventing them from realizing their mandates, and in fact increasing their vulnerability to corrupt practices. Transparency and accountability in ENR management is severely absent and public participation in resource use decisions is superficial”. Table 7.2 elaborates on these issues and identifies where the challenges lie.

⁴⁸ SOE, MWE, 2008.

⁴⁹ SOE, MWE, 2008.

⁵⁰ Uganda CEA, World Bank, 2011.

Table 7.2 Strategic Issues and Challenges facing Uganda's ENR and Water Sector

Theme	Issue / Challenge
Local governance	<ul style="list-style-type: none"> Lack of funding to operationalize some of the governance functions, particularly at the local government level. The number of districts has increased lately, making the task of operationalizing decentralized environmental governance systems extremely challenging.
Environmental planning and management	<ul style="list-style-type: none"> Environmental management including planning, monitoring and enforcement is lacking and requires strengthening, particularly at the sub-national level. Institutions responsible for ENR management such as Ministries (MoWE, MTWA, MAAIF, and others), semiautonomous agencies (NEMA, NFA, and UWA), and local governments – are failing to arrest resource depletion and degradation, despite significant past investments in institutional capacity, especially that of the semi-autonomous agencies.⁵¹
Inadequate Funding	<ul style="list-style-type: none"> Funding for environmental management at all levels is very low with some districts having no allocation at all. At the centre, the NEMA and DESS are also under-funded as reflected in their annual Budget Framework Paper submissions. Funding to the ENR sector is severely inadequate. In the last fiscal year, actual payments to the Ministry of Water and Environment for the ENR sector amounted to US\$16 mil, or 0.5% of total government spending. The economic value of ENR goods and services is at least US\$4,441 mil/year, when including only a few ENR un-marketed goods and services. Government is therefore spending less than 0.36% of ENR income to manage the sector. Districts, where the responsibility for ENR management lies, spend under 5% of their budgets on natural resources, and this primarily covers salaries. Mandated district ENR positions are often not filled for lack of funding: a recent survey found that only half of districts had a natural resource officer.⁵²
Lack of capacity and resources	<ul style="list-style-type: none"> Too little emphasis is placed on the sector in terms of analysis, planning and resources. MWE should produce a reasoned economic justification for adequate funding of the sector, showing the contribution that it makes to the economy and the economic costs of ENR degradation. In particular, funding for local government in ENR activities is wholly inadequate and needs to be increased. Staffing & facilities for the institutions responsible for environmental management has always been low both at the centre (DESS) and in the districts. As a result multi-tasking is experienced (with one officer assigned 2-3 offices in the environment sub-sector) and the result is low output and/or effectiveness.
Public awareness and information dissemination	<ul style="list-style-type: none"> Awareness/information on environmental management is one of the major challenges facing the sub-sector. While laws, policies and regulations are in place, penetration to the majority of the public is limited because only a few of these have been translated into local languages. There is inadequate transparency at all levels of government. Media capacities in the ENR field are weak. There is very limited awareness amongst key groups and the public of ENR issues.

⁵¹ Governance and Anti-corruption in ENR sector in Uganda, World Bank, August 2011.

⁵² Uganda CEA, World Bank, 2011.

Theme	Issue / Challenge
Weak enforcement	<ul style="list-style-type: none"> • Capacity for compliance enforcement is challenged as the composition of encroachers has become complex in some situations. Penalties for breaking the law are inadequate and offenders are not required to proportionately pay to make good their damage to the environment. • There is significant political interference in the enforcement of the law.
Policy making	<ul style="list-style-type: none"> • The Government has no up to date ENR policy. The legal framework is fundamentally good. The key weaknesses are poor implementation and law enforcement. Monitoring of policy implementation is weak, and the flow of information between institutions is poor and disjointed. • MWE and the NEMA mandates appear to partially overlap regarding formulation of policies, and regulation and coordination of environmental management in the country. The overlap means that there is some confusion as to who is ultimately responsible for which function. District Local Governments also have a role to play, but little resources to do so.
ENR sector reforms	<ul style="list-style-type: none"> • Reform of the forestry sector in 2004 resulted in creation of the FSSD of MoWE (Forest Sector Support Department), NFA and DFS (District Forest Service) as governing institutions at different levels. FSSD has not been fully operationalized in terms of provision of adequate resources since the moment of its creation, resulting in lack for enforcement in the privately-owned forests and rapid deforestation in these. NFA performed well for the first 4 years; however consequent changes in top management had significant negative consequences for Uganda's protected forest estate. DFS lack capacity and support from the center to perform at an optimal level, especially so in the newly created districts.
Water sector policies/reforms	<ul style="list-style-type: none"> • Overall, water quality in large towns has generally improved and cumulative water storage capacity continues to rise, however, a number of significant challenges remain including: the need to align policy, legislative and regulatory frameworks to lessons and outcomes of current reforms; adapting sanitation solutions to rapidly densifying urban areas; reversing the decline in functioning water supply systems; addressing surface and groundwater pollution; and increasing water-for-production storage capacity.

Other sectors also impact extensively and adversely on ENR, such as:

- Agriculture (rice-growing in wetlands)
- Land (granting titles for protected land)
- Energy (hydroelectric power)
- Economic development (overruling sanctions against polluters)

7.4.1 ENR issues related to decentralization

In 1993, Uganda adopted the decentralization policy as an instrument to deliver sub-national development, with the aim of bringing services closer to the people. Decentralization envisioned good governance, democratic participation and decision control by local communities. Under this policy, planning, budgeting, administration, fiscal management, and administration of justice in local council courts were accorded to district governments.

