THE REPUBLIC OF UGANDA

Ministry of Water and Environment

Water and Environment Sector Development Plan 2015/16-2019/20

Contents

List of tables

List of figures

Foreword

The Water and Environment Sector offers strategic contributions to the country's drive towards transformation from a peasant to an industrial and middle income country by 2040. The availability of adequate water resources is central to the hydro-power development, agricultural production and productivity, industrial development, tourism development and mitigation of climate and climate change effects. In addition, a healthy, clean and productive environment is essential for sustainable development because it reflects the balance between the demand and supply of natural resources on one hand and the safe disposal of waste products on the other hand in the development process. This should consequently contribute to the attainment of the national Vision 2040 aspirations including the middle income status in totality as well as the Sustainable Development Goals (SDGs) and NRM Manifesto commitments.

The alignment of the Water and Environment Sector Development Plan (SDP) to the second National Development Plan (NDPII) for the period 2015/16 – 2019/20 builds upon the lessons and experiences learned during implementation of the NDPI with focus on improved service delivery for social economic transformation. By the end of implementation of NDPII, water supply coverage is targeted to increase to 79% and 100%, in rural and urban areas respectively, by ensuring that each village has a safe water supply, that there are increased sanitation and hygiene levels in rural areas, and sewerage coverage in urban areas has increased to 95%; catchment based integrated water resources management is promoted, and that there is an increase in the provision of water for production infrastructure to 38MCM. In order to restore and maintain the integrity of degraded fragile ecosystems, the sector shall increase national forest cover to 18%, increase national wetland coverage to 12 %, increase automation of the climate monitoring network to 40% and increase the country's resilience to the impacts of climate change effects. Construction of surface water storage reservoirs will be undertaken to secure water for multipurpose uses including water for irrigation. This will enhance all-year round agricultural production and food security.

The restoration of degraded ecosystems and protection of productive ecosystems is prioritized. Management of forest reserves and wetlands will be improved to support economic growth that uses natural resources in a sustainable manner, or so-called green growth. Other areas of focus include close monitoring of the environmental effects of oil and gas abstraction activities to the economy, monitoring and management of e-waste and increasing use of chemicals. Similarly, acquisition and operation of modern equipment for meteorological services in the country will be prioritised to ensure that accurate and reliable data is available to support production processes. In addition, efforts will be made to implement the decisions made by the United Nations Framework Convention on Climate Change in order to transform Uganda's society to build resilience to climate change, and an economy based on low carbon power sources for sustainable development. This includes Ministry of Water and Environment commitment and readiness to fulfil the Adaptation Fund and Green Climate Fund requirements and principles in addressing the Environment Social Safeguards (ESS).

The implementation arrangements will build on private sector participation and community involvement, while Central Government will continue directing funds and capacity development programs to support local governments and regionally de-concentrated institutions in efficient and effective service delivery to the beneficiaries. The sector has identified strategic objectives and interventions plus key outcome indicators necessary to measure the progress towards achievement of the overall objectives set out for the NDPII. The investment requirement for 5 years is estimated at UGX 9,634.7 trillion. This translates into an average of UGX 1,926.9 trillion required per year in order to achieve the expected planned targets. It is important that this funding level is mobilized in the forthcoming Medium Term Expenditure frameworks (MTEFs) to enable the sector provide its due contribution to the overall national objective of transformation and reaching middle income status.

I would like to thank all the stakeholders for their efforts to prepare this Sector Development Plan and its alignment to the second National Development Plan. The process was consultative and involved the ministry Top Management, Sector Working Group and inter-sectoral meetings coordinated by the National Planning Authority to review the drafts. Development Partners participated in the process by providing comments and input which was duly incorporated, leading to ownership and readiness by all stakeholders to implement the programs herein for sustained benefits to the economy.

Hon. Sam Cheptoris,
MINISTER OF WATER AND ENVIRONMENT

Executive summary

The water and environmental resources are critical in national transformation and sustainable development. Uganda's economy is dependent on its stock of environment and natural resources, calling for significant investments in water development and natural resources management if the country is to achieve its goals focusing on attainment of a middle income status. Water and the environment are central in contributing to the achievements of NDP goals, most especially the goal on Sustainable Production, Productivity and Value Addition in Key Growth Opportunities. Broadly, the availability of adequate water resources is critical to hydro-power development, agricultural production and productivity, livestock, fisheries, health, industrial development, tourism development and mitigation of climate and climate change effects. Similarly, a healthy, clean and productive environment is essential in boosting wealth creation for social transformation and sustainable development. Besides, climate change is already affecting most of the major drivers of the economy including water availability in the country.

Key Sector Priorities and Interventions in the Sector for the Period 2015-2020

In order to meet the over-arching aims of socio-economic transformation, NDPII identified water and environment sector specific priorities and interventions for the period 2015/16-2019/20 that constitute the strategic direction towards addressing national challenges, in line with the Vision 2040 and Sustainable Development Goals (SDGS). These priorities are:

i. To increase access to safe water in rural and urban areas to 79% and 100%, respectively by ensuring that each village has a safe water source; increasing sanitation and hygiene levels in rural, and sewerage coverage in urban areas to 95%; increasing functionality of water supply systems and promote catchment based integrated water resources management.

ii. To increase the provision of water for production facilities, and increasing the functionality and utilization of water for production facilities from the current 27.8MCM to 38MCM by 2019/20.

iii. To protect, restore and maintain the integrity of degraded fragile ecosystems, increase national forest cover to 18%, increase national wetland coverage to 12%, increase automation of climate monitoring network to 40% and increase the country's resilience to the impacts of climate change

The NDPII Sectoral Objectives and Priority Interventions

In a bid to increase water coverage and improved environment management, the sector identified specific sector strategic objectives and interventions under NDPII to which the Water and Environment Sector subscribe to implement during the five year period 2015/2016-2019/2020. The specific strategic objectives and interventions for the sector are described in the following sections.

i. Environment and Natural Resources

The NDPII considers the Environment and Natural Resources Sub-Sector as an enabler for socio-economic transformation of the country. The sustainability of key drivers of the economy such as electricity, roads, tourism and agriculture depends on sustainable utilization and management of environment and natural resources. Over the NDPII period, the Environment and Natural Resources Sub-Sector will therefore focus on rational and sustainable utilization of natural resources and development and effective management of the environment. This will be achieved through restoration and maintaining the integrity and functionality of degraded fragile ecosystems, increasing the sustainable use of environment and natural resources, increasing wetland and forest coverage, building resilience for adaptation to climate change etc. The key strategic interventions can be stated for each objective as follows:

i. **Restore and maintain the integrity and functionality of degraded fragile ecosystems** - Strengthen compliance with, and enforcement of environmental and natural resources legislation and standards at all levels, develop and implement programs for restoration of

degraded fragile ecosystems (river banks, bare hills, range lands and lake shores), and promote Payment for Ecosystem Services (PES).

ii. **Increase the sustainable use of Environment and Natural Resources (ENR) -** Promote value addition to ENR goods and services, support development of database systems for ENR, support green economy initiatives including integration of environmental sustainability into planning and implementation of development processes, strengthen research on economic, ecological and socio-cultural values of ecosystems and biodiversity, promote hazardous and e-waste management including the establishment of waste management infrastructure, strengthen and develop national, regional and international partnerships and networks in environmental and natural resources management, promote the sustainable development of oil and gas, implement national biodiversity and bio-safety targets, increase public awareness on ENR opportunities, green economy and sustainable consumption and production practices and support the decentralized environment management function at the local government level.

iii. **Increase wetland coverage and reduce wetland degradation** - Demarcate, restore and gazette wetland ecosystems countrywide, develop wetlands management plans for equitable utilisation of wetland resources countrywide, promote the protection and restoration of wetland ecosystems, expand the knowledge base of the ecological and socio-economic value of wetlands among stakeholders, develop markets for wetland products and services, build an institutional and technical capacity in wetland management in government, both central and local, and develop and operationalize legal and governance mechanisms for suitable wetlands management.

iv. **Increase the functionality and usage of meteorological information systems** - Refurbish, modernize and develop meteorological stations, develop the guidelines and regulations for operationalizing the Uganda National Meteorological Authority Act, develop the policy, and strengthen the legal and institutional framework for meteorological services, develop and implement awareness programs on the importance and use of meteorological services, design, develop and implement early warning products in support of climate change adaptation, and strengthen research on future climate trends and its impacts.

v. **Increase the country's resilience to climate change** - Integration and implementation of the National Climate Change Policy (NCCP) including awareness creation in all sectors and district development plans, and strengthen national coordination, monitoring and reporting on the implementation of international standards and commitments.

vi. **Increase afforestation, reforestation, and mitigate deforestation for sustainable forestry** - Develop countrywide community-based as well as institutional tree planting, promote sustainable development of commercial forest plantations and industry including value addition, promote implementation of sustainable management of forests through restoration of natural forests on protected and private land, promote forestry research and development, develop markets for forest products and services, develop a National REDD+[1] Strategy and costed action plan, development of a Forest Emissions Reference Level and a Forest Reference Level (FERL/FRL), development of a robust and functional National Forest Monitoring System (NFMS) for the monitoring and reporting of the REDD+ *activities included in the REDD+ Strategy, promote forestry in urban development plan and scale up agro-forestry based alternative livelihood systems.*

[1] Reducing Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+) was first negotiated under the United Nations Framework Convention on Climate Change (UNFCCC) since 2005, with the objective of mitigating climate change through reducing net emissions of greenhouse gases through enhanced forest management in developing countries.

vii. **Improve the legal and institutional framework to respond to climate change** - Establish of appropriate institution for coordinating national climate change response, establish an appropriate legal framework for climate change policy implementation and compliance.

ii. Water and Sanitation Infrastructure Development

The availability of safe water and hygiene facilities is of paramount importance to human development. Likewise, the sustainable management and utilization of water resources accelerates value addition and the country's competitiveness in service delivery. Under the NDPII period, the focus will be on water and sanitation infrastructure development to increase access to safe water coverage, sanitation and hygiene levels in rural and urban areas, increase functionality of water supply systems, integration of gender in water development, implement water resources management and promote catchment-based integrated water resources management. The key priority interventions for the Water and Sanitation Sub-Sector are:

iii. Rural Water and Sanitation

i. **Increase access to safe water supply in rural areas** - Construct, operate and maintain appropriate community water supply systems in rural areas focusing on unserved areas, target investments in water-stressed areas abstracting from production wells as well as large gravity flow schemes (GFS) where appropriate to serve the rural areas by providing a water source for each village, promote and scale up rainwater harvesting to mitigate climate change, promote Water, Sanitation and Hygiene (WASH) humanitarian preparedness and response to avert possible outbreaks of water-related diseases especially in settlements for poor communities and as well as refugees and displaced persons, improve functionality, sustainability and resilience of water supply systems in rural areas, promote Public Private Partnership arrangements to increase accessibility of water sources, and mobilize and promote community participation in the management of water systems while encouraging women to take up decision-making positions.

ii. **Increase access to improved sanitation in rural areas** - Strengthen collaboration amongst the institutions responsible for sanitation, implement demand-led sanitation and hygiene (Community-Led Total Sanitation (CLTS) and sanitation / social marketing), modernize solid waste management and treatment in the Rural Growth Centres and fish landing sites, promote appropriate sanitation technologies, strengthen law enforcement bodies with regard to sanitation and hygiene.

iv. Urban Water Supply and Sanitation

i. **Increase access to safe water supply in urban areas** - Construct, operate and maintain piped water supply systems in small towns and urban areas country wide, strengthen operation and maintenance, asset management and regulation for the urban water systems, improve the enabling environment for private water operators and reform the public utility model, and increase water service coverage with emphasis on the Greater Kampala Metropolitan Area (GKMA) taking into consideration environment and climate change among others.

ii. **Improve urban sanitation and hygiene services** - Intensify collaboration amongst MWE and local governments, increase sewerage connections in towns with sewerage systems and develop new infrastructure, including satellite sewerage systems in the GKMA, develop smart-incentive schemes and intensify sanitation marketing for increased household investment in sanitation, construct, operate and maintain a cluster of faecal sludge management treatment

systems while promoting private sector services for sludge collection and disposal, and strengthen law enforcement bodies with regard to sanitation and hygiene

v. Water Resources Management

i. **Improve national capacity for water resources management (WRM)** - Increase use of Integrated Water Resource Management approaches in the planning, management and development of water resources, integrate catchment management plans and implement identified climate change (CC) adaptation measures, establish a Water Resource Institute for in-country human resource capacity development for water resources management and develop and review the legal and institutional framework for WRM.

ii. **Improve water resources planning, and regulation** - Improve the assessment and evaluation of permits for various water uses and use of other tools for water resources regulation, increase compliance monitoring and enforcement based on the Compliance and Enforcement Strategy (2010), increase the proportion of major polluters and abstractors regulated according to the water laws and regulations from 55% to 70%, and promote dam safety and reservoir regulation for large water reservoirs and water bodies.

iii. **Improve water resources monitoring,** assessment and information services - Increase the analytical capability of national and regional water laboratories and establish systems for regulation of water services laboratories, establish a national water resources information system and increase use of water resources information for integrated water resources management, early warning and decision making, establish risk-based systems for regulation of drinking water and wastewater including oil and gas waste, upgrade water resources management tools to include real-time data capture using remote sensing and telemetry, provide appropriate water resources monitoring, assessment and information services and provide in-country water security safeguards.

iv. **Improve protection of Uganda's interests in international waters** - Develop and operationalize a national policy and strategy for management of international waters, promote regional cooperation for equitable and reasonable utilization of the shared water resources, and participate and fast track benefits from the Nile basin initiatives multi-lateral agreements.

vi. Water for Production

The National Development Plan II's objective is to increase the provision of water for production facilities and increase the functionality and utilisation of water for production facilities. The aim is to increase water for production for multipurpose use especially under agriculture, tourism and industry by constructing dams with a capacity of one MCM and valley tanks with a capacity of 10,000-20,000 CM. The following are the major priorities and interventions under Water for Production.

i. **Increase the provision of water for production facilities** - Establish new bulk multi-purpose water systems (dams, water obstruction, transmission and distribution to industrial zones and other points of use) while factoring in the impacts of climate change, protect and manage water catchment areas, increase private sector involvement in the implementation of water for production facilities including use of the Public-Private Partnership (PPP) arrangement, prepare and implement the National Irrigation Master Plan that takes into account future impacts of climate change, gazette water reserve areas for large dams and involve private operators to strengthen management.

ii. **Increase the functionality and utilization of water for production facilities** - Establish functional management structures for water for production facilities such as Water User Committees / Water Boards, rehabilitate and maintain existing water for production facilities, promote measures undertaken to increase recovery of maintenance costs and increase the proportion of water for production facilities that are managed by the private sector.

Institutional Arrangement

The key players in the sector comprise of Ministry of Water and Environment, National Environment Management Authority (NEMA), National Forestry Authority (NFA), National Water and Sewerage Corporation (NWSC) and Uganda National Meteorological Authority (UNMA), Local Governments, Development Partners, Private Sector and the Civil Society Organizations. The Ministry of Water and Environment is a lead institution and is responsible for overall coordination, policy formulation, setting standards, inspection, monitoring, technical back-up and initiating legislation. It also monitors and evaluates sector development programs to keep track of their performance, efficiency and effectiveness in service delivery. The private sector and Civil Society Organizations (CSOs) complement the efforts of the government in the development and mobilization of the resources for service delivery, while the Development Partners provide financial and technical assistance.

The implementation of strategic interventions will be conducted by all stakeholders. The Top Policy Management (TPM) and the Water and Environment Sector Working Group (WESWG) will continue to play their coordination role, while the central government will continue directing funds and capacity development programmes to support local governments and regionally de-concentrated institutions to facilitate implementation. In addition, the private sector participation and community involvement shall be promoted to ensure efficient and effective service delivery to the communities.

Sector Financing Requirement

The sector has identified strategic objectives and interventions plus key outcome indicators necessary to measure the progress towards achievement of the overall objectives set out for the NDPII. The total investment requirement for the next five years is estimated at UGX 9.625 trillion. This translates into an average of UGX 1.925 trillion per year. The calculation is based on specific unit costs and the expected contribution of the sector to the transformation process. It is important that this funding level is realized in the forthcoming Medium Term Expenditure frameworks (MTEFs) to enable the sector provide its due contribution to the transformation process.

Monitoring and Evaluation Arrangement

To ensure impact in service delivery, the sector formulated a results matrix linked to the agreed output and outcomes in the Budget Framework Papers (BFP) and Ministerial Policy Statements (MPS) annually. The progress in output performance will be monitored through quarterly and annual performance reports, while the assessment of the outcome impacts will be conducted during the Joint Annual Sector Reviews and the Government Annual Performance Reports.

SECTION ONE - INTRODUCTION

This section includes the outline of the development priorities being addressed by the Sector Development Plan (SDP), and how the SDP is related to the National Development Plan, the vision, mission and the strategic objectives of the sector, the legal and policy context in which the sector institutions operate, the regional and international instruments, conventions, protocols and agreements with which the sector institutions have to comply while executing their mandates, as well as the structure of the Sector Development Plan.

The Water and Environment sector provides natural and built infrastructure that is central to supporting economic growth by sustaining crop production and productivity, hydropower generation and industrialization, tourism development and health and food security. Forests, trees and other biomass grow in all parts of the country providing good soils and watersheds for agricultural production. Large inter-connected wetlands contribute to the national and local economies by producing resources, enabling recreational activities and providing other benefits, such as pollution control and flood protection. Water as a resource is available in surface reservoirs and aquifers across the country making it possible to undertake water infrastructure development (rural water supply and sanitation, urban water supply and sewerage, and water for production and multi-purpose use) to facilitate industrialization, health and human development. Environmental management is critical to support sustainability of the benefits from nature to support the country's economic growth.

1.1 Vision, Mission and Strategic Objectives

The Ministry of Water and Environment (MWE) is a lead institution under the Water and Environment Sector. Its vision is "Sound management and sustainable utilisation of water and Environment Resources for the present and future generation". The institution's mission is 'To promote and ensure the rational and sustainable utilisation, development and effective management of water and environment resources for socio-economic development of the country'. The Ministry's mandate is derived from the Constitution of Uganda (1995) and the Local Government Act and is to initiate legislation, policy formulation, setting standards, inspections, monitoring, coordination and technical back up support in relation to water and environment sub sectors.

In order to achieve its vision, the sector is guided by the following strategic objectives in the implementation of its policies and programs:

i. To provide safe water within easy reach and hygienic sanitation facilities based on management responsibility and ownership by users to 79 percent of the population in rural areas and 100 percent of the urban population by the year 2020, with 95 percent effective use and functionality of the facilities for men and women.
ii. To provide viable urban water supply and sewerage/sanitation systems for domestic, industrial and commercial uses.
iii. To develop water supply for production / multipurpose use for socio-economic development, to modernize agriculture and mitigate the effects of climate change.
iv. To manage the water resources of Uganda in a wise, integrated, sustainable and coordinated manner so as to secure water of adequate quantity and quality to meet all social and economic needs of present and future generation.
v. To promote a sustainable productive Natural Resource Base (NRB) and healthy environment for improved livelihoods, poverty eradication and economic growth.
vi. To develop capacity and promote sustainable use of climate and weather resources for socio-economic development of Uganda.
vii. To coordinate and ensure compliance with government policy, legislation, standards and regulations in the Ministry of Water and Environment and the affiliated agencies/institutions implementing programs related to Water and Environment.