Environmental management in Uganda is decentralized, consequently much of the analysis focuses on the functionality of local institutions. At district and sub district level capacities for ENR are weak, especially in newly created districts. According to the CEA (2011), districts, sub-districts and parts of DEA lack staff, equipment and skills. This seriously hampers the delivery of national ENR policies.

Linkages between central and local government are inadequate. The capacity of the judicial system to handle ENR cases is low and there is an essential need is to raise the capacity of institutions to deliver. According to the CEA (2011), a common theme is consistent across districts: “There is underfunding and a vicious cycle of limited ENR management capacity to demonstrate the value of natural resource protection to decision-makers, who are responsible for soliciting and allocating funds to support ENR management capacity. The capacity is not available to demonstrate value, so funds are not allocated, and the cycle continues”.⁵³

7.5 ENR ISSUES RAISED DURING STAKEHOLDER 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 WMDP safeguard tools, stakeholder consultations were carried out as part of the ESMF and RPF process.

The MWE conducted rapid stakeholder consultations at various levels of governance to solicit information on the implementation of WMDP subprojects. This was undertaken between March 5 to 8, 2012 for the following districts⁵⁴ (further detailed in Table 7.3):

- Mukono District which represents the Victoria Water Management Zone;
- Mbale, Butaleja, Kumi, Ngora, Lira and Nakasongola Districts which represent the Kyoga Water Management Zone; and
- Kamwenge District in Western Uganda which shares the largest part of the Mpanga Water catchment that falls under the Albert Nile Water Management Zone.

⁵³ Governance and Anti-corruption in the ENR sector in Uganda, World Bank, August 2011.

⁵⁴ The Upper Nile Water Management Zone was not visited as part of this consultation due to a limited budget for consultations.

Table 7.3 Targeted locations for consultations

WMZ	Districts	Municipality	Town Board	Sub-County	Communities
Lake Victoria	Mukono	Mukono	Mukono	Kabibiri	Kasawo
Lake Kyoga	Nakasogola		Wabale		Wabale
	Mbale	Mbale			
	Butaleja			Kachonga	Nabiganda
	Kumi		Kumi Town Board		
	Ngora				Agu
	Lira	Lira		Aromo Lira	Aromo Lira
Albert Nile	Kamwenge			Kahunge	Kahunge

Stakeholder consultations were interactive in nature and targeted at different levels: district, municipal council, sub-county and communities and included the relevant representatives in each, as illustrated in Table 7.4.

Table 7.4 Key stakeholder groups and representatives

Level	Representatives
District	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Municipal Technical Planning Committee (MTPC) Municipal Committees on Water Sanitation and Hygiene Political Wing
Sub-county	<ul style="list-style-type: none"> Sub-county Chief Sub-county Chairperson (LC III) Sub-county Technical Planning Committee
Communities	<ul style="list-style-type: none"> Rural settings Urban setting

Consultations were undertaken through the use of 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, it is clear that the WMDP 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, destruction of cultural sites, and employment related to labour camps.

Resettlement is typically addressed during the sub-county development plan as is the environmental screening and impact assessment. EIAs are not commonly undertaken due to the size of subprojects (generally district level), so EMPs are prepared during project design and costed for in the Bill of Quantities. Monitoring is carried out as part of the subproject's monitoring schedule.

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 WMDP through the various training and capacity building initiatives proposed under Component 3 which are budgeted for under the WMDP ESMF.

A summary of the key issues identified through questionnaires and meetings with stakeholders in these WMZs is presented in Table 7.5.

Table 7.5 Findings of consultations for the 8 Districts within the WMDP targeted WMZs

District	Key Issues and Concerns Raised by Stakeholders
Lira	<p>Environmental screening and management</p> <ul style="list-style-type: none"> • 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 (BoQ) of specific projects. Monitoring checklists are prepared in line with the mitigations measures put in the BoQ. • Monitoring is done by sub-county stakeholder / technical committees and the district authorities. • The District reportedly does the ESIA's 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. <p>Resettlement process</p> <p>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.</p> <p>Capacity gaps and training needs</p> <ul style="list-style-type: none"> • 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. • Other areas needs would involve areas like project management, monitoring, evaluation and reporting; project operational procedures and guidelines as required by Ministry of Local Government. • Finally, sensitization on the emerging issues such climate change variability and its implication on water and environment sector. <p>Key environmental concerns</p> <ul style="list-style-type: none"> • Abandoned borrow pits which accumulate stagnant water and thus form breeding sites for mosquitoes. • Loss of wetland vegetation and interference with stream hydrological cycle in case of dam construction and vegetation clearance during site clearance. • Waste accumulation from excavations and drill sites of which some could be hazardous. • Flooding of the area in case of dam construction.

District	Key Issues and Concerns Raised by Stakeholders
	<p>Key social concerns</p> <ul style="list-style-type: none"> • Displacement of households • Land conflict as the project might be establish in private lands • Destruction of cultural sites • Accidents which are likely to occur during the construction of the project. • Labour camps during the construction process. This would lead to other associated problems such as social disorders eg prostitution, • Labour flux to construction sites as people look for employment and thus deny other sectors such as agriculture manpower consequently leading to food insecurity. <p>Concerns regarding natural disasters</p> <ul style="list-style-type: none"> • Flooding from the construction of dams • Displacement of households • Conflicts over water resource use among the communities • Effects of drought
Mbale	<p>Environmental screening and management</p> <ul style="list-style-type: none"> • 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. • 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. <p>Resettlement process</p> <ul style="list-style-type: none"> • 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. • 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. <p>Capacity gaps and training needs</p> <ul style="list-style-type: none"> • The District Natural Resources Office does not have enough capacity to deal with issues of land acquisition because there is no land valuer 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. • 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
	<ul style="list-style-type: none"> 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	<p>Environmental screening and management</p> <ul style="list-style-type: none"> 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. The sub-county handles most projects which are minor and do not need full EIAs. Sub-counties prepare environment management plans for compliance. 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	<p>Capacity gaps and training needs</p> <ul style="list-style-type: none"> 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. 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	<p>Key environmental and social concerns</p> <ul style="list-style-type: none"> Diseases such as bilharzias, typhoid and malaria were cited as some of the problems associated with water sources in Agu. Safe water sources such as boreholes and protected springs are not available in Agu, which is why people consume stream water. Poor sanitation and hygiene was also cited as a problem due to lack of water. The community also experiences high prevalence of malaria because of the water bodies near the village. Women complain of walking long distances to collect water.
Kamwenge	<p>Environmental screening and management</p> <ul style="list-style-type: none"> Only environmental safeguards are incorporated in district planning. No monitoring data. Monitoring is supposed to be done by the District Environment Officer but is not facilitated. <p>Capacity gaps and training needs</p> <ul style="list-style-type: none"> Lack of information Due to inadequate funding at the district, training of these committees is not a priority Training technical staff in water management
Mukono	<p>Key environmental and social concerns</p> <ul style="list-style-type: none"> Dealing with minor environment impacts such as siltation Drying up of water sources 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;

District	Key Issues and Concerns Raised by Stakeholders
	<ul style="list-style-type: none"> • Social issues include – land availability, ownership, and resettlement. <p>Environmental screening and management Current process involves:</p> <ul style="list-style-type: none"> • Screening of the projects with full participation of the users • 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; • Instead of EIAs, rapid assessments are done for projects with less significant impacts; • Water committees put in place to ensure operation and maintenance is observed; • Community Development Officers sensitize the community on best practices; • Bye-laws to guide use and management have been in put in place; • The Environment officer monitors compliance to these requirements; • Two percent is budgeted at the district for monitoring, but this is insufficient. <p>Capacity gaps and training needs</p> <ul style="list-style-type: none"> • Skills are available within the district for execution of water related projects, however need additional capacity development for resettlement and restoration. • The District has some capacity to conduct involuntary resettlement, compensation and grievance redress, using a multi-sectoral approach and has a draft Disaster Preparedness Plan. However they could rely a lot on the center for backup, including the compensation fund. • The District Environment Committee exists and is catered for in the district budget since it doubles as a Standing Committee for production and natural resources. However at Sub County and in Parishes these are not funded. • Community participation to ensure interests is catered for. • 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	<p>Key environmental and social concerns</p> <ul style="list-style-type: none"> • Environmental problems include: siltation, poor and lack of catchment management, overstocking, over grazing and soil compaction. • Land ownership and access issues sometimes arise. • In many instances communities donate land for water projects. In others Government either uses public land or purchases the land. • Social problems include: diseases, conflict over land, and ownership rights. <p>Environmental screening and management</p> <ul style="list-style-type: none"> • EIAs are being under taken to ensure the needs of the community are addressed. • 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 as a result 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. • An Environment Officer at senior level is in place and s/he ensures that impact studies are conducted before any project work starts. • Sensitization exercises are conducted to communities on various natural resources. • A Water user Management Committee is in place for most water projects; • Conflict and sensitization meetings are common and at times involves the Political Leader e.g. RDC; • A budget for monitoring is set aside.

8. ASSESSMENT OF TRENDS AND IDENTIFICATION OF ENVIRONMENTAL AND SOCIAL PRIORITIES

8.1 ASSESSMENT OF TRENDS

The trends outlined in Section 7 can be categorized into environmental and natural resources, socio-economic and institutional and governance themes. These are inherently interlinked and the drivers for one set of trends can directly and/or indirectly affect the status of another (degradation vs progress). Examples of this under the ENR theme include:

- Land degradation is exacerbated by pollution, urbanization, and deforestation. In turn, this trend affects the GOU's capacity to manage water resources and impacts both water demand and capacity and the standard of water quality.
- Since forests and wetlands act as water catchment areas, they can have implications for the water sector through the construction of new water supply infrastructure without adequate water to flow through it. There are also implications for the energy sector, since declining water supply requires options such as hydroelectric power generation.
- High dependence on ecosystem services combined with few assets and capabilities make poor people particularly vulnerable to ecosystem degradation.

Issues related to institutional and governance trends within the ENR and water sector are linked to the Government's commitment and capacity to manage the country's environment and natural resource base and water resources.

Drivers, as identified in the CEA (2011), include:

- Consistent low funding is a major hurdle to any efforts in terms of effective and efficient environmental management, environmental mainstreaming, and conservation and enhancement of natural resources. The number of donors active in the sector is decreasing as well.
- There is also substantial misallocation and misappropriation of funds at district level due to corruption and political interference. This is difficult to chart, but development partners' experience suggest that the greatest fiduciary risks in the water sector are at local government level, and it seems probable that the same is true of ENR.
- The conduct, approval and issuance of EIAs are fraught with weaknesses and subject to abuse. District Environment Officers are often unable to objectively undertake site visits to verify EIAs and monitor/ follow up on decisions. In many cases, Environment Officers are facilitated by the private sector to conduct these field visits while in others they may have to "rubber stamp" the EIAs simply to fulfill a statutory requirement.