1.2 Legal, Policy and Regulatory Framework

The sector's guiding policy framework is contained in the various existing policies. The National Water Policy (1999), which main objective is to manage and develop the water resources in an integrated and sustainable manner, covers all aspects of water resource management and water infrastructure development. The National Environment Management Policy was developed in 1994 and is under its final phase of review. It was developed for sustainable social and economic development which maintains or enhances environmental quality and resource productivity on a long-term basis to enable future generations to meet their own needs from the environment and natural resources. The policy framework guides other policies such as those on wetlands, forestry and climate change.

For example, the National Policy for the Conservation and Management of Wetland Resources (1995) establishes the principles by which wetland resources can be optimally used now and in the future. The National Climate Change Policy (2014) provides the overarching objective to ensure that all stakeholders harmoniously address climate change impacts and their causes through appropriate adaptation and mitigation measures, while promoting sustainable development and a path to a green economy. The Uganda National Forestry Policy (2004) seeks to achieve sustainable increase in the economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable.

The regulations put in place to implement the relevant laws include: Water Resources Regulations (1998), Waste Discharge Regulations (1998), Water Supply Regulations (1999), Sewerage Regulations (1999), Environmental Impact Assessment Regulations (1998), National Environment Standards for Discharge of Effluent into Water or on Land Regulations (1999), National Environment Waste Management Regulations (1999), National Environment Hilly and Mountainous Area Management Regulations (2000), National Environment Wetlands, River Banks and Lake Shores Management Regulations (2000), National Environment Management of Ozone Depleting Substances and Products Regulations (2001), and National Environment Noise Standards and Control Regulations (2001).

Other relevant policies/plans for the management of the Water and Environment sector are the Local Governments Act Cap 243 (1987), National Gender Policy (1997), National Gender Policy (1999), National Health Policy, Health Sector Strategic Plan (1999), The Uganda National Meteorological Authority Act (2014), National Forest Plan (2002) and the Land Act (1998, amended 2004)

1.3 Policy and Planning Framework

Implementation of activities in the sector is guided by various sub-sector development and investment plans linked to Uganda Vision 2040, NDPII 2015/16-2019/20 and the relevant international and regional commitments as well as inter-sectoral linkages within the economy. A vital plan in this regard is the Water Resources Strategy and Investment Plan, prepared to guide the country in the sustainable development and management of its water resources. The strategy is anchored on a framework for catchment based integrated water resources management tailored to de-concentrate management of water resources to lower levels including Water Management Zones, catchments and governments.

Similarly, a Water for Production Strategy and Investment Plan (2010-2035) emphasizes "A Package Approach" for water for production that not only includes construction and installation of water for production infrastructure, but also the software aspects detailing the mobilization, community-based planning and monitoring processes. It focuses on the link between planning for water infrastructure and productive use of the water, private sector back-up support, efficient water utilization, hygiene and sanitation, environmental awareness, gender responsiveness, and the requisite capacity building at user level for sustainable use and Operation and Maintenance (O&M) of the facilities. Other important plans include the Water and Sanitation Sub-Sector Investment Plan (now under review), the Environment and Natural Resources Investment Plan (2007) and the Climate Change Operationalization Strategy (2014).

Every Financial Year, the sector prepares its annual budget based on priorities and strategies outlined in the Investment Plans. The set priorities must be consistent with Vision 2040, the second National Development Plan (NDPII), the Sustainable Development Goals and the NRM Manifesto commitments. The planning and budgeting process is conducted in a participatory manner where all key stakeholders such as the Top Policy Management (TPM), the Sector Working Group (SWG), Parliament and local governments are consulted. This guarantees ownership and efficient resources allocation within the sector for effective service delivery. The budget preparation is guided by the online Output Budgeting Tool (OBT) which generates the Budget Framework Paper and the Ministerial Policy Statement (MPS) as the principal documents, showing sector outcomes, planned annual outputs and targets and related budgets by vote. The sector has four stand-alone votes namely;

- Vote 019 - Ministry of Water and Environment,
- Vote 150 - National Environment Management Authority
- Vote 157 - National Forestry Authority
- Vote 302 - Uganda National Meteorological Authority and
- Vote 500 - Local Governments. There are four District Conditional Grants under Water and Environment Sector namely;
    - ✓ District Water Development Grant for rural water facilities,
    - ✓ District Sanitation and Hygiene Grant for district sanitation
    - ✓ Urban Water Supply O& M Conditional Grant to support system expansions and improve on sustainability and
    - ✓ Environment and Natural Resources Conditional Grant provided for wetlands management.

Under Vote 019 there are seven Vote Functions, namely;

- VF-01- Rural Water Supply and Sanitation (RWSS),
- VF-02 -Urban Water Supply and Sewerage (UWSS),
- VF-03 - Water for Production WfP),
- VF-04 - Water Resource Management (WRM),
- VF-05 - Natural Resource Management (NRM),
- VF-06 - Climate and Climate Change (CCC) and
- VF-07 - Policy, Planning and Support Services (PPSS)

The sector allocation is made based on the Medium Term Expenditure Framework (MTEF) budget estimates mobilized from local revenues and donor support to the budget. There is also donor funding through bilateral and multilateral arrangements to specific project aid as standalone support or in the form of the Joint Partnership Fund. Other sources of funding include private water operators, tree planting farmers, the Non-Government Civil Organizations (NGOs) and Non-Tax Revenues (NTR).

1.4 Institutional Roles and Responsibilities

The stated vision of the Water and Environment Sector encompasses managing water as a resource, establishing water infrastructure for development, harnessing weather and climate and promoting ecosystems and biodiversity resilience. The Ministry of Water and Environment is responsible for overall coordination, policy formulation, setting standards, inspection, monitoring, technical back-up support and initiating legislation. The Ministry is comprised of three directorates, including the Directorate of Water Resources Management (DWRM), Directorate of Water Development (DWD) and Directorate of Environmental Affairs (DEA). In addition the Ministry is supported by stand-alone departments in support to the technical departments such as Finance and Administration Department,

Water and Environment Sector Liaison Department, Policy and Planning Department responsible for the strategic planning, budgeting and monitoring, and Climate Change Department

Other institutions in the sector include the National Water and Sewerage Corporation which is a public and state-owned utility currently providing water supply and sewerage services in 110 urban areas as at June 2015 including Kampala Capital City and its surroundings. The National Forestry Authority is mandated to manage the gazetted 506 Central Forest Reserves and supply high quality forestry related products and services. The Central Forest Reserves form part of the beautiful and unrivalled advantage Uganda has world over in tourist attraction. The National Environment Management Authority was set up by an Act of Parliament to ensure sound environmental management practices for sustainable development. The Uganda National Meteorological Authority (UNMA) is responsible for monitoring weather and climate, maintain climate database and provide regular advisory services on the state of the weather and climate to government and public (**See detailed sector structure in figure 1**).

Other key stakeholders include local government, Development Partners, Civil Society Organisations and the private sector. Local governments are key implementers in the delivery of services in the sector as well as private sector firms. Likewise, Development Partners and Civil Society Organisations offer the much desired interventions in support of government actions for service delivery. The major source of donor support to the sector originate from bilateral and multilateral financing windows such as the World Bank, the African Development Bank (AfDB), Food and Agricultural Organisation (FAO), European Investment Bank, European Union, Germany (KfW/GIZ), Austria, France, Japan, , Belgium etc.

The sector is guided by the Top Policy Management (TPM) headed by the Senior Minister and assisted by two Ministers of State, for Water, and Environment respectively. The Water and Environment Sector Working Group (WESWG) is chaired by the Permanent Secretary and assisted by two co-chairs persons representing Water and Sanitation donor group and Environment and Natural Resources donor group. The WESWG is responsible for the overall sector coordination, resource mobilization and allocation as well as review of progress. The Water and Sanitation Sub-Sector Working Group (WSSWG) and the Environment and Natural Resources Subsector Working Group (ENR-SWG) are responsible for the sector planning and priority setting, implementation, monitoring, supervision and management of their respective subsector in support to the WESWG.

1.5 Regional and International Commitments

Uganda endorsed and committed itself to the Rio+20 United Nations Commission on Sustainable Development's outcomes and recommendations on the global "future we want". The country is developing a framework of action and follow up for transition to a green economy linked to the Sustainable Development Goals (SDGs) that will complete the unfinished business of the Millennium Development Goals (MDGs). The SDGs highlight the centrality of the water and environment sector in the eradication of poverty and hunger and promotion of sustained and inclusive growth. Similarly, through Resolution 64/292, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation is essential to the realization of all human rights. In this regard therefore, Uganda's commitment to progressively eliminate inequalities in access and achieve universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities is essential to the realization of all human rights.

Uganda has ratified and is implementing several international conventions and protocols on, or related to water and environment, most notably the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention to Combat Desertification and Drought (UNCDD). As a member of the New Partnership for Africa's Development NEPAD, the technical body of the African Union, Uganda prioritizes investment in the sustainability of environment and natural resources. Similarly, Uganda is a member of the 10-country Nile Basin Initiative (NBI), which programmes and policies influence Uganda's natural resources management

frameworks, including the management of trans-boundary water resources. Additionally, Uganda also ratified the Paris Agreement on Climate Change under COP21[2] to not only address local effects of climate change but also contribute to the global response to climate change

At regional level, Uganda is a member state of the East African Community (EAC) and consequently, is signatory to its protocols, including the EAC Protocol on Environment and Natural Resources (2006) and the EAC Policy on Climate Change. Uganda is strategically located within the Albertine Rift or Western Rift, which is part of the Great Rift Valley that is characterized by high biodiversity including for instance the presence of the endangered Mountain Gorillas. Uganda signed the Greater Virunga Trans-boundary Collaboration (GVTC) framework with the Democratic Republic of Congo (DRC) and Rwanda for purposes of protecting and conserving the endangered mountain gorillas, whose habitat transcend the borders of the 3 countries. In a similar partnership, Uganda is a member of the International Conference on the Great Lakes Region (ICGLR), which is part of the regional initiatives to ensure natural resources sustainability.

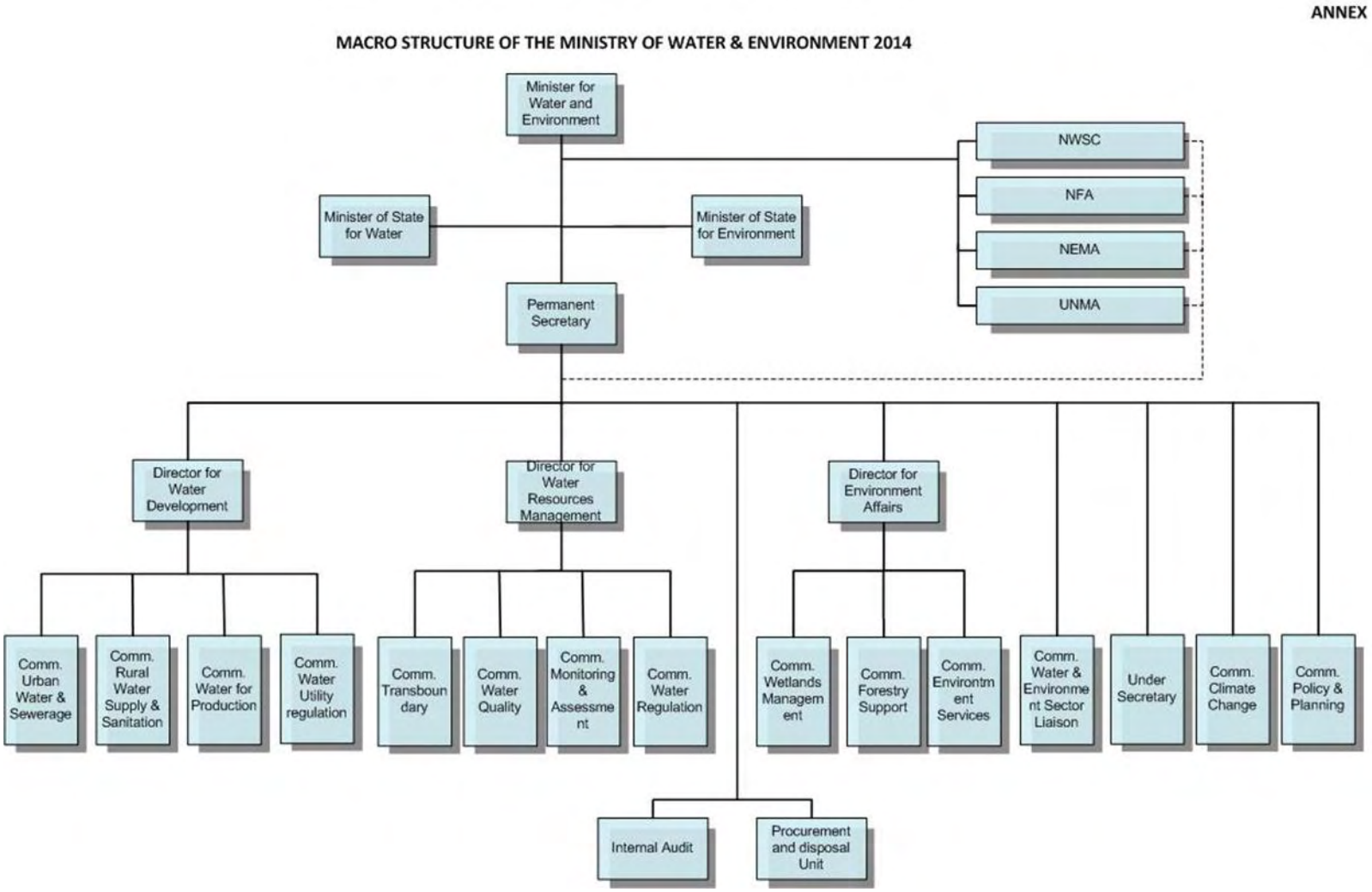
1.6 The Structure of the Sector Development Plan

The Sector Development Plan is organized in six sections where section one provides an introduction, section two presents the situational analysis including the sector profile/current situation/baseline, section three discusses the strategic direction of the sector focusing on its priorities, objectives and interventions for each thematic for the period of financial year 2016/17-2019-20, section four presents the institutional arrangements for implementing the SDP, section five provides the financing strategy, while sections six and seven indicate the monitoring and evaluation arrangements and cost implementation matrix, respectively.

[2] The 21st Conference of the Parties to the UN Framework Convention on Climate Change

Figure 1: Ministry of Water and Environment Macro Structure

ANNEX



SECTION TWO - WATER AND ENVIRONMENT SECTOR SITUATION ANALYSIS

This section describes the general state of affairs of the Water and Environment Sector, and the progress achieved from past interventions as well as challenges that are important for the improvement in service delivery in future. It analyses the status of the sector according to the specific mandates of the institutions constituting the Water and Environment Sector. These include Rural Water Supply and Sanitation, Urban Water and Sewerage Supply, Water for Production, Water Resources Management, Environment and Natural Resources, Weather, Climate and Climate Change and Coordination. In particular, this section analyzes the status of the performance in implementing programmes and projects under the NDPII constituting the baseline/profile of the subsectors. It further outlines the main development challenges identified from the situation analysis as well as the projects and programmes for implementation

2.1 Rural Water Supply Infrastructure and Sanitation Services

The Ongoing Projects under Rural Water Supply and Sanitation include 163-Support to Rural Water Project, 1191-Water for Returned IDPs Project, 1347-Solar Powered Mini-Piped Project, 1349-Large Rural Schemes in Northern Uganda and 1359-Piped Water in Rural Areas Project.

2.1.1 Rural Water Supply

The Rural Water Supply sub-sector is defined to include all those areas under the jurisdiction of District Local Councils and Rural Growth Centres, but excluding those urban areas governed by town boards, Town Councils, municipalities and Kampala Capital City. In practice this means that rural water supply covers those communities and villages with populations up to 1,500 and Rural Growth Centres (RGCs) with populations between 1,500 and 5,000. The first five year National Development Plan (NDPI, 2010-2015) set the target for access to rural water supply[3] as well as household sanitation coverage at 77%. Safe water coverage in rural areas has improved from 61% to 65% while sanitation coverage has improved from 58% to 77% during the period FY2005/06 and FY 2014/15.

The challenges in rural water supply include unreliable Operation and Maintenance (O&M) of facilities undertaken through the Community-Based Maintenance System (CBMS,) in which responsibility and authority over the development, operation and maintenance of facilities is in the hands of the communities. The CBMS is anchored on management of individual water facilities through the Community Water and Sanitation Committees (WSCs) with support from locally-based Hand Pump Mechanics (HPMs) who carry out regular repairs and servicing of the water points. The HPMs are supervised and supported by the District Water Office under the guidance of the Central Government. Weaknesses in the system have resulted in the below target functionality of facilities ranging between 80% and 88% in the past decade. Another weakness constitutes the poor protection of water sources resulting in low and decreasing water quality.

Efforts continue to be made to address these issues, which do not only encompass technical issues (hardware), but also managerial, social, financial and institutional issues. Some of the actions undertaken by the Ministry to improve functionality of rural water supplies include promotion and establishment of Hand Pump Mechanics Associations (HPMAs), provision of spare parts for boreholes through a national network of supply chains through the Hand-pump Mechanics Associations, and

[3]Access in the rural areas refers to the percentage of people that collect water from an improved water source within 1.0 km from their households.

commencement of overhauling existing non-functional boreholes which are broken down due to old age and technical problems. In the coming five-year period, the sector will need to focus on maintaining the current efforts to enhance functionality of rural water supply facilities alongside provision of new sources in order to increase coverage. Innovative ways of transforming service delivery to include the equipment of boreholes with piped solar pumping systems will be adopted to provide sustainable and convenient water facilities to rural communities.

2.1.2 Sanitation and Hygiene

Sanitation coverage in rural areas is currently estimated at 79%, an improvement from 51% a decade ago. The low sanitation coverage is often attributed to lack of demand, low priority setting among the communities and local governments. However, poor coverage is also due to inappropriate toilet technologies and weak supply mechanisms. There have been many efforts to educate the populace and increase the demand for improved sanitation services, but with limited progress. These efforts include the introduction of Participatory Hygiene and Sanitation Transformation (PHAST) approaches, formation of Community Health Clubs, hand-washing campaigns, creation of model villages through home improvement campaigns, Community-Led Total Sanitation (CLTS) designed and triggered through social awakening to change community norms and practices especially open defecation, and construction of public sanitation facilities in Rural Growth Centres.

The challenges in rural sanitation and hygiene include among others: negative cultural beliefs, taboos and ignorance, poor soil conditions for construction of latrines, poor operation and maintenance of sanitation facilities more especially in public places and schools, rapid population growth resulting into development of large and many congested and informal settlements making it hard to provide safe sanitation facilities, inadequate allocation of funds to preventive health care / sanitation and hygiene to cope with the increasing need, climate change causing floods that cause sanitation emergencies due to total breakdown of sanitation services, political instability in neighbouring countries resulting in largely unplanned sanitation in settlement camps, and a weak institutional and management framework for enforcement of the existing laws and regulations.

2.2 Urban Water Supply Infrastructure and Sewerage Services

Uganda's urban water supply can be grouped in two major categories viz: large towns managed by the National Water and Sewerage Corporation (NWSC) and small towns managed by the Directorate of Water Development in conjunction with District and Urban Authorities. Safe water coverage in the large towns stands at 76%[4] while piped sewerage is estimated at 6%. The rest of the inhabitants rely on on-site sanitation facilities. Safe water coverage in the small towns has significantly increased from 55% to 60% as a result of completion of new construction works under the Water and Sanitation Development Facilities' (WSDFs) arrangements instituted by the MWE in the last 3 years.

On operational efficiency, the NWSC has reduced non-revenue water in Kampala from 41% five years ago (June 2010) to the current 33% level (June 2015); in the rest of the large towns, non-revenue water increased from 18% to 27%. The non-revenue water in small towns under the DWD is estimated at 28%, but greatly varying from town to town on account of the size and technology options. There are continued improvements to bring this performance to match with international water supply levels of an average of 18% through installation of bulk water meters, multiple data recording, introduction of pro-poor connections mechanisms and convenient public water supply delivery systems as well as sensitization of communities on the benefits of paying for water services.

[4] Source: Ministry of Water and Environment, Water and Environment Sector Performance Report 2015

Ongoing projects under Urban Water Supply and Sewerage Services include: 124-Energy for Rural Transformation, 164-Support to Small towns,168-Urban Water Reform Project, 1074-Water and Sanitation Development Facility (WSDF-North), 1075-Water and Sanitation Development Facility (WSDF-East), 1130- Water and Sanitation Development Facility(WSDF-Central), 1188-Protection of Lake Victoria Sanitation Project, 1192-Lake Victoria Water and Sanitation Project (WVWATSAN II), 1193-Kampala Water and Sanitation Project, 1231b –Water Management Development Project (WMDP NWSC Component), 1231c -Water Management Development Project (WMDP-DWD Component), 1283-Water and Sanitation Development Facility (WSDF-South West), and 1399-Karamoja Small Towns Project.

Constraints to the Performance in the Urban Water Supply and Sanitation Sector include:

Pollution and depletion of water resources which has resulted in water scarcity and increased cost of production due to the need to use more quantities of chemicals to purify water in the NWSC operated systems, unplanned settlement patterns which lead to difficulties in supply of water and sewerage services, inadequate institutional capacity including insufficient skilled human resources to effectively plan and manage the supply of safe water, weak local private sector players (contractors, consultants and private operators), high energy costs and an insufficient grid power network necessitating high cost alternatives, and low prioritization of sanitation and hygiene at all levels.

2.3 Water for Production Infrastructure

The Water for Production Sub-Sector provides water infrastructure for irrigation, livestock, fishing, mining, wildlife, industries, aquaculture, as well as maintaining the environment and ecosystems. Globally, water for productive use is estimated to account for 60–70% of the total national water requirements. In Uganda, only 2% of water is used for production, and only 1% of the potential irrigable area, where 15,000Ha out of 1,300,000Ha is under formal irrigation. Access to water for livestock at present is estimated at 49%. The country is increasingly facing a major challenge of prolonged droughts and unexpected floods due to climatic variations and is predicted to be water-stressed by 2025.

Since 2006, Government has constructed 11 dams with a total storage capacity of 14.7 Million Cubic Metres (MCM) in the water-stressed cattle corridor belt straddling several districts across the country[5]. Similarly, 959 small to medium size valley tanks, with a total storage capacity of 3.108 MCM in the selected livestock keeping districts countrywide have been constructed through the District Water and Sanitation Development Conditional Grant arrangement as well as using Ministry of Water and Environment's equipment under Public Private Partnership.

Three (03) irrigations schemes namely, Mobuku, Doho and Olweny Irrigation schemes have been reconstructed and currently irrigate in total 2,150ha[6] to produce rice and vegetables all-year-round. This has more than doubled the farm output providing food and incomes to the participating households with some of the produce entering the export market. To expand the use of water from other facilities, the Ministry constructed nine (09) windmill-powered water systems in Karamoja sub-region creating a total volume of 105,120 cubic metres of safe and clean water annually for both livestock and human consumption.

There are ongoing multi-year programmes and activities that will in due course be completed as follows:

[5]Isingiro, Apac, Napak, Moroto, Kaabong, Sembabule, Rakai, Otuke, Kotido and Abim.
[6]Doho Irrigation scheme (1,000 ha) in Butaleja District, Mubuku Irrigation scheme (550ha) in Kasese District and Agoro irrigation scheme (600ha) in Lamwo District.

i. Construction of 7 dams (Acanpii dam in Oyam District and Andibo dam in Nebbi District, Namatata dam in Nakapiripirit District, Katabok dam in Abim District, Bigasha dam in Isingiro District, Ongole dam in Katakwi District, and Mabira dam in Mbarara District,
ii. Construction of 4 valley tanks (Odusai valley tank in Pallisa District, Nalubembe valley tank in Kibuku District, Katirwe and Kasikizi valley tanks in Kyegegwa District) to create storage capacity of 40,000m3 of water for livestock watering,
iii. Construction of Rwengaaju irrigation schemes cheme in Kabarole District,
iv. Construction of Nyakashaashara water supply system (phase) 1 in Kiruhura District
v. construction of Nyakiharo water supply system (phase 1) in Kiruhura District
vi. Construction of WfP facilities countrywide using WfP equipment
vii. Installation of drip irrigation systems at completed dam sites
viii. Design of 10 medium scale and 50 small scale irrigation schemes, and
ix. Emergency repair and maintenance of WfP facilities.

The Ongoing projects under Water for Production include 169-Water for Production, 1396-WfPRC-North, 1397-WfPRC - East, and 1398-WfPRC -West.

2.4 Water Resources Management

The water resources of Uganda comprise surface water that is found in lakes, rivers and swamps, and groundwater that is found in rocks and soils underground. A total of 15% of Uganda's surface area is covered by open water implying that the country is fairly endowed with surface water resources. Similarly, substantial amounts of groundwater are in aquifers found in rocks at different depths below the ground surface. Water resources principally originate from rainfall and are stored in both open and underground reservoirs. Occurrence of water resources therefore depends principally on the rainfall pattern, and the topographic and geological conditions among other factors. Thus, surface and groundwater resources of Uganda are non-uniform both in space and time due to changes in the factors that determine their occurrence.

The key achievements under water resources management over the last 10 years include the following:

2.4.1 Surface water, groundwater and water quality monitoring

This covers operation and maintenance of 91 surface water, 30 groundwater and 119 water quality monitoring stations throughout the country. These stations monitor the quality and quantity of water resources and how there change due to climate and human impacts. The data and information collected have been used for planning of water resources related activities such as big and small hydropower schemes, water supply systems in rural and urban areas, water for production facilities such as dams and valley tanks, navigation on major lakes such as Lake Victoria, irrigation schemes etc.

2.4.2 Groundwater resources mapping

Maps showing the distribution of the quality, quantity and characteristics of groundwater have been produced for 78 districts in the country. Six types of maps are produced per district and are accompanied by a report giving the groundwater status of the districts and providing guidance to both technical and layman people on how to use the maps to plan groundwater development activities for both rural and urban water supply. While the mapping exercise is continuing in other districts, an ongoing assessment of the utilization of the maps indicates that the maps are helping the districts in allocation of water facilities, identifying the most feasible water supply technologies to consider in different areas, optimization of borehole drilling activities to realize more water sources using the same financial resources and improving success rates of borehole drilling activities thus serving more people and further improving water coverage.

2.4.3 Issuance of Water Permits

Water permits are issued for purposes of controlling and regulating water abstraction and discharge of waste water into water bodies to protect them from overexploitation and pollution. Four different types of permits are issued, covering surface water abstraction, groundwater abstraction, waste water discharge, borehole drilling. The number of permits issued annually has increased from 68 in 2004 to 203 in FY2014/15. Similarly, compliance to water abstraction and waste water discharge permits currently stands at 71% and 52% respectively up from 68% and 44% respectively five years ago (June 2010). All this suggests that management of water resources has improved and the needs of various socio-economic activities are better met and protected.

2.4.4 Water resources assessments

Various water resources assessment studies have been carried out to measure the quantity and quality of water resources in various parts of the country so as to provide guidance on how the resources can be used to support various activities in a sustainable manner. Hydro-climatic and low flow studies were completed for assessment and quantification of surface water resources to guide dam construction, hydropower generation, irrigation, bridge design etc. Similarly, studies for assessment and quantification of groundwater resources were completed for Wobulenzi, Rukungiri, Kisoro and Mubende Towns and are ongoing for areas around Lake Victoria. Groundwater resources development activities in areas where the studies have been completed and ongoing will now be better planned and guided based on the information generated. One example is Rukungiri town where it was found that the groundwater resources were limited and would not meet the town demand over the next 10 years. Activities for obtaining an alternative supply of water for the town have already started based on the guidance provided by the results of the study. Similarly, the source of water supplying Kisoro town was unknown and this was making protection of the groundwater resources difficult. The groundwater study carried out in the town identified the source of the water and hence guided the town authorities on the areas where water polluting activities should be restricted.

2.4.5 Implementation of the National Water Quality Management Strategy

This is aimed at protection of the quality of the country's water resources. Notable activities undertaken include the upgrading of the National Water Quality Laboratory at Entebbe that will act as a national reference laboratory, and establishment of three of the four regional laboratories in Upper Nile, Albert and Kyoga Water Management Zones to support stakeholders at the lower level and water quality monitoring at the catchment level. In addition, development of water quality guidelines and standards for various emerging issues such as oil drilling and emergency response are being developed.

2.4.6 Trans-boundary water resources management

Considering that almost all water resources of Uganda are transboundary and hence are shared with neighbouring countries, considerable resources have and will continue to be put into representing Uganda's interests in trans-boundary water resources management activities, through the Nile Basin Initiative and Lake Victoria Basin Commission. A number of achievements have been realized in this endeavour among which is the signing of the Nile Basin Cooperative Framework Agreement (CFA) by six out of the nine Nile riparian countries after 10 years of protracted negotiations. The CFA is currently undergoing a ratification process that will pave way for establishment of the Nile River Basin Commission in Uganda.

2.4.7 National Water Resources Assessment and Strategy

The National Water Resources Assessment was is aimed at quantifying water resources availability and demand, assessing the quality of water resources, identify hotspot areas vulnerable to droughts and floods, and assessing the economic value of water resources. The assessment led to preparation of a National Water Resources Development and Management Strategy that has been prepared in a consultative manner to ensure that it meets the needs and expectations of stakeholders while responding to the objectives of the second National Development Plan.

2.4.8 Climate Change Adaptation Strategy for the water sector

The impacts of climate change on water and water-related sectors were assessed through undertaking a climate change vulnerability assessment that led to preparation of a climate change adaptation strategy for the water sector. The adaptation strategy is guiding water and related sectors to put in place measures that will enable them to handle impacts of climate change and ensure that their investments are climate-proof.

2.4.9 De-concentration of water resources management to Water Management Zones

Following a Water Resources Management Reform study that was completed in 2005, it was decided that management of water resources should follow water catchments rather than administrative boundaries and that it should be deconcentrated to lower levels of governance in order to systematically respond to water resources challenges and ensure that water resources effectively contribute to socio-economic development. This was to be achieved through dividing the country into four Water Management Zones (WMZ) (Albert, Victoria, Kyoga and Upper Nile) within which a number of catchments would be established to promote stakeholders participation in water resources development and management.

The Catchment Management Planning Guidelines, which came into effect in 2013, are the guiding document for the catchment management planning process. Piloting the catchment-based approach to water resources management and development has been undertaken in 15 catchments (Mpanga, Semliki, Ruhenzamyenda, Albert, Kiiha, Awoja, Mpologoma, Victoria Nile, Lokere, Lokok, Aswa, Albert Nile, Rwizi, Maziba and Katonga), and catchment management plans for each of the catchments have either been finalized or are in advanced stages of finalization, after which implementation of identified water related interventions will start. In addition, starting in July 2011, four Water Management Zones (WMZs) were established to implement the traditional water resources management functions at the lower levels and support and facilitate stakeholder-driven catchment based water resources management and development throughout the country. Implementation of catchment based water resources management is expected to promote an integrated approach to planning and implementation of water and related activities thereby resulting in efficiency and effectiveness in the use and management of water resources for meeting the needs of the various sectors now and in future. The approach will also promote creation of synergy and efficient use of resources and demonstrate further the benefits of water resources management once stakeholders are fully involved in the preparation of water resources management and development plans following the catchments.

Support to the Water Policy Committee (WPC): The WPC is a statutory body provided for in the Water Act which advises the Minister of Water and Environment regarding the integrated and sustainable management and development of water resources of Uganda. The WPC has been supported and facilitated to effectively perform its functions, and it meets twice a year.

The Ongoing projects under Water Resources Management include 137-Lake Victoria Environment Management project (LVEMP II), 124- Lakes Edward and Albert Fisheries and Water Resources Management Project (LEAFII), 165-Support to Water Resources Management Project, 1021- Mapping

of Ground Water Project, 1231a-Water Management Development Project (WMDP- Water Resources Component), 1302-Support to Hydropower Project and 1348-Water Management Zones Project.

Challenges in Water Resources Management include:

Pollution and overexploitation of water resources, low compliance to water laws and regulations, underdeveloped sectoral approaches to planning and implementation of water resources development and management programs, lack of appreciation of the importance of water resources to socio-economic development and poverty alleviation coupled with inadequate funding, low prioritization of water resources issues at all levels and trans-boundary water resources issues. The predicted impacts of climate change are likely to hamper water access and supply. Rising temperatures, evaporation and persistent drought are likely into increase water stress and competition for water uses which could result into conflicts over water resources. Climate change and variability are also one of the causes of reduced water tables, drying up of streams and wetlands all which affect agriculture and water access. Changes in onsets of rainy seasons will likely change surface flow regimes.

2.5 Environment and Natural Resources (ENR)

2.5.1 Environmental Management for Sustainable Development

Uganda is endowed with a rich and diverse environment and natural resource base which underpins economic growth and livelihoods security. There are strong linkages between maintaining ENR and the thriving of other sectors of the economy notably agriculture, tourism and health, in addition to ENR supporting the attainment of regional and international commitments such as the Sustainable Development Goals. Indeed in spite of the ongoing structural transformation, Uganda is still a natural resource-based economy, with ENR significantly contributing to food and energy security, the Gross Domestic Product, employment, foreign exchange earnings and local revenues.

Its significant contribution notwithstanding, ENR is under threat from both natural and man-made drivers of change including poverty, rapid population growth, unplanned urbanization, expansion of informal settlements, industrialization, and the impacts of climate change and variability among others. Fragile ecosystems including hilly and mountainous areas, riverbanks, lakeshores and rangelands are facing encroachment and degradation. For instance, according to the Water Resources Assessment Report 2013, there is a decline of water resources from 63-43km3/year. The declining water resource is affecting the availability of water for production, HEP generation and human consumption. Pollution levels are also on the increase and the country is contending with new and emerging environmental issues arising from e-waste, unsound use of chemicals, oil and gas development and the impacts of climate change.

In spite of the above underlying factors, significant achievements have been made in the last 10 years some of which include the following:

i. Improved the urban environment in 17 municipalities through the construction of 12 solid waste composting plants in Arua, Masindi, Hoima, Lira, Soroti, Mbale, Jinja, Mukono, Fort Portal, Kasese, Mbarara and Kabale. Specialized equipment for solid waste management was provided to the urban local governments in the towns of Busia, Tororo, Mityana and Gulu.
ii. Enhanced compliance to environmental standards by 70% in various industries including breweries, beverages, sugar tanneries and cement industries as a result of enhanced inspections, audits, monitoring, compliance agreements and adoption of cleaner production processes.
iii. Established a system for sound management of environmental aspects of oil and gas throughout the petroleum value chain through; development of sensitivity atlases, environment monitoring

plan, Strategic Environment Assessment (SEA), Environment Impact Assessment (EIA) and Audit processes, public education and awareness, establishment of an office in the Albertine Graben, regular monitoring and inspections, oil waste management and review of environment legislation to include aspects of oil and gas;

iv. Enhanced the Implementation of Government of Uganda commitments to Multilateral Environment Agreements (MEAs) and conventions specifically: developed and implemented the National Biodiversity Strategy and Action Plan (NBSAP); established a Clearing House Mechanism (CHM) for Biodiversity information; reduced the importation of Ozone depleting substance and products under the Montreal Protocol; developed a national profile for Persistent Organic Pollutants (POPs), established National Implementation Plan and developed regulations on sound management of Chemicals; facilitated the ratification of the Nagoya protocol and the Minamata Convention; and regulated the transboundary movement of hazardous waste in collaboration with URA in line with the Basel Convention.

v. Developed and supported policy and legal frameworks for environment management including Electronic Waste; Sound Management of Chemicals, national petroleum laws, wildlife and water policies, the National Environment Management Policy and the National Environment Act; and Climate Change Policy.

vi. Supported integration of environmental aspects into national, sectoral and local government policies, plans, programmes and budgets including the private sector as a result of routine capacity building, supervision and monitoring and policy reviews and dialogues.

vii. Restored degraded critical eco-systems such as catchments of Lake Victoria (Bugiri, Jinja, Mpigi, Kalangala, Rakai, Isingiro, Mitooma and Kalungu) River Nile (Jinja, Kayunga, Kamuli, Nebbi) and Lake Kyoga basin (Kumi, Ngora, Kibuku, Pallisa), the Kalagala Sustainable Management Plan (KSMP) has been operationalised under Mabira Forest Ecosystem to off-set the impacts of Bujagali Energy Limited. Rangelands Management Action plans have been prepared for some districts under the cattle corridor. Supported the development of watershed management plans based on wetland systems and communities have been empowered to conserve and sustainably manage ecosystems.

viii. Increased environmental information and education through the generation and sharing of environmental information using two yearly National State of the Environment Reports (SOER), holding policy dialogues and debates and outreach programmes. Also, on a regular basis, national communication reports are prepared and submitted to the secretariats of international conventions.

ix. Facilitated the implementation of Sustainable Land Management Programme (SLM) in collaboration with MAAIF under a project on “Enabling Environment to Overcome Land Degradation in the Uganda Cattle Corridor Districts-Lyantonde, Sembabule, Nakaseke, Kaliro, Nakasongola and Kamuli”. UNDP/COMESA supporting a project on Enhancing Adoption of Climate Smart Agriculture Practices in Uganda‘s Farming Systems in the District Local Governments of Kamuli, Sembabule, Bugiri, Busia, Budaka, Namutumba and Buyende.

x. Facilitated several public and private investments in the country such as the Bujagali, Karuma and Isimba Hydro-electric power (HEP) plant, road infrastructure projects, industrial development projects, Telecoms, Housing, Power distribution, water and sanitation projects, palm oil project in Kalangala through the EIA process.

xi. Coordinated the Rio+20 sustainable development processes including the post 2015 development agenda; the Sustainable Development Goals (SDGs) negotiation processes and coordinating the implementation of the outcomes and commitments such as transition to a Green Economy and a shift towards Sustainable Consumption and Production (SCP).

Challenges and constraints

Although there have been successful environment management interventions in the past 10 years, generally the quantity, quality, diversity and productivity of ENR is on a downward trend. The demand for ENR has however continued to increase as a result of population growth, unsustainable consumption and production patterns. Efforts to manage the environment sustainably and to ensure restoration of ecosystems' integrity have increased over the years, but these efforts have been associated with challenges:

i. The environment management sub-sector remains grossly under-funded, with few prospects of long-term investments in both physical ecosystems protection and institutional capacity development. The sub-sector's share of the national budget has stagnated (to 0.5-1%) over the last 5 years. This reflects a low prioritization of the sub-sector despite the fact that there is concern that current funding levels are insufficient to meet the second NDP and Vision 2040 targets;
ii. Low level of awareness and appreciation of the critical linkages between environment and development. This increases the cost of environmental management; indeed, it is partly due to the limited appreciation and ownership of environmental issues that funding to the sub-sector has stagnated over the years. There are concerns that some of the rehabilitated critical ecosystems may not be sustainably maintained without continued support from the central authorities.
iii. Inadequate institutional capacity. Despite the impressive policy and legal frameworks, institutional capacity for environmental management is undermined by inadequate manpower, skills, knowledge, resources and logistical support among ENR institutions. Although environment management is a decentralized function, the devolved functions are not supported with the requisite resources and capacity. This has undermined the implementation of environment management activities especially at the local government level.
iv. Continuous policy and institutional reforms: the overall institutional environment has not yet sufficiently stabilized to develop appropriate systems and mechanisms for long-term capacity development and retention, as public sector reforms are still on-going. The resulting high turnover of staff and organizational restructuring tend to undermine the efficiency and effectiveness of investments in human resource training and institutional systems development.