8.2 IDENTIFICATION OF PRIORITIES

In order to prioritize measures needed to address these issues and challenges within the context of the WMDP, it is important to evaluate the significance of the trends outlined in Section 7. This can be achieved through the application of an issues priority matrix. The matrix, provided as Table 8.1, will:

1. Identify and categorize trends and issues by theme;
2. Evaluate the drivers behind these trends, both individually and collectively. Drivers (including demographic changes, economic and societal processes) lead to more specific pressures on the environment (including for example, land use change, resource extraction, emissions of pollutants and waste, and modification and movement of organisms);
3. Rank the significance of the issues on a Low – Medium – High scale; and
4. Recommend priority actions to address these issues.

Table 8.1 Environmental and Social Priorities Matrix for WMDP

General theme	Sector trends	Drivers	Significance ⁵⁵	Priority E&S actions for the WMDP
Social, Environment and Natural Resources				
Land degradation	<ul style="list-style-type: none"> An additional 5.7% of Uganda's land area is under cultivation as compared to 1990. Land degradation is evident in many parts of the country with about 36% of Uganda's lands affected by severe land degradation and 10% by very severe land degradation. Land conversion 	<ul style="list-style-type: none"> Increased population growth that is still predominantly rural and agricultural, as well as indirect pressures such as lack of institutional capacity at district level to manage wetlands, ignorance of the law and weak enforcement mechanisms. 	Medium	<ul style="list-style-type: none"> The ESMF will provide screening tools to identify and mitigate potential E&S impacts related to proposed interventions. Through the Project's Subcomponent 1.3 (Kalagala Offset Sustainable Management Plan), interventions will aim to mitigate against this trend in the offset area.
Water resources management	<ul style="list-style-type: none"> Recent estimates of current and future water use indicate that total water use will triple from 797 MCM per year to 2,133 MCM per year. By 2035, water use will constitute about a fifth of net water availability. Projections for 2035 indicate that use of water for agriculture is expected to double. However, the percentage of total water use by agriculture declines from 48% to 32% because of the high growth in drinking water use in rural areas, small towns, cities, and fisheries. 	<ul style="list-style-type: none"> Uneven spatial and temporal distribution of the water resources coupled with the ever increasing pressure exerted on the resource by rapid population growth, increased urbanization and industrialization, uncontrolled environmental degradation and pollution. 	High	<ul style="list-style-type: none"> Subcomponent 1.1 and Component 2 will mitigate potential negative impacts associated with proposed UWSS interventions using the ESMF tools. In addition, the Project will provide awareness raising on sustainable water use as part of the ESMF capacity building initiatives. The Project should aim to develop a good groundwater knowledge base in call districts and extend surface water, groundwater (level and monitoring) networks, including water quality.

⁵⁵ Significance is determined based on the level of impact these issues/challenges will have on the WMDP objectives; hence the order in which priorities should be addressed.

Deforestation	<ul style="list-style-type: none"> The FAO estimates annual deforestation rate in Uganda to be 2.72% in 2005-2010, 4th highest in the world. Recent estimates (2008) point to an annual loss of 92,000 ha annually. Depletion in timber land production. 	<ul style="list-style-type: none"> Increased population growth Demand for wood products in manufacturing sector Woodfuel for energy consumption Lack for enforcement in the privately-owned forests (64% of all Uganda's forests). 	Medium	<ul style="list-style-type: none"> Key forest governance improvement measures need to be implemented. This can be implemented through awareness raising as part of the proposed ESMF workshops to DWDs/DEAs.
Biodiversity	<ul style="list-style-type: none"> Habitat loss, threats to biodiversity and forest degradation 	<ul style="list-style-type: none"> The principle threats to biodiversity in Uganda include habitat loss, modification and alteration along with unsustainable harvesting, pollution and introduction of alien species. Climate change induced extreme weather conditions will also introduce new threats to biodiversity. 	High	<ul style="list-style-type: none"> The ESMF will provide screening tools to identify and mitigate potential E&S impacts related to proposed interventions. Through the Project's Subcomponent 1.3 (Kalagala Offset Sustainable Management Plan), interventions will aim to mitigate against this trend.
Wetlands	<ul style="list-style-type: none"> Degraded wetlands threaten water supplies, and increase the risk of flooding. 	<ul style="list-style-type: none"> Uncontrolled land reclamation for agriculture, industrial activities, and human settlement are the main factors. 	Medium	<ul style="list-style-type: none"> The ESMF will provide screening tools to identify and mitigate potential E&S impacts related to proposed interventions. Through the Project's Subcomponent 1.3 (Kalagala Offset Sustainable Management Plan), interventions will aim to mitigate against this trend. The Project should also aim to improve wetland knowledge base to support wetland management programs
Climate change and climate variability	<ul style="list-style-type: none"> While full and complete understanding of climate change, its direct causes, impacts and ways of countering those seems to be missing in Uganda, climate change related activities are expanding exponentially. 	<ul style="list-style-type: none"> Impacted by high levels of deforestation and forest degradation Increased frequency of natural disasters 	Low	<ul style="list-style-type: none"> Interventions should focus on improved management of water resources to cope with more intense floods and droughts. Interventions should also mainstream climate resilience into subproject designs.