2.5.2 Forestry Management

Uganda's forest coverage has faced a decline at a very fast rate during the last decade. Preliminary results of an analysis using 2010 and 2015 spatial data show that forest cover is at between 10 and 11 percent. This represents a decline of 14% from the previous analysis of forest cover of 24% in 1990. This has been mainly due to deforestation, forest degradation, change of land use to agriculture and settlements due to population and development pressures and increasing demand for forest products. The sector has taken steps to reverse this trend. The current stand of plantation comprises around 80,000 Ha of forest plantations and woodlots established on private land, and forest reserves by communities, private sector and Government. Forest Management Plans (FMPs) have been prepared for all the 506 CFRs under NFA management to facilitate enhanced management of the forests. A number of Community Action Plans have also been developed to guide community tree planting and forest management. The process to review and implement FMPs for all Local Forest Reserves (LFRs) to guide sustainable management of the forest resources is on-going. A total of 4,000 Km of CFR boundaries have been opened out of the 11,000 Km contributing greatly to the reduction in encroachment of the reserves. Investment in forestry by private sector has increased. This is mainly in areas of tourism, tree nurseries and establishment of commercial forest plantations.

On-going activities

The sector has undertaken initiatives and interventions to enhance integrity of forests and reverse the increasing rate of deforestation and forest degradation that has led to negative impacts on the national and household economy, environment and social wellbeing of Ugandans. Government has come up with strategies and projects that are on-going as follows:

i. **Sawlog Production Grant Scheme (SPGS)** that supports private sector to establish quality timber plantations. Phase I, of the project run from 2004 to 2009, the current phase, Phase II succeeded the first phase in 2009 and it ended in December 2013. The current plantations established under the project are targeted to deliver a sustainable yield of 1.3 million cubic metres of mainly pine timber from the 40,000 Ha of plantations supported under SPGS phases I and II.
ii. **Farm Income Enhancement and Forest Conservation Project (FIEFOC)** that ran from 2004 and ended on 31st December 2012. Another 30,000 Ha have been planted and established under the first phase of FIEFOC. Preparations for phase II of the project are underway and current resources provided to support the bridging phase mainly focus on rehabilitation of catchments of irrigation schemes of Doho, Mobuku, Agoro and Olweny.
iii. **NFA plantation establishment initiatives on CFRs** that are implemented as part of their forest management and plantation development activities. Under NFA, 13,450 Ha have been planted and established.
iv. Cabinet approved the **National Tree Planting Strategy** and its enforcement across the country on 6th June 2012 with 5 main components of community tree planting; plantation establishment by NFA on CFRs; afforestation of fragile ecosystems on bare hills, lake shores and river bank; rehabilitation and management of natural forests and woodlands; and development of commercial forest plantations. Preparations to implement the strategy are in advanced stages. The target is to green Ugandan economy through massive tree planting across the country and improving integrity of existing forests through sustainably managing the forests.
v. Since 2007, cabinet approved 4 Days (8th March, 1st May, 12 August and 21st March) **as National Tree Planting days** during which tree planting campaigns are promoted across the country.
vi. Uganda obligation under the UNFCCC commits the country to slow, halt and reverse forest cover and carbon loss using *"policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forest and enhancement of forest carbon stocks in developing countries"*, also known as REDD+. Effective 2010, Uganda began the REDD+ Readiness preparation activities and in 2012, FSSD became the secretariat for the **National** REDD+ Programme. The FSSD is coordinating the preparation of a REDD+ Strategy and costed action plan. It is also responsible through NFA for the development of a forward looking forest reference scenario; a national forest monitoring system for the monitoring and reporting of the REDD+ activities; and for the development of a compressive system of social and environmental safeguards.
vii. The NRM Manifesto that the Government is implementing committed to plant 200 million seedlings over the 6 years.

The Challenges under Forestry sub-sector include: encroachments on forest reserves continue to be the biggest threat to forests in protected areas. This has led to degradation of natural forests and a disincentive to development of commercial forest plantations in the forests. Other challenges include unpredictable weather patterns, especially the dry season, resulting into unexpected fires, yet the sector has insufficient field equipment and materials to curb the fires (fire towers, underground water tanks and other fire-fighting equipment), illegal forestry activities in protected forests and forests on private land that have put a further strain on the management of forest resources, unclear forest

reserve boundaries that encourage encroachment of the forests, limited technologies to process forest products and enhance value addition, outdated forest cover data that undermines informed planning and management decision making, inadequate human and financial capacity at all levels for forest management and development.

The mentioned challenges are most severe for local governments, where the biggest percentage of forests (64%) are managed and delivery of forest extension services to tree farmers and private forest owners are done. The Forest Sector Support Department (FSSD) of the Ministry that is responsible for sector oversight, planning, regulation and sector coordination is also ill equipped in terms of personnel and financial resources.

2.5.3 Wetland Resources Management

In the last 3 years, Government has demarcated, with pillars and beacons, over 359Kms of critical wetland boundaries countrywide. Restoration of degraded sections of wetlands is on-going with the involvement of communities and Local Governments through community based wetland management plans. This has helped to clarify on the boundary lines for ease of enforcement interventions and for rationalizing access to resources.

To enhance the knowledge base on of ecological process and socio-economic values of wetlands as a means to solicit stakeholders' participation, government has completed the inventory and assessment of all wetlands to create national database information. This has enabled the up-grade of the National Wetlands Information System (NWIS) into Arc-Map 10.1 software. Government has further established and maintained partnerships with Civil Society Organizations to enhance Communication, Education, Participation and Awareness (CEPA) activities country wide resulting into the positive change in attitudes by resource users on wetlands management as well as self-monitoring.

In terms of strengthening institutional frameworks to enhance implementation of programmes at lower levels, Government has established 04 functional Regional Technical Support Units (RTSUs) based in Lira, Mbale, Wakiso and Mbarara, as well as inter-district wetland coordination committees.

The country also hosts the RAMSAR Centre for Eastern Africa (RAMCEA), as a Centre of excellence for Capacity Development on wetland management in the Eastern Africa Region for RAMSAR site stakeholders' capacity development.

The Challenges to performance in Wetlands management are: lack of wetland specific law with adequate provisions to guide effective management of the wetland ecosystems. The existing related provisions of the current laws are inconsistent, impose weak penalties and are devoid of funding mechanisms. In addition, the capacity at both Central and Local Government to plan and implement wetland conservation interventions is weak, there are conflicting GoU sectoral policies which undermines wetland conservation functions and subjects wetland ecosystems to short-term development objectives rather than long-term benefits, there is need for compensation of the land owners with titles acquired before the 1995 Constitution of Uganda which calls for increased funding to implement this challenge; limited specialized skills and equipment for the effective management of wetlands and poor marketing strategies for wetland products which makes them less competitive on the local and international markets.

2.5.4 Weather, Climate and Climate Change

2.5.4.1 Meteorology

Throughout the world, meteorological services are essential for real time, short term, seasonal and long term forecasting for agriculture, civil aviation and air defence purposes. The sub-sector also

supports planning and management in water resource use; solar energy use; research, disaster and rescue operations. Furthermore, transport, trade and tourism; and monitoring and management of environmental related diseases are aided by ready availability of reliable meteorological information. Information on meteorological parameters is essential in the design, construction and management of physical infrastructure. In addition, meteorological information supports understanding of weather variability and climate change as well as their impact on socio-economic development.

The short term prediction accuracy has remained in the range of 40 to 50 per cent while the long-term prediction has improved to 85 per cent with the acquisition of additional modern equipment and expansion of the observation network. Upper air observations have resumed at the Entebbe Upper Air Sounding Station while the satellite ground receiving station continues to provide satellite data to compliment the surface observations. On the whole, only 20 per cent of the required equipment is available to capture the required weather and climate data and information. Upgrading and replacement of the equipment with modern technology is on-going with a focus on transforming the equipment into automated versions.

Currently, out of 20 agro-meteorological zones in the country, only 8 have observation stations; out of 110 climatological zones, only 28 have observation stations; out of 20 hydro-meteorological zones, only 6 have observation stations; Out of 16 synoptic zones, only 12 have observation stations; out of 600 rainfall zones, only 170 have stations; and out of 4 satellite zones, only one observation station is in place.

Daily weather forecasts are prepared and issued to stakeholders with concerted efforts to sensitize the populace on the use of this information in view of the emerging climate change effects. Seasonal forecasts are developed and translated into local languages for the benefit of the rural farming communities and other stakeholders. Aeronautical information for international and domestic aviation services within Uganda airspace is provided in collaboration with global aeronautical centers. A dedicated programme to upgrade skills and capacities of staff of the Uganda National Meteorological Authority is being implemented including sponsorship of staff for PhD, Masters and Bachelor's degree programmes.

Within the global network, accurate prediction of weather and climate phenomena requires data and information from other countries. To attain this, Uganda continues to expand and strengthen its membership to international Protocols, Conventions and Agreements which bind it to certain standards and obligations. Currently, data and information is exchanged within member countries at scheduled time intervals and agreed standards for various purposes including search and rescue missions and disaster management on land, air and water.

Uganda has advanced institutional reforms in the meteorology sub-sector. The autonomous authority Uganda National Meteorological Authority (UMMA) was set up in line with the commitment under the EAC and international best practices. The Authority commenced operations on 24th January 2014 and is gaining full strength during the NDPII period.

The Constraints to the Performance of the Meteorology Sector are: obsolete and inadequate equipment, which limits data collection, analysis and provision of meteorological services, acute shortage of skilled human resources, weak institutional set-up and limited appreciation and use of meteorological services by other sectors of the economy.

2.5.4.2 Climate Change

Uganda's most valuable natural resources such as water, forests, wildlife and most importantly human activities are increasingly impacted upon by climate change. In particular, the past few decades have

experienced remarkable climate extremes and impacts more especially through droughts, floods, storms, heat waves and landslides. The impacts have had serious effects on agricultural production, food security, incomes, health status and livelihoods. The combined effect of climate change impacts on agriculture, water, ecosystems, energy and health is greatly affecting poverty reduction programmes in the country. Extreme climate events have led to displacement of communities and migration of pastoralists resulting in conflicts over natural resources. A slow onset of events associated with climate change also lead to competition over scarce resources resulting in human-wildlife conflicts. Other climate change impacts include widespread disease epidemics, and depletion of glaciers on Mount Rwenzori. The projected impacts of climate change indicate even more serious effects on human development.

Uganda is committed to addressing the climate change challenge and has made significant progress towards creating an enabling policy environment for tackling climate change. Uganda is a signatory to both the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP), which provide the basis for an international response to the challenges of climate change. By signing and ratifying both the UNFCCC and the Kyoto Protocol, Uganda committed itself to the adoption and implementation of policies and measures designed to mitigate climate change and adapt to its impacts. Uganda is a member of the East African community (EAC) and is therefore a party to the implementation of the EAC Climate Change Policy, which requires member states to initiate and develop consistent and harmonized policies and plans to address climate change. Uganda has developed a National Climate Change Policy (NCCP) and Costed Implementation Strategy. The goal of the climate change policy ***is 'to ensure a harmonized and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda'***. The Policy aims at guiding all climate change activities and interventions in the country by providing direction for the key sectors that will be affected by the impacts of climate change, facilitating adaptation and strengthening coordinated efforts amongst sectors towards building an overarching national development process that is more resilient. The implementation of the NCCP requires mainstreaming of climate change into the sector specific development plans. The Ministry of Water and Environment steers the coordination aspects of climate change in the country.

The Ongoing projects under Natural Resources Management include 146-National Wetlands Management Project, 169-Farm Income Enhancement and Forest Conservation Project (FIEFOC-II), 1189-Sawlog Grant Production Scheme, 1301-National REDD+, 1304-Support to National Environment Management Authority (NEMA Phase II, 161-Support to National Forestry Authority, 1371-Uganda National Meteorological. Authority, and 1102- Climate Change Project.

The constraints to performance in the Climate Change Sub-Sector include: weak institutional arrangement and shortage of requisite expertise, limited awareness at all levels about the causes and effects of climate change and/or climate variability as well as their impacts to socio-economic development plans and activities, inadequate conceptualization of the importance of weather and climate information by institutions and the public, insufficient and unreliable scientific data and information especially climatic data necessarily for forecasting, inadequate institutional structures and financial resources and weak national coordination mechanisms.

2.6 Sector Institutional Capacity Development

Implementation of activities in the Water and Environment sector involves various partners at national and sub-national level as well as community levels. The private sector is gradually taking up major roles in the provision of services in the sector. Comprehensive policies, regulations and guidelines do exist and continue to be developed for the benefit of all stakeholders; to turn these into action and maximum benefit, coherent and synergistic efforts are required to ensure that the proposed

intentions are not misdirected during implementation. Resources have been invested into developing information systems and training of staff and other stakeholders to build capacity in the sector. However, there is need to expand these efforts and strengthen the coordination and collaboration or the benefit of the entire sector.

The ongoing projects under Sector Institutional Capacity Development include 151- Policy and Management Support Programme, 1190-Support to Nyabyeya College and 1231d-Water Management Development Programme (WMDP-Coordination Component).

Constraints to Sector and Institutional Capacity Development performance are: limited management structures both at the central institutions and the Local Governments for technical staff especially for water, forestry, environment and wetland management; high turn-over of staff in some departments largely due to low morale and capacitation especially in local governments; infancy and/or non-existence of competent private sector to partner with government in delivery of services.

SECTION THREE - STRATEGIC DIRECTION OF THE WATER AND ENVIRONMENT SECTOR

This section covers the objectives, strategies, and priority interventions by thematic area expected to realize the desired goals under the Sector Development Plan and National Development Plan (NDPII) in the period of FY2014/2015-2019/20. It also seeks to contribute to the attainment of the national Vision 2040 as well as the Sustainable Development Goals (SDGs).

3.1 The Uganda National Development Plan II Strategic Direction

The strategic direction of the Water and Environment sector is guided by the national Development Strategic Direction espoused in the Second National Development Plan (NDPII 2015/16-2019/20). The National Strategic Direction is defined by the goal of "attaining lower middle-income status by 2020 with an annual per capita income of USD 1,033. This will be through strengthening competitiveness for sustainable wealth creation, employment and inclusive growth with prioritization of agriculture, tourism development, minerals and oil and gas, infrastructure development and human capital development.

The aforementioned goal is cascaded down into four broad national objectives of which the implementation and achievement will inevitably accelerate the attainment of the national goal of lower middle income status by 2020. These goals are (i) Increase Sustainable Production, Productivity and Value Addition in Key Growth Opportunities, (ii) Increase the Stock and Quality of Strategic Infrastructure to Accelerate the Country's Competitiveness, (iii) Enhance Human Capital Development, and (iv) Straighten Mechanisms for Quality, Effective and Efficient Service Delivery.

3.1.1 The role of Water and Environment in National Development

The Water and Environment Sector Development Plan (SDP) was developed in fulfillment of the requirement alignment of the sectoral strategic objectives, priorities and planned interventions to the second National Development Plan (NDPII). Water and Environment is central in contributing to the achievements of all the NDPII goals. Broadly, all the sub-sectors such as water supply and sanitation infrastructure, water resources management, water for production, environment management, and weather, climate and climate change are fundamental in boosting production and productivity along value chains for social transformation and sustainable development. In particular, water resource is central to hydro-power development, agricultural production and productivity, industrial development, tourism development and mitigation of climate change effects. Similarly a healthy, clean and productive environment is essential for sustainable development because it reflects the balance between the demand and supply of natural resources on one hand and the absorption and supply of waste products on the other hand in the development process. Therefore, once this sector is properly implemented it will ultimately meet the over-arching aims of the socio-economic transformation of this country. It will also ultimately contribute to the attainment of the national Vision 2040 in totality.

3.1.2 Key Sector Interventions to reach Middle Income Status by 2020

The NDPII identifies agriculture, minerals, oil and gas, human capita development and infrastructure as sectors that propel Uganda to middle income. The productivity and sustainability of the aforementioned sectors along with the entire value chain depend on the availability of rational and sustainable utilization of natural resources including water. H.E the President issued directives and strategic guidelines for Uganda's attainment of middle income status by 2020 for each sector. The sector is committed to implement its specific guidelines in order to reverse the poverty trend in the

country. In view of that, this SDP has identified priorities and interventions, coherent with the Vision 2040, NDPII as well as the NRM Manifesto for implementation. These include:

Issue 1: **Build the 25 Industrial Parks** - The Water and Environment Sector in collaboration with Uganda Investment Authority and other actors will ensure that all industrial and business parks (existing and planned) are served with water and sewerage services. These include Kampala Industrial Park-Namanve, Luzira Industrial Park, Bweyogerere, Jinja (Masese industrial Park Masaka (Bukakata industrial Park), Moroto (Katanga Industrial Park), Kasese (Mbarara road Industrial Park), Soroti (Arapai Industrial Park), Mbarara (Makenke Industrial park), Mbale (Doko Industrial Park), Mubende, Arua, Gulu, Lira, Nakaseke, Bushenyi, Kabale, Mityana, Iganga, Tororo, Hoima and Kabarole.

Issue 2: **Fast-track approval of Environment Impact Assessments (EIAs)**-The sector will set a target of issuing all the necessary licenses, and develop standard assessment methods including Environmental Impact Assessment (EIA).

Issue 3: **Stop damage of the environment using persuasive and educative ways**- The Sector will encourage encroachers to vacate Central Forest Reserves (CFR) given that approximately 120,000 hectares translated as 10% of the CFR land is heavily encroached causing serious social, economic, environmental and discontent amongst communities, eliminate fraudulent titling and grabbing of land in CFRs and degazettement of Forest Reserves, establish the Tree Fund, and promote tree planting. Secondly, it will purchase more land from private owners to increase forest cover and review the protection of the lake shore boundary of 200m.

Issue 4: **Follow-up with Makerere designing the solar-powered water pump**-MWE, in collaboration with MAAIF will provide water for irrigation using solar power for improved production and productivity. So far, the sector has identified 43 medium and large scale irrigation schemes and 104 bulk water systems. Water for Oil and Gas Development will also be taken into consideration.

Issue 5: **All Cities, Towns and Trading Centers to get Safe and Clean Water**. The sector aims to achieve 100% urban safe water coverage by 2020. The sector will expand clean water infrastructure for piped water and borehole systems. It will also peruse its plans to provide each village/town/city with at least one source of safe water and supply water in water-stressed areas using bulk water systems as one of the strategies. The details of the proposed interventions are provided in Annex 3.

3.1.3 Integration of Sustainable Development Goals in Sector Development Plans

Besides the national strategic direction, the sector strategic direction seeks to contribute greatly to the 2030 Agenda on Sustainable Development Goals (SDGs). The alignment of the Water and Environment Sector Development Plan (SDP) to the NDPII is one of the ways of implementing the Sustainable Development Goals namely:

Goal 6: Ensure availability and sustainable management of water and sanitation for all.

Goal 13: Take urgent action to combat climate change and its impacts.

Goal 15: Protect, restore and promote sustainable use of terrestrial eco-systems, suitably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.