Water quality	<ul style="list-style-type: none"> The deteriorating trend of raw water in Lake Victoria and other bodies continues to pose a challenge to water treatment whereas the quality of monitored effluent (municipal and industrial) improved considerably in FY 2007/8. There are increasing incidences of surface water pollution from both domestic and industrial waste discharges, and run-off from agricultural fields. 	<ul style="list-style-type: none"> Increasing urbanization, population growth and anthropogenic activities have resulted in significant deterioration in the quality of both surface and groundwater. Poor agricultural and sanitation practices, industrial waste discharge, and localized pollution from mining activities. Attributed to among other factors corrosion of borehole casings and raising mains and seepage of sewage waste 	High	<ul style="list-style-type: none"> Reduce water pollution (e.g. level of COD and BOD) at major hotspots by ensuring that all development is authorized and developers are fully complying with the approved conditions in their certificates of approval. The WMDP ESMF will ensure that subproject screening will identify interventions which require EIAs or EMPs which must be reviewed by NEMA prior to subproject approval.
Land use and land management	<ul style="list-style-type: none"> The majority of poor farmers and pastoralists do not have the capacity to either invest in their own land, or in off-farm enterprises. The result is that household and farm productivity remains low or declines as land and fodder is continually exhausted. Smallholders who might be able to invest have very limited access to financial products and services. Market access is poor and transportation and transaction costs are high, which puts downward pressure on returns to farmers. 	<ul style="list-style-type: none"> Lack of land use policy and rangeland policy/pastoral code in place. 	Medium	<ul style="list-style-type: none"> The Project's RPF will ensure that proposed interventions will avoid and/or minimize to the extent possible involuntary resettlement or displacement. Where land acquisition is required, RAPs will need to be prepared.
Institutional and Governance				
Decentralisation	In the decentralized system, the responsibility of ENR management is fragmented as a crosscutting issue under different sectors, complicating coordination and resulting in low funding and no consolidated impact.	In part this is due to the increasing number of districts which are straining Local Government capacity. This process has created less viable local institutions for ENR management. In addition, apart from water (centrally funded under civil works) and	High	Inter-governmental coordination and collaboration will be supported through the Water and Environment Sector Working Group. Specific measures to target the challenges related to decentralization will not be directly addressed through the WMDP, although priority to do so as part of the larger

		wetlands (funds from PAF conditional grant), management of other ENR is excluded from most GOU grants and funded out of local revenue.		framework is high.
Enforcement capacity	At district and sub district level capacities for ENR are weak.	Districts, sub-districts and parts of DEA lack staff, equipment and skills. This seriously hampers the delivery of national ENR policies.	High	The Project through Component 3 will need to support District Officers in their abilities to carry out their functions and ensure strict enforcement of the law.

9. RECOMMENDATIONS

The key to ensuring the long-term sustainability of the WMDP is to integrate ENR sustainability planning and good governance practices into the Project's design and implementation. In addition, leveraging on the Project's activities to improve integrated water resources planning, management and development will allow the WMDP to address the *“performance imbalance between the ENR and WSS subsectors, while also bringing them closer together to synergize their efforts.”*⁵⁶ The CEA (2011) findings suggest that there is an urgent need for synergies to strengthen the relationship between ENR interventions, water resources management and water supply planning and development.⁵⁷

The Water CAS (2011) and the Uganda CEA (2011) have independently evaluated and documented strategic institutional and sector policy recommendations which fit with the overall framework and design of the WMDP. The ESAS, however, has taken elements of these recommendations, including feedback received during the stakeholder consultations, and identified those which can be applied to the WMDP in the context of ENR – WSS linkages.

Key recommendations for the environmental and social sustainability of the WMDP include:

1. Ensure that appropriate enforcement mechanisms are in place (through an allocated budget for recruiting and training staff) within the DWD and DEA to monitor against sources of environmental pollution; otherwise investments to be made under the WMDP will face environmental challenges which counteract the long-term goals of proposed interventions. For example, implementing a subproject without ensuring that an EIA/RAP has been undertaken and recognizing that Proponent is non-compliant with the local requirements for environmental assessments/permits may result in the subproject facing penalties/fines and delays.
2. Maintain regular monitoring and evaluation of investments and communicate findings to provide baseline data that can be exchanged amongst the Water and ENR sectors and subsectors. This will ensure that information is available to be measured against the required targets of various institutions.
3. Improve the collection of data to be made available at the regional and local level, as currently sharing of data is not systematic which means that districts (both DWD and DEA) are at risk of not having sufficient access to information. The MWE, in coordination with the other responsible institutions, needs to take the lead in developing adequate mechanisms to gather and analyse data, and a need for clear mechanisms for capturing lessons from policy implementation. It should be possible to gather reliable and useful data: for example the size and rate of encroachments; water quality; water treatment costs; the number of visitors to ecotourist facilities; and fish stocks.

An important recommendation noted in the CEA suggests that “the main channel for distribution of ENR project support should build on the water management zone structure created by the MWE, although this should not preclude ad hoc work with other organisations that show themselves competent and capable of delivering particular ENR initiatives.” The WMDP will implement this recommendation through the Project's Component 1, which entails developing capacity of newly established Water Management Zone organizations to carry out participatory water resource planning in at least one catchment in each WMZ.

⁵⁶ Uganda CEA, World Bank, 2011.

⁵⁷ Uganda CEA, World Bank, 2011.

9.1 PROPOSED MEASURES TO ENHANCE ENVIRONMENTAL AND SOCIAL GOVERNANCE IN THE PROJECT

The following measures are considered integral to enhancing governance in the WMDP:

1. Good governance will rely on the follow through of commitments by the implementing agencies to apply structured policies and practices to the WSS and ENR sector. An example measure is the network of water catchment management organisations that has been developed in recent years by the Directorate of Water Resources Management. The origins of this network go back to the government's decision in 1999 to make integrated water resource management the foundation for water sector management and development. The sector is gradually developing a policy and institutional framework for IWRM, including regulatory, planning and development capacity for information management, planning and infrastructure financing. A significant part of this is the progressive establishment since 2006 of four decentralised water management zones (WMZs) under the MWE's Directorate of Water Resources Management.⁵⁸
2. Another important measure is ensuring that there is transparency and accountability in the funding mechanisms as there has been substantial discussion around the lack of governance and corruption. Establishment of grievance mechanisms for the purpose of addressing such issues is integral to the Project's design.
3. Establishing and building capacity within implementing agencies (regional and local) to address environmental and social governance in the WWS through targeted technical assistance in the form of awareness programs, trainings, and capacity building workshops.

9.2 APPLYING ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORKS AND TOOLS

The WMDP will work under the overarching framework of the SWAP. The SWAP is currently being implemented by MWE and aims to improve the efficiency and effectiveness of water sector investments, improve the coherence of approaches employed within the sector and reduce duplication of effort. Environment and Water Sector Working Groups have been established with the objective of bringing stakeholders together to plan, coordinate and evaluate sector outcomes. The SWAP aims to mainstream project and program planning within the GOUs regular planning cycle (NDP, SIP, JWSP) with a view to ensuring that capacity to implement, operate and sustain investments is built into MWE and NWSC structures and systems.⁵⁹

In addition, the Project will apply certain tools which are designed to mitigate against potential impacts and enhance the Project's long term environmental and social sustainability goals.

Recommended tools include the UWSS Guidelines, the Environmental Monitoring Template for the W&S Sector, the WMDP ESMF and RPF.

9.2.1 UWSS Framework and Guidelines

The country has developed a local approach to UWSS that is considered best practice. It involves a tried and tested approach to urban water supply and sanitation management that includes: performance based targets and delegated management contracts for large towns managed by NWSC, and local private sector management contracts (including an output based approach) for small towns supported by DWD. These approaches are captured in sector guidelines that are

⁵⁸ Governance and Anti-corruption in the ENR sector in Uganda, World Bank, August 2011.

⁵⁹ Project Appraisal Document for the WMDP, World Bank, 2011.

currently being updated and will further be refined in the course of the project to increase performance and sustainability. A new feature that will be incorporated through the project will be the inclusion of source identification and protection planning as part of the feasibility and design phase. These measures aim to ensure that adequate water is available for the long term as well as to protect the quality of water supply from pollution or other effects of environmental degradation.⁶⁰

9.2.2 Environmental Monitoring Template for Water and Sanitation

The MWE has developed templates to assist stakeholders monitor environmental and operation and maintenance issues of water points by identifying the major sources of pollution near the water point site and to propose a minimum distance and appropriate standards for the construction of future water points. For the existing water points built in potential areas of pollution, recommendations are given. Use of this template is intended to achieve the following objectives:

- Environmental awareness created among the community/villagers and prevention of further pollution;
- Negative environmental impacts of planned and implemented activities minimized; and
- Potable water is free of contamination.

The template document also provides a recommended monitoring form, which can be used to collect and record information on the water source and location, functionality and community management, and environmental concerns. This template can be found as an Annex in the Water and Sanitation Sector – District Implementation Manual – Version 1 – 31st March 2007.

9.2.3 Environmental and Social Management Framework

The objective of the ESMF is to provide a framework for effective management of environmental and social issues in the proposed WMDP. It seeks to both enhance environmental and social development benefits of the project and mitigate any adverse impacts, in line with GOU and World Bank policies and guidelines on management of environmental and social development issues.

Its purpose 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 (d) provide practical information resources for implementing the ESMF.

Moreover, since the precise locations and potential negative localized impacts of future subprojects could not be identified prior to appraisal, it provides the basis for the preparation of Environmental Impact Assessments (EIAs) and/or Environmental Management Plans (EMPs) as needed for subproject investments.

⁶⁰ Project Appraisal Document for the WMDP, World Bank, 2011.

9.2.4 Resettlement Policy Framework

The RPF has been developed because although the subprojects to be financed under the WMDP are not fully determined at this stage, the nature of the interventions based on the Project's Components 1 and 2 may lead to a degree of land take or restriction of access to sources of livelihood and resources.

Hence, the RPF will be used to screen all interventions for their potential resettlement impacts and streamline all the necessary procedures to follow in mitigating and minimizing resettlement associated with the proposed investments. During implementation of project activities, when required, appropriate resettlement action plans (RAPs) will be developed to address specific impacts, proposed mitigation measures, and compensation issues.

The objectives of the Resettlement Policy Framework are to:

- Establish the resettlement and compensation principles and implementation arrangements for the WMDP;
- Describe the legal and institutional framework underlying Ugandan approaches for resettlement, compensation and rehabilitation;
- Define the eligibility criteria for identification of Project Affected Persons (PAPs) and entitlements;
- Describe the consultation procedures and participatory approaches involving PAPs and other key stakeholders;
- Provide procedures for filing grievances and resolving disputes and;
- Develop an outline for the development of RAPs.

9.3 TARGETS AND INDICATORS

The DWD/MWE has developed a performance measurement framework for the Ugandan Water and Sanitation Sector in order to strengthen the management of the sector (especially at national and District levels), enhance policies and ultimately improve service delivery. The focus of the framework is on the analysis of ten golden indicators on: access to improved water supplies, functionality of water sources, value for money (per capita cost), sanitation, water quality, water for production, equity, hygiene, management and gender. The indicators capture key technical, social and economic aspects of the water and sanitation sector. They are referred to in the GOU's PEAP and are also used as part of the monitoring and reporting processes by local Governments. As part of the Project design, the WMDP will employ similar indicators during implementation, as outlined in the Project Appraisal Document. These include:

Indicator 1: Strengthened institutional capacity for integrated water resources development and management. This indicator will be measured by (i) Number of fully functional WMZs with agreed catchment management and investment plans, and (ii) Percentage of sub-projects designed in line with guidelines for integrating investment preparation with catchment planning principle

Indicator 2: Priority investments and management actions in water infrastructure and related services implemented. This indicator will be measured by (i) number of investments and management actions implemented from agreed catchment plans and (ii) number of investments in improved access and reliability of urban water supply and sanitation services.