The Water and Environment Sector will strive to implement the SDGs through a holistic and integrated approach across sub-sectors, while the attainment of these goals will be assessed in accordance to the given goal, the related targets and outcome indicators. For example, by 2030, the Sustainable Development Goal- 6 will have to address the following;

Target:	Achieve universal and equitable access to safe and affordable drinking water for all"
Indicator:	Proportion of population using safely managed drinking water services
Target:	Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
Indicator:	Proportion of population using safely managed sanitation services, including a hand washing facility with soap and water
Target:	Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally"
Indicator 1:	Proportion of Wastewater safely treated
Indicator 2:	Proportion of bodies of water with good ambient water quality
Target:	Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity"
Indicator 1:	Change in Water use efficiency
Indicator 2:	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
Target	Implement integrated water resources management at all levels, including through trans-boundary cooperation as appropriate"
Indicator 1:	Degree of integrated water resources management implementation (0-100)
Indicator 2:	Proportion of trans-boundary basin area with an operational arrangement for water cooperation
Target:	Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes"
Indicator:	Change in the extent of water-related ecosystems over time
Target:	Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies"
Indicator 1:	Amount of water- and sanitation-related official development assistance that is part of a government coordinated spending plan
Indicator 2:	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.

For **Goals 13 and 15** the targets and indicators are already well defined and will be achieved through sector priority interventions under Environment and Natural Resources focusing on promotion, rational and sustainable utilization of natural resources plus development and effective management of environment. This will be achieved by ensuring the integrity and functionality of degraded fragile ecosystems, increase the sustainable use of environment and natural resources, increase wetland and forest coverage as well as adaptation and mitigation for increased resilience to climate change etc.

3.2 Specific Sector Strategic Priorities and Interventions

The sector strategic direction will be guided by the desired sector goals:

i. Increase access to safe water in rural areas from the current 65 percent to 79% by end of 2019/20 by ensuring that each village has a safe water source; increasing sanitation and hygiene levels in rural and sewerage in urban areas to 95%; increasing functionality of water supply systems and promote catchment based integrated water resources management.

ii. Increase urban water supply from 73 per cent to 100 per cent, improvements in sanitation by upgrading to sewer piped systems from the current 6% to 30% of the population in towns served by National Water and Sewerage Corporation (NWSC) with a population greater than 15,000.

iii. Construction of communal and private surface water storage reservoirs for multipurpose uses will be undertaken to secure water for domestic supply, irrigation, livestock, aquaculture, industry and the environment. In terms of cumulative storage for water for production it will increase from the current 31.7MCM to 58 MCM.

iv. To protect, restore and maintain the integrity of degraded fragile ecosystems, increase national forest cover from 14 percent to 18 percent, increase national wetland coverage from 10.9 percent to 12 percent, increase automation of climate monitoring network from 10 percent to 40 percent by end of 2019/2020 and increase country's resilience to the impacts of climate change effects.

v. Management of the water resources of Uganda in a wise, integrated, sustainable and coordinated manner so as to secure water of adequate quantity and quality to meet all social and economic needs of present and future generation.

vi. In its effort to build a sustainable green economy, the sector will address the rampant environmental degradation by restoring and maintaining the integrity of degraded fragile ecosystems and demarcation of critical wetland/forest boundaries including massive tree planting countrywide leading to an increase in coverage of 12 percent and 18 percent respectively.

vii. Implementation of the outcome of COP under UNFCCC decisions and the Uganda National Climate Change Policy in order to transform Uganda society to build resilience and low carbon economy for sustainable development.

In order to meet the over-arching aims of socio-economic transformation, NDPII emphasises Water and Environment Sector specific priorities, objectives and interventions that constitute the strategic direction and contribution for the period 2015/16-2019/20. It also outlines cross-cutting issues to be mainstreamed and integrated into other sector policies as strategies to increase production and productivity along value chains. The detailed objectives and strategic interventions under each thematic area of Environment and Natural Resources, Water and Sanitation Infrastructure Development and Water for Production are outlined in the following sections.

3.2.1 Rural Water Supply and Sanitation Services

Over the period of this Plan, focus will be on ensuring availability and access to safe and clean water and hygienic sanitation facilities in rural areas, as well as delivering viable sanitation systems for

domestic, industrial and commercial use based on management responsibility and ownership by users. The Water and Environment Sector will prioritize increasing access to safe water, increasing sanitation and hygiene levels and increasing functionality of water supply systems, incorporate gender analysis, implement water resources management reforms and promote catchment-based integrated water resources management.

The sector targets to increase water supply coverage in rural areas from 65 percent in 2014/15 to 79 percent in 2019/20 by ensuring that at least each village has a clean and safe water source; and by ensuring functionality and effective use of the water supply systems. In a bid to increase safe water coverage, the sector intends to adopt a policy shift from the use of point water sources to introducing piped water supply systems in the medium and long term, which is expected to be sustainable and will address water needs for both rural and urban areas. This policy shift will include:

i. Development of large gravity-fed piped water supply schemes with river-based sources in mountainous regions to serve large areas across district boundaries, or motorized piped water schemes from surface water sources such as lakes and rivers to supply the underserved communities in rural areas;
ii. promotion of integrated rainwater harvesting intended to cover water needs for human consumption, small cottage agricultural processing industries, small scale irrigation and water for livestock at household level; surface runoff harvesting using dams will also provide water for rural areas;
iii. Development of solar-powered mini-piped water schemes to supply more persons that otherwise would be served using point sources with hand pumps.
iv. Promotion of appropriate technologies by undertaking action research and development to identify suitable water supply and sanitation technologies for specific areas. The appropriate technologies are not limited to low cost technology but cover all service levels.
v. Integration of all water supply schemes in the country to cover both rural and urban communities all managed by the same water supply operator such as National Water and Sewerage Corporation, rather than targeting piped water supplies for urban communities only.

3.2.1.1 Objectives, Strategies and Priority Interventions (Rural Water and Sanitation)

Objective 1: By 2020, access to safe and affordable water supply in rural areas has increased from 65 percent to 79 percent, in order to progressively fast track achievement of coverage for all including men and women.

Strategy 1: Construct, operate and maintain appropriate and climate change resilient community water supply systems in rural areas.

Priority Interventions:

i) Construct safe water supply systems in rural areas focusing on un-served areas guided by water point mapping to identify and prioritize pockets of low service.
ii) Construct piped water supply systems in Rural Growth Centres (RGCs) to replace the currently overstretched hand-pumped borehole service technology.
iii) Target multi-village water infrastructure investments abstracting from production wells as well as large Gravity Flow Systems (GFS) where appropriate to serve especially the water-stressed rural areas.
iv) Promote and scale up rainwater harvesting at household, public institutions and community level
v) Promote WASH humanitarian preparedness and response to avert possible outbreaks of water-related diseases especially in settlements for poor communities, refugee camps and displaced persons' communities.

vi) Promote appropriate technologies for water supply interventions such as solar water pumping and investment in income-generating activities such as backyard irrigation of high value crops for wealth creation.
vii) Ensure source protection and environmental safeguards with catchment management plans for all the water supply catchment areas
viii) Promote community involvement in water supply and sanitation management for sustainability and coordination with other agencies and civil society organizations.

Strategy 2: Improve functionality, sustainability and resilience of water supply systems in rural areas to provide safe water all-year-round and reduce the number of people suffering from safe water scarcity.

Priority Interventions:

i) Overhaul the decommissioned water sources (boreholes and gravity flow supply systems) that have been dysfunctional due to old age and replace them with modern and appropriate systems.
ii) Professionalize the rural water O&M through strengthening Community Based Maintenance Systems (CBMS) including re-equipping and retraining non-functional Water User Committees and Boards and revamping the spare parts supply chain through Public Private Partnership arrangements at sub-county level.
iii) Mobilize and promote participation of men and women in the management of water systems encouraging the latter to take up decision-making positions in the Water User Committees.
iv) Increase access to sustainable WASH services through testing innovative approaches to sustainability with particular focus on climate change;
v) Scale up WASH in institutions to address the issue of poor facilities at schools and health centres through collaboration and data analysis of EMIS and HMIS to explore the relationships.

Objective 2: By 2020, access to improved sanitation has increased from 69 per cent to 95 percent for households in rural areas, paying special attention to the needs of women and girls and those in vulnerable situations.

Strategy 1: Promote improved sanitation and hygiene practices in households, communities and rural growth centres in order to reduce the number of deaths and illnesses related to poor sanitation.

Priority Interventions:

i) Strengthen collaboration, communication and cooperation amongst the institutions responsible for sanitation activities (MoH, MoES, MWE) and intensify collaboration with the LGs
ii) Revitalize and strengthen the health inspection function across districts and sub-counties especially by improving transport and establish a sustainable mode for capacity building for the district and lower level staff
iii) Enhance enforcement of the Public Health Act, sanitation ordinances and bye-laws through lower level political structures.
iv) Promote elimination of open defecation to improve public health
v) Create demand for improved sanitation and hygiene using different methodologies, including (i) home and school improvement campaigns and competitions, (ii) community-led total sanitation and (iii) behaviour change communication including promotion of hand-washing with soap and proper management of child faeces
vi) Facilitate the development of the sanitation supply market including promoting the involvement of the private sector
vii) Promote ecological sanitation through waste re-use to increase agricultural production and to prevent pollution of water sources and the environment.

3.2.2 Urban Water Supply Infrastructure and Sewerage Services

The target is to increase urban water supply from 73 percent in 2014/15 to 100 percent by 2019/20, and increase sanitation coverage to 95 percent in towns with population greater than 15,000.

3.2.2.1 Objectives, Strategies and Priority Interventions (Urban Water)

Objective 1: By 2020, access to safe and affordable water supply in urban areas has increased from 73% to 100% by 2020 in order to progressively fast track achievement of coverage for all including men, women, children and vulnerable groups.

Strategy 1: Construct, operate and maintain piped water supply systems in small towns and urban areas outside NWSC jurisdiction countrywide.

Priority Interventions:

i) Construct new safe water supply systems in all small towns and major urban areas and expand the existing water supply systems to supply more people.
ii) Develop strategic tools for O&M to strengthen asset management, regulation, O&M support services and promote a 'clustered'/regionalized water authorities' structure.
iii) Improve the enabling environment for private water operators and reform the public utility model.
iv) Implement improved contract management compliance monitoring systems undertaken by Water Authorities (WAs) and Water Supply and Sanitation Boards (WSSBs).
v) Establish decentralized regulation units at regional level at each Water and Sanitation Development Facilities (WSDFs) for easy coordination and monitoring.
vi) Ensure source protection and environmental safeguards with catchment management plans for all the water supply catchment areas

Strategy 2: Increase water and sewerage service coverage with emphasis on the Greater Kampala Metropolitan Area (GKMA) and overall financial sustainability for the NWSC systems.

Priority Interventions:

i) Expand and intensify production and reticulation to increase service coverage (people accessing NWSC services) from the current level of 77% to 100% (water supply) and to increase from 6% to 30% (sewerage) in the towns under NWSC jurisdiction in order to reduce the proportion of un-treated wastewater.
ii) Increase to from 66 to 100 the number of towns under NWSC jurisdiction through take-over of additional towns.
iii) Develop satellite sewerage systems for Greater Kampala Metropolitan Area (GKMA).
iv) Develop Water Reservoirs on key strategic hills in GKMA.
v) Restructuring and rehabilitation of the network to reduce water losses.

Strategy 3: Promote improved sanitation in urban areas to raise coverage from the current 84 per cent to 90 per cent paying special attention to equity and adequacy for the needs of women and girls and those in vulnerable situations.

Priority Interventions:

i) Increase sewerage connections in towns with sewerage systems and develop new infrastructure for sewerage in towns with piped water supply systems in order to reduce the proportion of untreated wastewater.
ii) Implement the Kampala Sanitation Master Plan.
iii) Modernize solid waste management and treatment in the GKMA and other towns.
iv) Develop a strategy for faecal sludge management for sewerage systems and for septic tanks' clustering and de-clustering public disposal points and use of private sector services with emphasis on reducing transportation distances.

3.2.3 Water for Production Infrastructure

The Water for Production (WfP) sub-sector is responsible for the development and utilization of water for production facilities and increasing the functionality and utilization of water for production facilities for productive use in crop irrigation, livestock, aquaculture, industries and other commercial uses as well as maintenance of its environment and ecosystem. The central government will continue implementing programmes for the construction of strategic reservoirs, bulk water transfers and inter-district projects while the districts will continue with reservoirs of less than 10,000 cubic metres. During the implementation period, the Water for Production targets to increase cumulative storage of water for production from the current 31.7 MCM in 2014/15 to 38 MCM in 2019/20. This will be achieved through the following strategies and interventions:

3.2.3.1 Objectives, Strategies and Priority Interventions (water for production)

Objective 1: By 2020, provision and utilization of water for production facilities to enhance production and productivity has increased across all sectors contributing to ending poverty, hunger and achieving food security and improved nutrition for all men, women and vulnerable groups.

Strategy 1: Increase the functionality of water for production facilities from 75% to 82%.

Priority Interventions:

i) Strengthen the Community Based Management System (CBMS) for facilities constructed with funding from Central Government or District Local Governments.
ii) Undertake community promotion measures to increase cost recovery and collective O&M action
iii) Mobilize and sensitize beneficiary communities on the importance of contributing operation and maintenance fees, including use of micro-finance.
iv) Improve catchment protection and management.
v) Improve coordination and collaboration with all line Ministries, Departments and Agencies (MDAs) to ensure that backup support and monitoring system is operational at all levels.

Strategy 2: Increase the proportion of Water for Production facilities that are managed by the private sector.

Priority Interventions:

i) Build capacity of the private sector in construction of small volume water reservoirs.
ii) Increase production to ensure that operations are profitable, in other words exceed costs of O&M
iii) Develop the capacity of local private sector to take over management

Objective 2: By 2020, the proportion of livestock supplied with water facilities has increased from 50% to 70% in the cattle corridor districts, and from 20% to 30% in the districts outside the cattle corridor by contributing to resilient agricultural practices that increase productivity, maintaining ecosystems and strengthening capacity for adaptation to climate change.

Strategy 1: Increase the cumulative water for production storage constructed by private farmers from 1.04 MCM to 3.0 MCM.

Priority Interventions

i) Mobilize communities to ensure benefits of the WFP investments to ensure investor (including government) confidence.
ii) Purchase and deploy construction equipment to increase public and private sector involvement in the implementation of water for production facilities.
iii) Construct valley tanks and dams on private farms, using the Force Account.

Strategy 2: Increase cumulative storage capacity of water for livestock for communal/public use from 27% to 38%.

Intervention areas:

i) Mobilize and sensitize beneficiary communities on the importance of contributing land and access route to the sites, participatory involvement during the implementation and effective utilization of the facilities.
ii) Carry out feasibility studies and designs of dams and valley tanks.
iii) Construct/rehabilitate dams and valley tanks to meet the targets.
iv) Improve and ensure that investments are cost effective and a high functionality.

Objective 3: By 2020, irrigation water development and utilization of irrigation potential has increased from 1% to 5% in order to promote sustainable agriculture and increase employment opportunities and household incomes.

Strategy 1: Construction of dams and irrigation systems.

Priority Interventions

i) National Irrigation Policy prepared
ii) Mobilize the communities to provide land and access routes to the facility, to be involved during implementation of irrigation schemes and, to effectively utilize water to increase production and productivity.
iii) Invest in cost-effective and sustainable systems for optimizing use of rainfall and irrigation water for Water-Smart Agriculture.
iv) identify areas of irrigation potential and carry out feasibility study and designs
v) Construct irrigation schemes and support the functionality of the water infrastructure

Strategy 2: Establish an effective management framework for irrigation schemes.

Priority Interventions:

i) Develop and set up an appropriate management framework for the constructed irrigation schemes
ii) Gazette irrigation areas to strengthen management.

Objective 4: By 2020, strategic water storage for multi-purpose use has increased and the number of areas (people) suffering from water stress (scarcity) has substantially reduced.

Strategy 1: Construction of new bulk water systems for multipurpose use

Priority Interventions:

i) Mobilize investors to implement bulk water schemes under Public-Private Partnership (PPP) to accelerate the provision of bulk water for multipurpose use.
ii) Construction of bulk water supply schemes (dams, water abstraction, transmission and distribution to different points of use).
iii) Construction of large strategic reservoirs at sub-county level covering the water-stressed areas of the country to store and avail water for multipurpose use.

Strategy 2: Improve the availability of water for rural industries, tourism and other commercial uses

Priority Interventions:

i) Engage investors to provide water to their rural industries, tourism sites, fish ponds and aquaculture parks
ii) Construct or extend water to rural industries, tourism sites, fish ponds and aquaculture parks on a cost-sharing basis.

Strategy 3: Establish management framework for bulk water schemes.

Priority Interventions:

i) Gazette water supply areas for large dams and involve private operators to strengthen management.
ii) Appoint and sign performance contracts with the water authorities to manage the bulk water schemes

3.2.4 Water Resources Management

Integrated and sustainable water resources management (WRM) with involvement of stakeholders is of paramount importance in the country. WRM involves several activities including the protection of water catchment areas to meet the needs for various socio-economic activities, the regulation of water use and control of pollution loading to water bodies, implementation of water quality monitoring and management, supporting the activities of the Nile Basin Initiative and trans-boundary water issues, monitoring and supervision of regulation of Lakes Kyoga and Victoria, establishing and operating water resources and water quality monitoring stations and production and disseminating of groundwater, water quality and surface water information.

3.2.4.1 Objectives, Strategies and Priority Interventions

Objective 1: By 2020, coordination of water resources management among various water users and stakeholders has improved, so as to substantially improve water allocation and water-use efficiency across all sectors and address water scarcity.

Strategy 1: Review policy, legal and institutional framework for water resources management

Priority Interventions:

i) Review legal and institutional framework for WRM to address emerging water resources challenges.
ii) Develop relevant policies, regulations and standards.
iii) Establish the Water Resources Institute.
iv) Develop and operationalize the national Strategy and policy for Management of International Water Resources.
v) Support the functioning of the Water Policy Committee.

Strategy 2: Implement IWRM at all levels through participatory approaches in planning, management and development of water resources in Uganda.

Priority Interventions:

i) Provide supervision and support to catchment-based structures and organizations.
ii) Promote collaboration across institutional boundaries (agriculture, energy, environment, forestry, land management etc.) and with key stakeholders in the catchments.
iii) Regularly support and monitor implementation of key catchment management plans.

Objective 2: By 2020, water resources monitoring and assessment has improved, so as to ensure sustainable water resources management.

Strategy 1: Maintain functional water resources monitoring networks.

Priority interventions:

i) Operate and maintain monitoring stations with up-to-date equipment.
ii) Facilitate regular collection of water resources field data for monitoring national indicators and Sustainable Development Goals indicators, as well as impact of encroachment of forests and wetlands on water resources.

iii) Periodically review the monitoring networks to address emerging water resources challenges.

Strategy 2: Process and package WRM data for the public and private users.

Priority Interventions

i) Produce and issue the Hydrological Year Book, water quality reports and Annual Water Resources Status Reports.
ii) Continuously quality assure and update the water resource databases.
iii) Develop staff capacity for water resources data management.
iv) Maintenance of a National WRM data quality assurance/management system.
v) Establish and maintain a Water Resources Information System (WIS).
vi) Upgrade water resources information databases and link them with Geographical Information Systems (GIS) and other data management tools.
vii) Prepare water resources outlooks and forecasts on climate change related disasters (floods, droughts and water related epidemics).

Strategy 3: Increase visibility of water resources management at all levels.

Priority Interventions:

i) Review and implement the Water Resources Management Communication Strategy.
ii) Develop and disseminate relevant Information, Education and Communication materials.
iii) Sensitize and create awareness on the relevance of WRM data and information to the public and potential data users using the media, (e.g. prepare flyers in various languages and distribute to potential WRM users like the agriculturalists, those involved in Early Warning Systems, and water resources related projects like hydropower development).