The monitoring indicators outlined in the WMDP ESMF and RPF should be included in the overall monitoring and evaluation of the WMDP to ensure that environmental and social performance is measured in line with the Project's M&E schedule.

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ANNEXES

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Annex B: Stakeholder Consultations

Lira District

Type of group: Community

Date: 07/03/2012

No.	Name	Designation	Contact
1.	Omonya John Charles	Parish Chief Amuca	0784-4270110
2.	Odur Paul	V/Chairman Lciii lira	0782-5662452
3.	OJAH victory	speaker	0785-688182
4.	Tom Parakak	C/man Lc1	0782-4788182
5.	Amoka Molly	LC 3 councillor	0774-612084
6.	Olet Denisa	Business man	0757-567481
7.	Otiti Charles	peasant	0788-100109
8.	Akello grace	Peasant	-
9.	Sophia	peasant	-
10.	Okany George	P/chief	0782-642801
11.	Akullu milly	H/A	0782-512125
12.	Okello David	C/man	0781-707975.

Lira District

Type of group: Technical Planning Community (TPC)

Date: 05/03/2012

No.	Name	Designation	Contact
1	Otike pabious	Ag. DNRO	0772-453435
2	Okello Tom R	Ag. ACAO	0772-645922
3	Okello Francis	Dist. Planner	0701-59021
4	Ajungo P	DPMO	0772-332596
5	Hudson Omoko	DWO	0752-5788131
6	Adoko George	CAO	0704606086

Mukono District

Type of group: TOC and Political Leadership

Date: 06/03/2012

No.	Name	Designation	Contact- Telephone/E-Mail
1	Mujuni William	District Natural Resources Officer	0772414509
2	Anne Nalimbugwe	Senior Environment Officer	0772470285
3	Mayanja Henry	ACAO	0776357155
4	Mugisa John	District Engineer	0772476459
5	Kasmoto Tosa	District Healy Inspector	0772481919
6	Njoola Charles	Planner	0712847384
7	Buteraba Eunice	Acting District Water Officer	0772 560867
8	Kumbura James	Deputy Speaker	0772 493030
9	Muhumuza Asuman	Secretary Finance	0772 947560

Mukono District

Type of group: Municipal Officers

Date: 06/03/2012

No.	Name	Designation	Contact- Telephone/E-Mail
1	Kalule James	Act. District Water Officer	0772655259
2	Waswa Kasumba	District Water Officer	0772664411
3	John M.Bhangana	Town Clerk	0772 553474
4	Masenger George	Municipal Environment Officer	0772956502

Mukono District

Type of group: Community

Date: 06/03/2012

No.	Name	Gender	Contact- Telephone/E-Mail
1	Tukundane J	Male	0703072025
2	Mukwaya Nicholas	Male	-----
3	Nakato Lydia	Female	
4	Nakato Fatumah	Female	
5	Ndagire Rehema	Female	
6	Nantume Hadija	Female	
7	Nanono Rehemar	Female	
8	Abudalah Kyeyune	Male	0702146483

Nakasongora District

Type of group: TPC and Political Leadership

Date: 07/03/2012

No.	Name	Designation	Contact- Telephone/E-Mail
1	David Mutahunga Masereka	RDC	0782879613
2	Tince Mark	Deputy CAO	0774030874
3	Wandira M.James	District Chairperson	0772 498828
4	Nsamba David	District Production Officer	0772490353
5	Kawesi Henry	Senior Agriculture Officer	0772894876
6	Mullondo Hussein	Ag. District Water Officer	0772490353
7	Sanyu Phionah	Principal Assistant Secretary	0772464468
8	Okecho Mephah	DIS	0782560417
9	Dr.Eswagu Samuel	District Veterinary Officer	0772492821
10	Masembe Bob	Senior Water Officer	0772575249
11	Kasigwa Robert	Senior Personnel Officer	0772575249
12	Nakamy Sarah	Principal Agriculture Officer	0777525652
13	Katamba David B	CIA	0772604191
14	Mbaagwa Muwonge A.	Town Clerk	0772 663285
15	Sekitende Emmanuel	Urban Water Officer	0772975006

Nakasongora District

Type of group: Community / Water Committee

Date: 07/03/2012

No.	Name	Gender	Designation	Contact- Telephone/E-Mail
1	Sarah Busulwa	Female	Mutuzze	0703222436
2	Nakayagaba Sirivia	Female	Mutuzze	0778705313
3	Busulwa Hannington	Male	Chairman LC1	0703222436
4	Maitek Eriyasafu	Male	Muttuzze	0702014604
5	Makka John	Male	Water Committee member	0772083343
6	Sebufu Jeboph	Male	Muttuzze	0773047175
7	Kayise Zephania	Male	Mutuzze	0787615036
8	Nansusu Brenda	Female	Mutuzze	-
9	Mikeal Mukama	Male	Mutuuzze	-

Kamwnege District

Type of group: Political and Technical Staff

Date: 05/03/2012

No.	Name	Designation	Contact- Telephone/E-Mail
1.	Kamasaka Robert	District Chairperson	0773181587
2.	Magara Nicholas	District Environment Officer	0772504183
3.	Kasango William	District Natural Resources Officer	0782456792
4.	Ahimbisibwe Vincent	Physical Planner	0701234567
5.	Tukamubera Emmily	Secretary for Production and Environment	0712389854
6.	Rujumba Muhemda	Chief Administrative Officer	-
7.	Katagira Kiiza Binyina	Education Officers; Inspection	0772134567
8.	Ninyingira Harriet	Sub-county Chief Kahunge	0782345678
9.	Bahemuka Nelson	Kamwenge Town Council	0779850441
10.	Mubangizi Johnson	Kahunge Township	0773564390
11.	Mutesasira Keneth	Kahunge Township	0775135643
12.	Mutamba Hillary	Parish Chief	0776543321
13.	Mubangizi Africa	Kagazi Gravity Scheme	0778345211
14.	Baryaiza Moses	Rwenzaza Township	0773451232
15.	Katabazi Simon	Rwenzaza Township	0776543290
16.	Bananuka Gabriel	Kahunge Township	0782356754
17.	Bagorogaza Charles	Kahunge Township	0773467321
18.	Tendyebwa Gaudence	Kahunge Catholic Church	0772567708

Kamwnege District, Sub-county Kahunge, Parish Mpanga, Villages Nyamisekye and Buka(II)

Date: 06/03/2012

No.	Name	Gender	Contact
1.	Akankwasa Beatresi	F	-
2.	Nyampenda Perus	F	-
3.	Ngaruye Enock	M	0773265754
4.	Ruseirekyere Bonefasi	M	0775165350
5.	Kayira Lamaki	M	0773265893
6.	Mukamusoni Veneranda	F	-

7.	Koti James	M	0775986110
8.	Tumwebaze Eliyosi	M	-
9.	Owamahoro Rossette	F	-
10.	Shatari John	M	-
11.	Mbinigaba Fred	M	0787734195
12.	Nyabilezi Robert	M	0781226876
13.	Balinda Thomas	M	0773653090
14.	Kazooba Yanasani	M	-
15.	Bazana Bananda	F	=
16.	Turyatunga Felix	M	0777742009
17.	Mpagazehe Grace	F	-
18.	Tibengana Peteronia	M	-
19.	Mugabirwe Scovia	F	-
20.	Kyarisima Medius	F	-
21.	Byarugaba Milton	M	0789134331
22.	Mugisha Donozio	M	0787916675
23.	Ezilon Baguma	M	-
24.	Karuhanga Gregory	M	0777742086
25.	Nzine Hamuza	M	-
26.	Ngabirano Sestoni	M	077845008
27.	Tindyebwa Emmanuel	M	0777742069
28.	Bashaija Irene	F	0771634803

List of People Consulted

 MBALE DISTRICT TECHNICAL PLANNING COMMITTEE			
	Name	Designation	Contact
1	Waniaye John Baptist	DHO	0772503598
2	Khaukha John	PIA	0702960385
34	Nagudi Regina	PO	0772358496
5	Wakube Charles	E/O	0776850018
6	Ayo Julius Peter	DAO	0772903974
7	Simiyu Peter	Ag. SPO	0782494795
8	Wamburu David	Ag. CAO	0782766450
9	Nangosya Willy	DE	0772433883
10	Nanjala Rabecca	TACC Project Manager	0392840426
11	Madoi Ayub	DHI	0776909823
12	Alupo Debora	DHE	0712950908
13	Mubuya Constance	DTB	0783831930
14	Eseuk E. Julius	Accountant	0782425279
15	Wandawa Jennifer	Ag. ADHO MCH/RP	0782134325
16	Ddme Fred M.	DWO	0719038583
17	Watenga Abednego	CCBS	0779038583
 DISTRICT NATURAL RESOURCE OFFICE			
	Name	Designation	Contact
1	Opio Henry Ogeyi	Senior Land Officer	0772632268
2	Wakube Charles	Environment Officer	0752850078
 MBALE MUNICIPAL COUNCIL			
	Name	Designation	Contact
1	Nyaribu Rhoda	Municipal Environment Officer	0772693722
2	Nambafu Fred	Physical Planner	0777912155
3	Kimbowa John	Town Clerk, Mbale	0772434329
 KUMI TOWN COUNCIL			
	Name	Designation	Contact
1	Okurut Vincent	Town Clerk	0783504203
2	Ogutu George W.	Water Officer	0774445661
 AGU COMMUNITY IN NGORA SUB-COUNTY IN NGORA DISTRICT			
	Name	Designation	Contact
1	Atai Margaret		
2	Opio Anthony		
3	Onunya Michael		
4	Olesdag		
5	Ongodia CH		
6	Ojibo Francis		
7	Eriadda M.		
8	Odeke David		
9	Okello Pantaleo		
10	Amugo Conslant		
11	Olupot S. J.		
12	Atai M.		
13	Akiteng		
14	Apedun		
15	Apal S.		
16	Igimu D.		

17	Arima S.		
18	Ajalo M.		
19	Among M.		
20	Asio V.		
21	Amayo A.		
22	Auma J.		
23	Apedun V.		
24	Asio G.		
25	Ogaino Wilson		
26	Opolot Gregori		
27	Emorut Richard		
28	Eria Tom		
28	Otukei		
30	Ongiro Max		
31	Ojangole Silver		
32	Adotu Sakaria		
33	Omedel		
34	Ewangu Augustine		
35	Oluka Joseph		
36	Esiku Sidoru		
37	Opolot John		
38	Mbodo Edward		
39	Ocom Charles Roy		
40	Oginya Bernard		
41	Oguti James		