Strategy 4: Establish the availability of water resources particularly in threatened catchments.

Priority Interventions

i) Define criteria for classifying catchments (e.g. effect of land-use on water resources vis-à-vis climate change; effect of land-use on water resources).
ii) Identify and rank hot spot catchments through the defined criteria.
iii) Control data quality of the identified threatened catchments before water resources modelling is undertaken
iv) Establish a catchment water balance and catchment hydrology for each of the identified catchments

Objective 3: By 2020, improve water quality management, to ensure provision of water of adequate quality for all uses, and address pollution challenges.

Strategy 1: Continuously increase the analytical and quality assurance capability of national and regional water laboratories to address emerging water quality issues.

Priority Interventions

i) Upgrade the National Water Quality Reference Laboratory's (NWQRL) analytical capability to address emerging water quality issues, e.g. those arising from oil & gas abstraction, and mining waste.
ii) Establish four Regional Water Quality Laboratories.
iii) Promote inter-laboratory comparisons for assessment of the competence of water testing laboratories.
iv) Implement capacity enhancement in analytical and laboratory quality system management.
v) Pursue accreditation of the NWQRL to ISO/IEC 17025 International Standard.
vi) Design, construct and equip a new block for NWQRL to meet international standards.

Strategy 2: Increase use of water quality information for integrated water resources management

Priority Interventions

i) Develop skills for water quality data management and decision support tools,
ii) Upgrade the NWQ database to web-enabled visualization systems and link to DWRM's WIS.
iii) Review the National Water Quality Monitoring Network.
iv) Prepare and implement pollution management strategies based on a comprehensive pollution inventory.
v) Develop water quality management tools, quality objectives and classify major water bodies.
vi) Establish baseline water quality information for planned industrial parks, mining areas and the Albertine Graben.

Strategy 3: Establish systems to provide oversight quality assurance for water supply services and wastewater management.

Priority Interventions

i) Finalise and implement the National Laboratory Policy.
ii) Review and disseminate National Water Quality Management Strategy (NWQMS).
iii) Undertake technical audit and compliance checks to ensure compliance to national drinking water, wastewater standards and monitoring of SDG 6 indicators.
iv) Develop water quality protocols, guidelines and standards for all water uses including irrigation.
v) Strengthen coordination and collaboration among stakeholders in water quality management including Environmental Impact Assessments and Reviews.

Strategy 4: Increase dissemination and use of water quality information for early warning and decision making.

Priority Interventions:

i) Improve communication and sharing of information among stakeholders.
ii) Develop and disseminate appropriate IEC materials for targeted stakeholders.
iii) Build capacity and skills of staff in IEC material development, packaging and dissemination.
iv) Establish and operate remote sensing/on-line water quality information systems for water resources monitoring including water quality monitoring in the framework of oil and gas activities.
v) Regularly upload water quality information on the Ministry of website.

Strategy 5: Establish risk-based systems to support efficient water quality management

Priority Interventions:

i) Provide technical support to reinforce capacity for establishment of water safety plans for drinking and waste water facilities.
ii) Make technical audit and compliance checks on risk-based management for safe drinking water in the supply chain.
iii) Promote green growth strategies for pollution reduction at source.
iv) Assess and document compliance to safe drinking water production/supply and wastewater effluent discharge standards.
v) Support building of structures, procedures and culture to alert stakeholders in times of water quality failures and emergencies.

Objective 4: By 2020, water resources planning and regulation has improved so as to ensure sustainable withdrawals and increase water-use efficiency across all sectors and users.

Strategy 1: Continuously increase the proportion of major polluters, abstractors being regulated according to the water laws and regulations, from 67% to 70%.

Priority Interventions

i) Finalize the inventory of waste water dischargers and water users and determine the quality of their effluent and abstraction volumes in all Water Management Zones.
ii) Improve the assessment and evaluation of permits for various water uses and related to a range of issues.
iii) Increase awareness of policy/decision-makers and stakeholders on need for water resources regulation and water resources management in general
iv) Review Environmental Impact Assessment reports related to water resources use and pollution
v) Strategy 2: Increase the proportion of major water reservoirs and water bodies managed and regulated according to the water laws and regulations from 55% to 72%.

Priority Interventions

i) Update inventory of water reservoirs and water bodies in the country
ii) Assess and evaluate permit applications for construction of water reservoirs and utilization of water bodies.
iii) Develop and implement regulations and guidelines for Dam Safety.
iv) Develop and implement tools for water allocation and reservoir regulation.
v) Develop and implement tool for water allocation on the Nile system.
vi) Establish and operationalize dam/reservoir safety regulatory framework

Strategy 3: Report the compliance status in respect to both water abstraction and effluent discharge on a regular basis and increase the compliance status from 71% to 92%, and from 52% to 69%, respectively.

Priority Interventions

i) Provide support to water users and waste water dischargers in complying with regulations.
ii) Increase awareness of policy makers and stakeholders on the need for water resources regulation and water resources management in general.
iii) Conduct area-based handling of all forms of noncompliance and ensure all noncompliance and enforcement actions are captured and stored in a national information system to facilitate accurate, comprehensive, quarterly and annual noncompliance reporting
iv) Increase access to information on compliance to water laws and regulations
v) Continuously improve compliance monitoring and enforcement based on the Compliance and Enforcement Strategy (2010).

Objective 5: By 2020, improve management of trans-boundary water resources so as to promote cooperation in use of water resources in line with obligations under international agreements.

Strategy 1: Safeguard Uganda's interests in international waters through effective trans-boundary cooperation.

Priority Interventions

i) Undertake continuous data and information collection, management and dissemination so that policy positions on trans-boundary issues are well informed.
ii) Participate effectively at international meetings/events and fora where trans-boundary water resources issues are under discussion.
iii) Take continuous action on improving communication and collaboration with neighbouring states including data sharing.
iv) Continuous identification and preparation of new trans-boundary Projects and securing funds for their implementation.
v) Improve and enhance Capacity for national Coordination of International and Trans-boundary Water Affairs

vi) Formulate, review and implement the Transboundary Water Resources Policies, Laws & Regulations

Objective 6: By 2020, improve catchment based integrated water resources planning, management and development to protect and restore water related ecosystems and supply freshwater to address water scarcity.

Strategy 1: Increase catchment-based planning to support the determination of water-related investments.

Priority Interventions

i) Compile available information and studies into accessible products and disseminate them to decision makers, consultants, and project preparation personnel.
ii) Monitor and evaluate the usage and impact of the various products and propose the required improvements.
iii) Develop State of the Basin Reports and strategies for the four Water Management Zones.

Strategy 2: Increase participation in catchment Management Plans (CMPs).

Priority Interventions

i) Establish and operationalize structures for stakeholders' involvement in catchment-based water resources management such as Stakeholders Forum, Catchment Management Committee etc.
ii) Establish investment financing mechanisms (e.g. on co-financing and cost sharing, public private partnerships etc.).
iii) Employ Catchment Planning Guidelines to review and update existing CMPs.
iv) Employ Catchment planning guidelines in the development of new CMPs.
v) Ensure active stakeholder involvement in preparation of CMPs.

Strategy 3: Increase WRM support activities and investments directed toward improving water management and improved quality.

Priority Interventions

i) Promoting the framework for catchment-based water resources management.
ii) Pursue approval of the updated legal and policy framework for WRM.
iii) Promoting the use of Water Source Protection Guidelines.
iv) Establish regional water quality laboratories in all the zones.

Strategy 4: Integrate catchment management plans and implement identified climate change adaptation measures starting with priority catchments.

Priority Interventions

i) Undertake climate change vulnerability and risk assessments in catchments where CMPs are being implemented.
ii) Ensure active stakeholders' involvement in implementation of relevant climate change adaptation measures in the catchment.
iii) Continue training of DWRM staff and other stakeholders in implementation of climate change adaptation measures within CMPs.
iv) Promote collaboration and partnership with relevant agencies and stakeholders in implementation of the CMPs.

3.2.5 Environment and Natural Resources

The Environment and Natural Resources (ENR) sub-sector is responsible for ensuring rational and sustainable utilization, development and effective management of environment and natural resources for socio-economic development of the country. The sub-sector is composed of Forestry, Wetland Resources Management, Meteorology, Environmental Management, and Climate Change. The key players in the sub-sector comprise: Government, private sector, Civil Society Organizations (CSOs), academia and Development Partners. The sub-sector, through the Ministry of Water and Environment and its affiliated agencies namely National Environment Management Authority (NEMA); National Forestry Authority (NFA); Uganda National Meteorological Authority (UNMA) and Local Government is responsible for policy, regulation, supervision and development of ENR. The private sector complements Government in the development and utilisation of the resources for investment; CSOs offer the much desired interventions in support of government actions for service delivery especially through lobby and advocacy for conservation and protection of ENR; academia undertakes research and knowledge transfer; whereas the Development Partners provide financial and technical assistance.

Over the period of this Plan, the focus will be geared towards the protecting and restoring of degraded fragile ecosystems (bare hills, river banks, lake shores, rangelands); increasing national forest cover and economic productivity of forests; increasing the national wetland coverage, and protecting and maintaining their integrity as well as integrating environmental sustainability and climate change policy interventions in all sector development plans.

In this regard, the sector targets are to increase wetland ecosystem coverage from 10.9 percent in FY2014/15 to 12 percent in FY2019/20; increase the percentage of forest cover from 11 percent in FY2014/15 to 18 percent in FY2019/2020; increase automation of climate monitoring network from 10 percent FY2014/15 to 40 percent in FY2019/2020; ensure 20 percent increment in national coordination and monitoring of the implementation of international standards and commitments, as well as of the National Climate Change Policy (NCCP) and its implementation strategy in FY2019/2020; enhance environmental compliance from 66 percent in FY2014/15 to 90 percent in FY2019/2020. This will be achieved through a number of strategies and interventions described in the following paragraphs, and grouped per sub-sector:

3.2.6 Sustainable Environment Management

3.2.6.1 Objectives, Strategies and Priority Interventions

Objective 1: By 2020, ensure sustainable management of environment for livelihood security, wealth creation and sustained economic growth.

Strategy 1: Protect and restore the integrity and functionality of degraded fragile ecosystems (river banks, lake shores, and rangelands, hilly and mountainous areas) in line with obligations under international agreements to enhance their capacity to provide benefits essential for Sustainable Development.

Priority Interventions

i) Develop and implement a program on integrated ecosystems assessments.
ii) Develop and implement ecosystem management and restoration plans.
iii) Develop and integrate a program for rangelands, hilly and mountainous areas management into the development mainstream.
iv) Develop and implement mechanisms for promotion of Payment for Ecosystem Services (PES).

Strategy 2: Increase public education and awareness on the contribution of a clean and healthy environment to national development.

Priority Interventions

i) Develop and implement awareness programs on opportunities of ENR for employment and wealth creation.
ii) Develop and implement a program on green economy awareness and support implementation of green economy initiatives.
iii) Promote education for sustainable development.
iv) Support awareness about sustainable consumption and production practices.
v) Develop and support implementation of a program for stakeholders' debates and dialogues on environmental and sustainable development issues.

Strategy 3: Enhance compliance with environmental legislation and standards.

Priority Interventions

i) Design and implement compliance assurance programs including regulatory best practices, environment assessment, compliance assistance, self-monitoring programs and the use of economic instruments.
ii) Enhance access to environmental justice including establishment of environmental courts/tribunals.
iii) Support the litigation capacity of ENR institutions.
iv) Support capacity enhancement of judicial officers and law enforcement agencies.
v) Develop and implement environmental monitoring and inspection programs.

Strategy 4: Integrate environmental sustainability concerns into the planning and development processes.

Priority Interventions

i) Support mainstreaming and integration of environmental concerns into policies, plans, programs and budgets (capacity building, tools/instruments for environment mainstreaming).
ii) Support implementation of national initiatives on transition to a green economy (low carbon emissions and pollution levels; resource use efficiency; conservation agriculture, inclusive and equitable growth and enhanced natural capital base).
iii) Support and promote the use of clean and efficient energy technologies including sustainable biomass and improved cook stoves.
iv) Promote environmental valuation and resource accounting to demonstrate the contribution of ENR and the costs of its degradation to GDP and development goals.
v) Integrate ecosystem and biodiversity values into national and local planning developmental processes, poverty reduction strategies and the national accounts.

Strategy 5: Strengthen the policy, legal and institutional frameworks to support efficient and effective environment management.

Priority Interventions

i) Implement the revised National Environment Management Policy (NEMP, 2014), the National Environment Act (1995 as amended) and other relevant legislation.
ii) Develop and implement a program for Institutional support to ENR institutions, LGs and MDAs including key skills and knowledge acquisition, equipping and retooling.
iii) Develop and implement strategy on resource mobilisation for environmental management.
iv) Develop and implement mechanisms for strengthening institutional coordination and collaborations.

Strategy 6: Strengthen and develop national, regional and international partnerships and networks to enhance environmental management and sustainable development.

Priority Interventions

i) Support broad-based multi-stakeholder partnerships with CSOs, the private sector, Local Governments and MDAs, to mobilise knowledge, expertise, technologies and financial resources to achieve sustainable development.
ii) Support domestication and enhance synergies and linkages in the implementation of MEAs, regional and sub-regional cooperation frameworks.
iii) Coordinate and guide national participation in sub-regional, regional and international frameworks for environment management and sustainable development for optimum benefits to the country

Objective 2: By 2020, investment in the sustainable use of ENR for employment and wealth creation is promoted while helping to maintain ecosystems and strengthen capacity for adaptation to climate change.

Strategy 1: Promote value addition to ENR goods and services

Priority Interventions

i) Support and operationalize frameworks for Public Private Partnerships (PPP) in the management and development of ENR goods and services.
ii) Support and operationalize strategies for promotion of innovative ENR enterprises such as wildlife farming (butterfly farming, ostrich farming, crocodile farming etc.) and eco-based cultural tourism.
iii) Support development of a database detailing the potential and opportunities for investment under ENR with linkages to Uganda Investment Authority (UIA).
iv) Enhance creation of markets for ENR goods and services such as carbon markets and other ecosystem services.

Strategy 2: Promote research for the improvement of the productivity of the environment and natural resource base.

Priority Interventions

i) Promote research on valuation of the ecological and socio-cultural values of important ecosystems and biodiversity.
ii) Promote research on early warning systems and disaster reduction systems and related capacities with the aim of building resilience and protection from vulnerable situations such as shocks, disasters including extreme climate-related events.
iii) Support research in new and emerging area such as oil and gas abstraction, biotechnology and bio-safety.
iv) Promote research on control of alien and invasive species in land and water ecosystems.
v) Promote research on air pollution.

Objective 3. By 2020, emerging environmental and development issues and challenges are identified and addressed and opportunities are harnessed.

Strategy 1. Manage electronic and other hazardous waste.

Priority Interventions

i) Promote establishment of sanitary waste management facilities under the PPP arrangement.
ii) Promote establishment of regional centres for e-waste management (collection centres, recycling plants, re-use facilities and incinerators).
iii) Promote science and technology innovation capacities in clean and environmentally sound technologies for waste management.

Strategy 2. Promote sustainable development of oil and gas.

Priority Interventions

i) Operationalise the Oil and Gas Environmental Monitoring Plan.
ii) Develop the capacity in sustainable oil and gas abstraction including staff, skills and knowledge, tools and equipment
iii) Coordinate the implementation of the oil spills contingency plan.
iv) Implement the recommendations of the Strategic Environmental Assessment for oil and gas development (including preparation of an integrated action plan and developing an environmental and social safeguard framework).
v) Strengthen institutional arrangements for management of environmental aspects of oil and gas production.

Strategy 3: Respond effectively to climate change induced disasters.

Priority Interventions

i) Support development and implementation of catchment-based management and restoration plans.
ii) Develop and implement a capacity building program for disaster prevention and response at national, local and community levels.
iii) Support the mapping of climate disaster prone areas to guide adaptation and mitigation efforts.
iv) Support scaling up of Ecosystem Based Adaptation (EBA) to climate change.
v) Develop and implement mechanisms for harnessing opportunities for carbon financing.

Strategy 4: Implement national biodiversity and biosafety targets.

Priority Interventions

i) Develop mechanisms for implementation of the National Biodiversity Strategic Action Plan.
ii) Build capacity for implementation of national biodiversity targets.
iii) Develop and implement mechanisms for harnessing benefits of biosafety and biotechnology.

Objective 4: By 2020, sustainable consumption and production patterns are promoted.

Strategy 1: Improve resource efficiency of economic activities and recoup economic growth from environmental degradation.

Priority Interventions

i) Promote a culture of sustainable lifestyles through public education, awareness raising and dissemination of sustainability information on products and services, policies and incentives.
ii) Reduce per capita food waste at retail and consumer levels.
iii) Create economic incentives and scientific and technological capacities that enable and promote sustainable consumption and production.

Strategy 2: Promote sound management of chemicals throughout their life cycle

Priority Interventions

i) Support the establishment of regional poison centres/emergence response centres under the existing health institutional frameworks.
ii) Support the development of comprehensive policy, legal and institutional frameworks for management of chemicals.
iii) Develop and implement a capacity building program for sound management of consumer and industrial chemicals.

3.2.7 Forestry Management

Uganda has the forest resource base and a favourable climate for the transformation of the forestry sector for the enhancement of rural employment and the diversification of rural income sources. However, Uganda has many degraded forest reserves. Deforestation is a major threat to agricultural activities as it impacts negatively on soil fertility and the available water for crop production. To address this challenge, Uganda needs to implement watershed management and massive tree planting activities to ensure restoring and maintaining a sustainable forest cover. The country's National Forestry and Tree Planting Act of 2003 supports tree planting by communities and private sector and encourages Collaborative Forest Management (CFM) as well as intensification of watershed management and soil conservation. There is a noticeable growing interest in tree planting due to increasing demand for timber products. What is needed is to create the enabling environment for the implementation of this policy and other important policies for forestry development. The NDPII/SDP is committed to increase the percentage of forest cover over the period FY 2015/16 to FY2019/2020.

3.2.7.1 Objectives, Strategies and Priority Interventions

Objective 1: By 2020, afforestation and reforestation has increased forest cover of land area to 18% for economic, social and environmental benefits for sustainable development.

Strategy 1: Promote development of commercial forest plantations and industry.

Priority Interventions

i) Expand and sustainably manage timber and pole plantations.
ii) Establish and sustainably manage energy plantations.
iii) Develop community-based out-grower plantations around large plantations.
iv) Support commercial tree nurseries to produce high quality planting materials.

Strategy 2: Promote community and institutional tree planting country-wide.

Priority Interventions

i) Establish and manage woodlots, hedgerows, windbreaks, shelter belts and fruit orchards.
ii) Support on-farm growing of high conservation value species.
iii) Mainstream forestry in urban development planning.
iv) Manage peri-urban forest reserves and increase urban tree growing and protection.
v) Develop and maintain tree seed stands and orchards.

Objective 2: By 2020, implementation of sustainable management of forests is promoted, so as to increase economic productivity of forests and increase employment opportunities and household incomes.

Strategy 1: Promote small, medium and large capacity harvesting and processing plants as well as forest industries.

Priority Interventions

i) Improve efficiency in harvesting by promoting good harvesting practices and sawmills with high recovery rates to get higher revenue returns from forests and trees.
ii) Build capacity for value addition for processing wood and non-wood forest products.
iii) Promote establishment and development of commercial forest plantations and community nurseries.

Strategy 2: Support communities to enhance their livelihoods and incomes from forests and trees.

Priority Interventions

i) Support households to grow trees for income and provision of forest products for domestic consumption.
ii) Support at least one key district's women and youth organization per district to grow trees and engage in biomass energy processing and use.
iii) Promote Forest-Based Income Generating Enterprises (FBIGEs) for non-consumptive use of forests e.g. ecotourism through establishment and management of botanical gardens, butterfly farms and value addition.

Strategy 3: Promote forestry research and development for sustainable management of forests.

Priority Interventions

i) Develop and implement forestry development and research strategic plans through relevant forestry institutions.
ii) Undertake trials for various indigenous tree species to inform plantation development.
iii) Promote on-farm research and research by forestry institutions.
iv) Develop and implement tree improvement programs.
v) Disseminate the technologies that have been developed.

Strategy 4: Develop markets for forest products and services.

Priority Interventions

i) Develop and implement national standards, criteria and indicators in accordance to Forest Stewardship Council (FSC) principles, and principles of sustainable forest management for forest certification.
ii) Develop and publicize domestic, regional and international markets for forest products and services.
iii) Organize and encourage private forest owners, tree farmers and businessmen to tailor the products and services to market requirements.

Objective 3: By 2020, the forestry institutions have the capacity to perform their mandates paying attention to the need to increase the capacities of local communities to pursue sustainable livelihoods opportunities in forestry.

Strategy 1: Strengthen sector institutions (FSSD, NFA and DFS) for sustainable forest management and development.

Priority Interventions

i) Improve human resource capacity in terms of staffing levels, skills and equipment for better performance of their mandates.
ii) Improve coordination, networking and partnerships for all forestry sector stakeholders.
iii) Improve sector monitoring and evaluation.
iv) Domesticate coordination and implementation of regional and international forestry related multi-lateral environment agreements (MEAs).
v) Improve participation of private sector and communities in forest planning, management and development.
vi) In liaison with Ministry of Education and Sports, review and implement training curricula for technical and professional forestry training at the colleges and universities, to deliver appropriate training packages to students.
vii) Implement tailor-made in-service training for the staff of forestry management institutions, CSOs and the private sector.
viii) Prepare and implement appropriate extension packages and materials.
ix) Develop and support the implementation of appropriate standards for sustainable forestry management

Objective 4: By 2020, degraded forests are restored and forest ecosystems have become natural habitats that are sustainably managed with enhanced capacity to provide benefits for sustainable development.

Strategy 1: Restore degraded natural forests on protected and private land so as to halt the loss of biodiversity.

Priority Interventions

i) Restore and rehabilitate degraded and deforested natural forests in forest reserves, wildlife conservation areas and private forests and communal land.
ii) Biodiversity conservation in priority forest reserves and wildlife conservation areas.
iii) Management of important biodiversity corridors on private and communal land.
iv) Restoration of physical integrity of forests in protected areas through eviction of encroachers, boundary opening, surveying and demarcation.

Strategy 2: Restoration and improvement of ecosystem services derived from forests.

Priority Interventions

i) Carry out specific studies for the various ecosystem benefits of forests.
ii) Prepare and implement the National REDD Plus strategy and action plan including the National REDD Plus reference scenario, monitoring system and safeguards.
iii) Develop and implement REDD Plus demonstration projects at regional and district level.
iv) Scale up afforestation projects relevant to Clean Development Mechanism arrangements.
v) Develop and implement incentive schemes to promote restoration and conservation initiatives for ecosystems.

Strategy 3: Improve ICT in forest management and advisory services to local communities.

Priority Interventions

i) Develop and manage user-friendly information management systems to collect, process and disseminate forestry information.
ii) Develop and manage a national Forestry Communication Strategy.
iii) Build the capacity of service providers for effective service delivery to communities.
iv) Conduct national and regional forest fora for information-sharing and review of forestry sector performance.

Strategy 4: Improve Forest Law Enforcement and Governance (FLEG).

Priority Interventions

i) Strengthen development, dissemination and implementation of relevant forestry policies, regulations, standards and guidelines.
ii) Implementation of participatory forest management plans.
iii) Develop capacities of local governments and communities to contribute to FLEG.
iv) Strengthen collaborative forest management with forest adjacent communities.
v) Hold annual forestry fora.

Objective 5: By 2020, climate change mitigation and adaptation actions have been enhanced in the forestry sector.

Strategy 1: Complete the REDD+ Phase 1 Readiness Activities

Priority Interventions

i) Development a National REDD+ Strategy and costed action plan
ii) Develop and submit a Forest Emissions Reference Level and a Forest Reference Level (FERL/FRL)

iii) Develop a robust and functional National Forest Monitoring System (NFMS) for the monitoring and reporting of the REDD+ activities included in the REDD+ Strategy
iv) Develop a system for providing information on relevant social and environmental safeguards.
v) Undertake REDD+ Demonstration Pilots.

3.2.8 Wetland Resources Management

A wetlands management programme shall be implemented through a number of strategies that include but are not limited to protecting and maintaining the integrity of wetland ecosystems, restoring degraded sections, developing appropriate management plans and District Wetland Action Plans, development, operationalizing and maintaining a wetland information system, improving the policy, legal and regulatory framework, establishing and maintaining functional institutions and developing and maintaining capacity for wetland management at Central and Local Government levels.

3.2.8.1 Objectives, Strategies and Priority interventions

Objective 1: By 2020, the wetland ecosystem coverage has been secured and maintained from the current 11% to 13%, and their integrity for enhancing the ecological and hydrological functions and services are maintained in order to provide benefits that are essential for sustainable development.

Strategy 1: Protect, restore and maintain the integrity of wetland ecosystems.

Priority Interventions

i) Identify and list the major and critical wetlands for demarcation and gazettement countrywide.
ii) Demarcate the boundaries of major critical wetland ecosystems countrywide and gazette the wetlands for legal recognition countrywide.
iii) Remove encroachers from wetlands and cancel land titles where applicable.
iv) Remove alien species and re-introduce appropriate wetland plant species in degraded sections.
v) Re-hydrate the degraded sections of wetlands.

Objective 2: By 2020, an equitable and sustainable use of wetland resources is being promoted for livelihood enhancement and economic growth in line with obligations under international agreements.

Strategy 1: Develop and implement appropriate management plans and action plans.

Priority Interventions

i) **Objective 3**: By 2020, the knowledge base of ecological process and socio-economic values of wetlands among stakeholders has been enhanced, in order to solicit stakeholders' participation in wetland management Train policy makers, implementers and wetland resource users in wetland management plan development.
ii) Develop, support and monitor the implementation of management plans and action plans.
iii) Establish market centers for wetlands products and services countrywide.
iv) Establish wetland based domestic carbon credit trade mechanism/schemes in LGs.
v) Zone wetland areas and mobilize and support LGs to integrate District Wetland Action Plans (DWAP) into District Development Plans (DDP) for effective management.

Strategy 1: Develop, operationalize and maintain a wetland information system.

Priority Interventions

i) Up-grade and maintain the NWIS using Arc-Map 10.1 software for nationwide wetland data collection and analysis.
ii) Link NWIS to all LGs, municipality and other relevant stakeholders countrywide.

Strategy 2: Develop and disseminate wetland information to stakeholders.

Priority Interventions:

i) Conduct and update a wetland inventory and assessment countrywide.
ii) Prepare wetland information systems and disseminate the information to stakeholders.
iii) Equip (RAMSAR) Education and Training Centers with relevant IEC materials.
iv) Strengthen and maintain collaborations with research organizations.
v) Undertake wetland economic valuation and applied research studies in selected wetland country wide.

Objective 4: By 2020, efficiency and effectiveness in wetland management service delivery has improved.

Strategy 1: Improve the policy, legal and regulatory framework.

Priority Interventions

i) Initiate revision and update of the wetland policy to incorporate new changes in the sector, protocols and agreements signed and ratified by Government.
ii) Draft a wetlands specific law and support districts to formulate ordinances to improve enforcement and compliance.
iii) Establish a robust monitoring and evaluation system to enforce compliance to established codes and standards.
iv) Monitor and inspect proposed and existing developments near or in wetland areas for compliance with the Wetlands Policy and regulations countrywide.
v) Evaluate EIA reports and Project Briefs for proposed developments in or near wetland systems for compliance.

Strategy 2: Establish and maintain functional institutions for wetland management.

Priority Interventions:

i) Establish coordination, monitoring and supervision of the Regional Technical Support Units
ii) Establish inter-district wetland coordination, monitoring and supervision committees countrywide;
iii) Strengthen and operationalize Wetlands inter-sectoral /Ministerial Advisory Group (WAG)
iv) Construct, operate and maintain RAMSAR site education centers in the 12 RAMSAR sites countrywide

Strategy 3: Develop capacity for wetland management at Central and Local Government levels.

Priority Interventions:

i) Conduct training needs assessment for wetland managers;
ii) Train and re-tool technical staff from Central and LGs.
iii) Equip technical staff with operational logistics.

3.2.9 Weather and Climate (Meteorology)

Meteorology is a science concerned with the processes and phenomena of the atmosphere, especially as a means of monitoring weather and climate change through a well-developed and efficient weather and climate monitoring system. The sector, through the Uganda national Meteorological Authority (UNMA), will focus on provision of necessary information in support of Government policies and to the different sectors of the economy. The target is to increase automation of the climate monitoring network from 10 percent in 2014/15 to 40 percent in FY2019/2020 and ensure a 20 percent increment in national coordination and monitoring of the implementation of international standards and commitments. The specific strategies and interventions will be as follows:

3.2.9.1 Objectives, Strategies and Interventions

Objective: By 2020, modern meteorological services are provided to effectively and efficiently support the various sectors of the economy.

Strategy 1: Overhaul, automate and inter-link the meteorological network system.

Priority Interventions

i) Increase the type and number of automated weather and climate observation stations to meet national and international requirements. The whole system will progressively be automated and inter-linked.
ii) Provide accurate real time, short term and long term forecasts to facilitate the effective performance of the different socio-economic sectors, including air transport, defence and security, agriculture, health, industry, construction, and water resources management.

Strategy 2: Strengthen observational and analytical capabilities of students and technical staff.

Priority Interventions:

i) Recruit, train and retain technical personnel to enable provision of accurate meteorological services to various users.
ii) To introduce courses in Meteorology at Universities within Uganda.

Strategy 3: Create awareness and promote use of meteorological services.

Priority Interventions

i) Develop and implement awareness programmes on the importance and use of meteorological services.
ii) Design and disseminate sector specific meteorological application products.

Strategy 4: Strengthen the policy, legal and institutional framework for meteorological services.

Priority Intervention

i) Finalize guidelines and regulations for Uganda National Meteorological Authority Act
ii) Support and strengthen the Uganda National Meteorological Authority as established by law.

3.2.10 Climate Change

Climate change is a primary concern for Uganda and international community. The climate of Uganda is a valuable natural resource and a major determinant of other natural resources like soils, water, forests and wildlife, as well as the human activities dependent on them. The impacts of climate change (droughts, floods, storms, heat waves and landslides) will most likely reduce the benefits derived from the natural resource base and this will have serious consequences on agricultural production, food security, forests, water supply, infrastructure, health systems, incomes, livelihoods and overall development. Uganda therefore needs to respond to the challenges posed by climate change through both adaptation and mitigation to build resilience that is crucial to ensuring sustainable development. Over this Plan period therefore, the focus of the sub-sector will be geared towards integrating environmental sustainability and climate change policy interventions in all sector development plans.

3.2.10.1 Objectives Strategies and Priority Interventions (Climate Change)

Objective: By 2020, national coordination and monitoring of the implementation of international standards and commitments (UNFCCC, Kyoto protocol, etc.), as well as of the National Climate Change Policy and its implementation strategy has been enhanced

Strategy 1: Develop institutional capacities for climate change mitigation, adaptation, impact reduction and early warning.

Priority interventions:

i. Strengthen the institution responsible for national coordination of climate change programmes and activities, to facilitate cross-sectoral/multi-sectoral coordination and monitoring.
ii. Establish a conducive/appropriate legal framework for climate change policy implementation
iii. Develop capacity within MDAs and local governments for implementation, monitoring and reporting of climate change mitigation and adaptation activities, to ensure result-based management in the implementation of the NCCP.
iv. Improve national capacity through exchange programmes, university partnerships and professional development.

Strategy 2: Establish a conducive (enabling) environment and equitable participation in the implementation and monitoring of the National Climate Change Policy actions directives.

Priority interventions:

i. Develop and implement an effective climate change public awareness programme for/in government institutions, local governments, communities and civil societies (through an online climate portal, creative radio programming, short training courses, demonstrations of best practice in communities and community exchange visits).
ii. Map, establish and support Climate Change Focal Points in key institutions at national and local government levels.
iii. Coordinate the development of climate change resilient and climate change mitigation programmes and projects in order to access the international climate change financing sources.
iv. Implement the national Climate Change Law.
v. Establish, maintain and manage a national Green-House Gas (GHG) inventory system
vi. Develop, manage and operationalize a national Monitoring Report and Verification (MRV) system
vii. Stakeholder collaboration in the implementation of National Determined Contributions (NDC) actions
viii. Stakeholder collaboration in the implementation of the Green Growth Development Strategy (GGDS) actions.
ix. Stakeholder collaboration in the implementation of national adaptation programs (NAPAs) of actions and plans
x. Conduct national climate change vulnerability analyses.

Strategy 3: Coordinate and monitor implementation of climate change (CC) programmes, projects and activities in Uganda.

Priority interventions:

i) Strengthen Government of Uganda delegation/representation in CC related meetings and events, at international (COP, etc.), and national levels.
ii) Mainstream and harmonize climate change mitigation and adaptation aspects into relevant sector policies, strategies, and programs and budgets.
iii) Develop and implement a monitoring framework for the National Climate Change Policy.
iv) Map current climate change research activities, analyse the need for development of climate change research, and conduct a baseline for technology transfer.
v) Develop a dynamic climate change Management Information System (MIS) to coordinate and monitor climate change mitigation and adaptation by tracking progress of climate change actor's activities and resources in implementation of the NCCP.
vi) Develop and maintain a robust and up-to-date climate change Knowledge Management System (KMS).

3.2.11 Sector and Institutional Capacity Development (SICD)

Capacity Development is at the heart of sector performance and attainment of the goals set out in the National Development Plan (2016-2020) framework. It is also central in realisation of the Sustainable Development Goals (2015-3030), the NRM Manifesto as well as H.E. the President's directives and guidelines for the attainment of the country's middle income status. It is supported by the existing policies and legal framework.

According to the Water and Environment Sector Capacity Development Strategy (WESCD) (2013/18), there are a number of performance gaps identified in the sector which must be addressed at the outcome level, targeting all stakeholders involved in the water and environment service delivery chain. The WESCD provides for a holistic approach to capacity development, at the individual level, organizational level and also taking into account the enabling environment. In view of the aforementioned, during the period of FY2015/16-2019/20, the sector capacity development will focus on the following objectives, strategies, priorities and interventions:

3.2.11.1 Objectives, Strategies and Priority Interventions

Objective 1: By 2020, The Water and Environment Sector has the capacity to increasingly meet its targets and undertake its mandate benefitting from better understanding of its capacity demands; more effective means of delivering capacity in response to the needs and, increasing ability to positively influence the enabling environment.

Objective 2: By 2020, the means of implementation of capacity building is strengthened through establishment and strengthening of institutional structures, capacities, coordination & efficient and governance of resources in the sector.

Strategy 1: Improve education & continuing professional development through partnership with public and private providers

Priority Interventions

i) Promote networking and collaboration
ii) Develop learning materials for water well borehole siting, drilling supervision and test pumping and operation and maintenance of borehole water systems
iii) Establish a routine dialogue with relevant education and CPD providers on curriculum, development of materials and internships
iv) Focus on vocational training
v) Partner with academic institutions in research areas to improve delivery of sector services
vi) Establish a Water Resource Institute for in-country human resource capacity development for water resources management.

Strategy 2: Provide practical on-the-job training

Priority Interventions

i) Develop systems and tools for coaching and mentoring of younger officers
ii) Conduct induction courses for newly recruited officers
iii) Organise internship training for undergraduates and one year graduate training programme for fresh graduates
iv) Career planning at all levels to define and reach target skill levels
v) Establish a deeper partnership with private sector service providers and specialist providers(PPDA)
vi) Define target skills for main staff categories

vii) Reinforce UPMIS training and use as tool for investment planning, Asset Management and Regulation
viii) Roll out Water Quality Management training to Umbrellas, Operators and WSSBs
ix) Conduct practical training in borehole water well development and drilling supervision, management of solar water pumping systems.

Strategy 3: Developed institutions (systems, procedures, staffing etc.)

Priority Interventions

i) Establish and operationalise a robust Sector Capacity Development Strategy;
ii) Develop costed periodic CD plans
iii) Establish and continuously monitor performance gaps at sectoral level(focusing on the 3 levels
iv) Strengthen the implementation structures at the LG and community levels in terms of structures, numbers (staffing) and qualifications.
v) Develop national guidelines and standards on all aspects of RWHT (e.g. of trench sizes, spacing, stabilizations) and small scale irrigation
vi) Implementation of Asset Management guidelines and CD Plan towards 1st Asset Management Plan by 2019
vii) Establish legal framework for implementation of CC activities.
viii) Strengthen the organizational/institutional capacities of the CCD in terms of staffing, numbers and qualifications (Operationalisation of the new structure)
ix) Develop and review legal and institutional framework for Water Resources Management.
x) Develop and operationalize a national policy and strategy for management of International Waters.

Strategy 4: Improve Managerial Practice

Priority Interventions

i) Develop systems and tools for systematic career planning at sectoral level
ii) Maintain up to date sector HR inventory (skills, demographics, qualifications)
iii) Identify and implement short courses to improve DWD leadership, HRD, planning & administrative skills
iv) Project Development/Proposal writing skills
v) Procurement and contract management;
vi) Leadership and performance management training/Results Oriented Management(ROM)
vii) Work processes and quality assurance
viii) Networking, partnerships and public relations (Advocacy and lobbying)
ix) Team Building and communication skills
x) Policy Development and implementation
xi) Professional development for technical and managerial staff

Strategy 5: Build awareness for policy makers, service providers, public etc.

Priority Interventions

i) Develop key messages and advocacy strategy (including Community mobilization/ consumer user level)
ii) Engage with political leadership at parliament and council level (through key events in the political cycle)
iii) Update and refine sector capacity development strategy
iv) Conduct regular media briefs

v) Increased awareness at community level to manage and sustain Water and Environment facilities through participatory approaches

Objective 3: By 2020, the means of implementation of capacity building have been improved through establishment of sector institutional structures and capacities as well as coordination and governance for efficient and effective use of resources in the sector.

Strategy 1: Improve the policy, legal and regulatory framework with focus on equitable sharing of the benefits arising from the sector.

Priority Interventions:

i) Revise and update the existing sector policies to incorporate changes in the sector in conformity with protocols and agreements signed and ratified by Government.
ii) Revise and update the relevant regulations to be in line with the revised policies and acts.
iii) Strengthen the structures and capacity of staff in the Ministry and institutions in the sector.
iv) Implement the Water and Sanitation as well as the Environment sub-sector Good Governance Action Plans.
v) Establish and implement a robust monitoring and evaluation system to enforce compliance to established codes and standards.

Strategy 2: Strengthen the institutional structures and systems and coordination so as to allow for the participation of local communities in the management of water, sanitation and environment resources.

Priority Intervention Areas:

i) Strengthen the institutional roles of policy and planning, standards setting and implementation and regulation.
ii) Streamline the institutional roles and responsibilities for hygiene education, sanitation management, and public health inspection.
iii) Provide specific technical training for technical personnel in water supply, sanitation and environmental management at all levels.
iv) Recruit and retain staff in the approved structures of institutions in the sector at all levels.

Strategy 3: Enhance the involvement of private sector players in water and environment infrastructure financing, development and management.

Priority Interventions:

i) Formulate and implement a Public Private Partnership (PPP) framework to guide the involvement of the private sector in water sector activities.
ii) Facilitate the diversification of financing options for water infrastructure development through the use of infrastructure and municipal bonds.
iii) Provide education and training opportunities for the local private sector players in technical and entrepreneurship areas to develop capabilities. In addition, certification of service providers will be undertaken.
iv) Strengthen the contractors' association to regulate the performance of contractors and have representation in sector working groups.

SECTION FOUR – INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTING THE SECTOR DEVELOPMENT PLAN

This section focuses on coordinating the Sector Development Plan implementation, including the inter- and intra-sectoral implementation process of the Sector Development Plan.

4.1 Guiding Principles

The sector is committed to the provision of safe water and sanitation in both rural and urban areas from the current 65% and 73% respectively, to 79% and 100% water coverage for all Ugandans by the year 2019/2020. It is also committed in increasing national forest cover to 18 per cent; and wetlands coverage to coverage of wetlands from 10.9 per cent to 12 per cent. The sector is equally committed to address the rampant degradation of the environment and pursue attempts to adapt to climate change effects for socio-economic transformation and sustainability. In view of that, the sector has come up with guiding principles for effective service delivery. These include the following;

i. Resource mobilization to enable increased investments in water and sanitation infrastructure and protection of environment.
ii. Holistic and integrated planning approach for tangible outputs and sustainability.
iii. Public, Private Partnerships (PPP) engagement for operation and maintenance of water and sanitation infrastructure.
iv. Enforcement of the laws and regulations to reverse environmental degradation and pollution of water resources.
v. Promote resilience to climate change for sustainable development.
vi. Prioritization of water for production infrastructure to attract irrigation for increased agricultural production and socio-economic transformation.

4.2 Institutional Arrangements

The SDP is a 5-year costed plan and it is an integral part of the NDPII. The implementation of the SDP therefore is a collaborative responsibility between the Ministry of Water and Environment as a lead agency and other stakeholders including line ministries, local governments, private sector, communities, civil societies, and development partners.

4.2.1 National Level

i. During the implementation, the Top Policy Management (TPM) and the Water and Environment Sector Working Group (WESWG), guided by the Sector Wide Approach (SWAp), will ensure that implementation of strategic interventions in the SDP are in conformity with the NDPII. In addition, both the TPM and the WESWG will provide policy guidance, coordination, and harmonization and will thus strive to minimize duplication and contradictions within the sector; they will bring on board emerging issues, carry out planning/budgeting including resource mobilization, and provide necessary mechanisms for financial management and performance review where joint decision-making is taking place to the extent possible.
ii. The Ministry of Water and Environment is a lead institution in the Water and Environment Sector. It is responsible for overall coordination, policy formulation, setting standards, inspection, monitoring, technical back-up and initiating legislation. It also monitors and evaluates sector development programmes to keep track of their performance, efficiency and effectiveness in service delivery. In addition, it conducts Joint Annual Performance Reviews to share experiences and challenges amongst all stakeholders including local governments, Development Partners, Civil society Organizations, the private sector and other line ministries.
iii. The Ministry has three Directorates: Directorate of Water Resources Management (DWRM), Directorate of Water Development (DWD) and the Directorate of Environmental Affairs (DEA). These will be responsible for operationalisation of strategies and interventions under their respective mandates and responsibilities within the SDP.

- The Directorate of Water Development (DWD) is responsible for ensuring availability and access to safe and clean water, sanitation and hygiene in rural and urban areas. During SDP implementation, DWD will continue with providing overall technical oversight for the planning, implementation supervision and capacity development and other support services to local governments, private operators and other service providers for the delivery of rural and urban water and sanitation services across the country, including water for production. During SDP implementation, the directorate will be tasked to provide water and sanitation infrastructure in all towns and rural communities. It will also be charged with the responsibility of increasing the provision, functionality and effective utilization of existing water for production facilities for multi-purpose use (tourism, trade and industry, agriculture, aquaculture) in order to enhance production, productivity and value chain development and management, especially in food production. The lead agency for water use and management for agricultural development on-farm. The Directorate works in collaboration with the National Water and Sewerage Corporation plus the departments of Urban Water and Sewerage, Water for Production and Rural water and Sanitation.
- The Directorate of Environmental Affairs (DEA) is responsible for ensuring rational and sustainable utilization, development and effective management of environment and natural resources for socio-economic development of the country. During the SDP implementation period, the DEA will focus on protection, restoration and maintaining the integrity of the degraded fragile ecosystem especially along the river and lake banks, increase forest cover through massive tree planting, as well as increase the national wetland cover. During the process, DEA will play its role in harmonization of the implementation of the environmental policy, regulation, coordination, inspection, supervision and monitoring of the environment and natural resources as well as the restoration of degraded ecosystems and mitigating and adaption to climate change. In these tasks, the Directorate will be supported by the Departments of Environmental Support Services (DESS), Forestry Sector Support (FSSD), and Wetlands Management (WMD). In addition, the Directorate, in collaboration with the National Environmental Management Authority (NEMA), Uganda Meteorological Authority (UNMA), the National Forestry Authority (NFA), and private forest farmers, will ensure enforcement and compliance to environmental regulations, restore the forest cover and increase usage of climate information and resilience to climate change effects.
- The Directorate of Water Resources Management is responsible for developing and maintaining national water laws, policies and regulations; managing, monitoring and regulation of water resources (quantity & quality); Catchment based IWRM activities; coordinating Uganda's participation in joint management of trans-boundary waters resources and peaceful cooperation with Nile Basin riparian countries. The Directorate comprises Four Departments namely Department of Water Resources Monitoring and Assessments, Department of Water Resources Planning &Regulation, Department of Water Quality Management and Department Trans-boundary and International Water Resources.

- In addition, the Ministry is supported by stand-alone Departments in support to the technical departments that contribute to the production, productivity and value chain for socio-transformation; these include
  (a) The Finance and Administration Department responsible for financial management and administrative support to the entire ministry,
  (b) The Water and Environment Sector Liaison Department,
  (c) The Policy and Planning Department responsible for the strategic planning, budgeting, monitoring and evaluation, reporting and sector capacity building,
  (d) The Climate Change Department responsible for strengthening Uganda's implementation of the United Nations' Framework Convention on Climate Change (UNFCCC) including the implementation of the COP 21 climate change agreement. Other support units include Internal

Audit Unit, Accounts Unit, Human Resource Management Division, and Procurement and Disposal Unit.

4.2.2 Semi-Autonomous Institutions affiliated to the Sector

i. **The National Water and Sewerage Corporation (NWSC)** is a parastatal organization that operates and provides water and sewerage services to large urban centres across the country including Kampala. NWSC's activities are aimed at expanding service coverage, improving efficiency in service delivery and increasing productivity. Key among its objectives is to plough back generated surpluses for infrastructure improvements and new investments. Within the context of the overarching Government Policy, the Urban Water Sector reform agenda and the Government Manifesto, requiring the rapid expansion in urban water coverage, and the expansion of the sewerage services in all areas of NWSC operations, the Corporation is envisaged to expand its mandate to cover all major urban centres within Uganda in a bid to ensure accelerated service delivery in the urban centres.

ii. **The National Environment Management Authority (NEMA)** is responsible for the regulatory functions and activities that focus on compliance and enforcement of the existing legal and institutional frameworks on environmental management in Uganda. NEMA's mandate covers both green and brown issues of environmental management[7]. It oversees the implementation of all environment conservation programmes and activities of the relevant agencies both at the national and local Government level.

iii. **The National Forestry Authority (NFA)** is responsible for sustainable management of Central Forest Reserves, supply of tree seed and seedlings, and provision of technical support to stakeholders in the forestry sub-sector on contract. NFA is a semi-autonomous business entity that generates most of its own revenues and finances its activities, i.e. NFA's support is contingent upon payment for its services.

iv. **Uganda National Meteorological Authority (UNMA**) - Uganda National Meteorological Authority (UNMA), formerly the Department of Meteorology under Ministry of Water and Environment, became a government authority following the enactment of the UNMA Act. 2012). UNMA is responsible for monitoring weather and climate, maintain a climate database and provide regular advisory support on the state of the weather and climate to government and any other clients, of which the most critical are the Agriculture sector, Transport (Aviation, Marine and Road/Railway), Security, Water Resources Management, Uganda Bureau of Statistics, Academia & Research, Disaster Preparedness and Management, Public Weather Services etc..

Relevant Line Ministries with their respective roles in the sector are as described briefly below:

- The **Ministry of Agriculture, Animal Industry and Fisheries (MAAIF).** MAAIF spearheads agricultural development in the country. It has a dual role with MWE for Water for Production. This includes the on-farm use and management of water for production (irrigation, animal production and aquaculture). MAAIF is responsible for supporting, promoting and guiding the on-farm production of crops, livestock and fisheries so as to ensure improved quality and quantity of agricultural produce and products for domestic consumption, food security and export.

[7] The 'Brown' agenda addresses issues associated with environmental health, including unsanitary living conditions, hazardous pollutants in the air and water, and the accumulations of solid waste. The 'Green' agenda focuses on how production, consumption and waste generation contributes to ecosystem disruption, resource depletion and global climate change.

- The **Ministry of Health (MoH)** is responsible for hygiene and sanitation promotion for households through its Environmental Health Division (EHD).
- The **Ministry of Education and Sports (MoES)** is responsible for hygiene education and provision of sanitation facilities in primary schools. It also promotes hand washing after latrine use in the schools.
- The **Ministry of Gender, Labour and Social Development** is responsible for gender responsiveness and community development/mobilization. It assists the sector in gender responsive policy development, and supports districts to build staff capacity to implement sector programmes.
- The **Ministry of Lands, Housing and Urban Development** is responsible for land use management including physical planning, surveys and mapping, valuation, land registration, urban development.
- The **Ministry of Finance, Planning and Economic Development (MoFPED)** is responsible for mobilizing funds, allocate them to the sector and coordination of Development Partner inputs. MoFPED reviews sector plans as a basis for allocation and release of funds, and reports on compliance with sector and national objectives.

4.2.3 Private Sector and Civil Society Organizations (CSOs)

During the execution of the SDP, the sector will collaborate with non-state actors including the private sector firms that participate in consultancies and construction of water development infrastructure, as well as carry out operation and maintenance of facilities. Civil Society Organisations (CSO) will continue with their advocacy and contribution in complementing government efforts in water, sanitation and hygiene provision and promotion, community mobilization, environmental awareness and support activities including for instance forestry and wetlands conservation, while the Development Partners are essential in providing technical and financial support. A sound regulatory framework for this partnership continues to be developed for sustainable service delivery.

There are over 200 NGOs working in water supply and sanitation under the umbrella of the Uganda Water and Sanitation NGO Network (UWASNET), which aims at strengthening the contribution of NGOs/CBOs in achieving the Water and Sanitation Sector goals. It guides Local Governments and NGOs on how to jointly plan and implement community mobilization/software activities with respect to water supply and sanitation. It also provides guidance to districts on how to procure NGOs to undertake software activities.

Sustainable environment management is central in economic growth and development. In view of that, the sector will continue collaboration with CSOs especially in advocacy for sustainable forest sector development, mobilizing local communities and sensitization in supporting/managing massive tree planting, restoration and protection of wetlands, providing forestry advisory services, and advocating for the concerns of the underprivileged in national development processes. Most of the local NGOs/CBOs working on environment and natural resources sub-sector operate under an umbrella organization called Environmental Alert.

Furthermore, the execution of the SDP will be supported by the private operators who are critical in designing and construction of water supply and sanitation facilities under contract arrangement to Local and Central Government. The private hand pump mechanics and scheme attendants provide maintenance services to water users in rural and peri-urban areas while the private operators manage piped water services in small towns and rural growth centres. In addition, private forest owners including local communities with registered forests are legal forest management authorities. As such, they are expected to play an important role in terms of commercial tree plantation development as well as promoting wood-based industries and trade.

4.2.4 Community Level

The involvement of the communities in implementation of the NDPII and SDP in particular is crucial, because it promotes ownership and sustainability of the activities undertaken by the sector. During the implementation of the SDP, the sector will encourage communities in taking responsibility in demanding, planning, making a cash contribution to capital cost, operating and maintaining rural water supply and sanitation facilities at the grass root level. The existing Water User Committees (WUC) will be strengthened, and where they do not exist, they will be established at each water point in accordance with the existing Conditional Grant guidelines. With respect to the environment and natural resources, over the years community members have been encouraged to form user groups at local level, such as Forestry Resource User Groups and Environment Committees. These structures will be established with the intention of enabling oversight of the environment and natural resources at the lowest level.

4.2.5 Local Governments

Local Governments play a key role in the implementation of sector programmes under the decentralized arrangement leading to a reduction in the number of costly and stand-alone projects in the sector. Conditional Grants are disbursed directly to LGs for implementation of activities as approved in the annual work plans and budgets.

i. The District Water Offices are critical in the implementation of the SDP because construction and rehabilitation of water facilities is the responsibility of the DWO. The ministry's role is restricted to policy guidance, supervision and providing capacity where necessary. In view of that, the DWO are expected to manage water and sanitation development and oversee the operation and maintenance of existing water supplies at district level.

ii. The District Environment Office is staffed by the forest officer, the wetland officer and environment officer who are responsible for the environment and natural resources management at district and lower Local Government level. District Forest Services of Local Governments (LGs/DFS) are responsible for managing Local Forest Reserves (LFRs); they carry out support and quality control of forest extension for private and community forests, mobilize planting of trees, develop and enforce bye-laws, strengthen forestry aspects in production and environment committees and district development plans, and are in charge of approval of community forests among others. The District Natural Resource Office, with the approval of the National Climate Change Policy, is also responsible for cross-sectoral coordination of climate change actions at local government level.

iii. The District Water and Sanitation Coordination Committee's role is to oversee the implementation of water supply and sanitation programmes, strengthen collaboration and coordination with other sectors (health, education, social development and agriculture) and other players (private sector, NGO and CBOs and civil society).

4.2.6 De-concentrated level

In response to the increasing number of districts and the need to provide support to local government, the Ministry has set up regionally based de-concentrated institutions that have demonstrated effectiveness in service delivery. The 8 Technical Support Units (TSUs) and the 4 Water and Sanitation Development Facilities (WSDFs) have eased implementation and back up support to local government. This arrangement has been rolled out to cover Water Resources Management with the establishment of 4 Water Management Zones (WMZs). Such institutions will be critical in the implementation of the SDP. Their roles and responsibilities are outlined in brief as below:

iv. Water Sector Development Facility (WSDF) - There are four WSDF branch offices currently established: South-West, North; East and Central. Each office is mandated to carry out all the

contract management functions of the Urban Water and Sewerage Department, including procurement especially construction of piped water systems. WSDFs are in a position to plan the towns' water and sanitation needs, make best use of the implementation management support and ultimately ensure that the new facilities function well.

v. Technical Support Units (TSU)-There are currently 8 TSU located around the country. They provide back-up technical support to the district local governments following decentralization of rural water supply and sanitation. Over time, TSU's roles have also expanded to provide support to Rural Growth Centres and also in the fields of water resources management and water for production.

vi. The Water Management Zones (WMZs). These are offices established in the 4 WMZs of Victoria, Albert, Kyoga and Upper Nile) with a purpose to de-concentrate water resources management closer to where action is needed in order to mobilize local community efforts and other stakeholders to achieve catchment-based Integrated Water Resources Management. This will also ensure effective coordination with other water resources related activities being implemented at district level such as environment, forestry and water supply.

vii. Umbrella Organizations (UO) –The six regional Umbrellas are based in Kabale (South-West), Kyenjojo (Mid-West), Wakiso (Centre), Lira (North), Mbale (East) and Moroto (Karamoja), respectively. The regionally-based, UOs are associations of the Water Supply and Sanitation Boards (WSSBs)/ Water and Sanitation Committees. The UOs provide O&M back up as well as training, technical, legal, financial and organisational support including supervision of rehabilitation and extension works and water quality monitoring. They also support and supervise monitoring and reporting procedures. They provide capacity building of Private Operators (POs) as their members are crucially dependent on private operator performance.

viii. Regional Management Units have been set up to support wetland management at lower levels.

SECTION FIVE - THE SECTOR DEVELOPMENT PLAN FINANCING STRATEGY

This section outlines the options for sources of funds to invest in the Water and Environment Sector. Adequate financing to water and environment would seriously stimulate wealth creation and promote value addition of other key sectors such as energy, agriculture and tourism which are critical to economic development and overall socio-economic transformation in Uganda. Similarly, limitations in access to reliable water infrastructure will hamper economic development, wealth creation and achieving the vision of transformation for all.

5.1 Trend in Sector Allocation

The sector funding as a proportion of national budget has consistently remained around 3 per cent over the last years. The estimates of the government and development partners' funding are based on projections of the present level of government and donor funding in accordance with the trend over the last years. This is because the government operates a cash budget system, where the internally generated revenue constitutes 58% of the overall resource envelope for each fiscal year while about 42% is budget support from Development Partners.

According to MTEF allocation, the resource allocation to the sector during the FY 2015/16 is UGX. 547.31bn and for FY 2016/17 it increases to UGX706.8bn. It is however projected to reduce to UGX 595.3bn during the FY 2017/18. It should be observed that although nominally there seems to be an increase in sector funding, in real terms the funds are not sufficient due to amongst others the high cost technology options suitable to further increase water coverage. This is coupled with a high population increase as well as the rehabilitation costs for old schemes.

Table 1: Sector MTEF allocation in the last 3 years and projected allocation to 2017/18

FY	2013/14	2014/15	2015/16	2016/17	2017/18
Allocations	439.1	444.6	547.31	706.8	595.3

Source: Ministry of Finance Planning and Economic Development (MFPED)

5.2 Sector Investment Requirements for the period of 2015/16-2019/20

The total investment requirement for the five years is projected at **UGX 9,634.7 trillion** as detailed in Table 2. This translates into an average of **UGX 1,926.9 trillion** required per year in order to achieve the expected planned targets. The above analysis indicates reveals that there is a yearly funding gap of close to **UGX. 1.3 trillion** in overall sector investment requirement. The costing is based on the thematic area objectives, strategic interventions and priorities as per details provided in Annex 1 where the biggest resource requirement of about **UGX 7,647.1** trillion is skewed towards water and sanitation infrastructure development for rural and urban water supply schemes.

In recognition of the funding restraints of the national budget, the sector will prioritize its interventions and implement in a phased manner targeting first the least-served areas and thus aiming for improving equity. It is important that the ceilings under the Medium Term Expenditure Framework (MTEFs) are gradually increased in order to achieve the sector's planned interventions and consequently contribute to the national transformation as well as reaching the country's middle income status.

Table 2: Projected Sector Investment for the next 5 years.

Sub-sector	Projected Investment Requirements in Billion UGX					
	15/16	16/17	17/18	18/19	19/20	Total
Environment Management	90.3	103.8	125.5	128.0	144.5	592.1
Water & Sanitation Development Infrastructure	899.7	920.0	2,009.0	1,917.7	1,899.7	7,647.1
Water Resources management	17.8	22.1	54.0	106.5	134.2	334.6
Water for Production Infrastructure	157.7	157.7	210.3	262.9	262.9	1,051.5
Sector and Institutional Capacity Development (SICD)	1.61	1.74	1.87	2.00	2.14	9.35
Total	**1,167.11**	**1,205.34**	**2,400.67**	**2,417.1**	**2,443.44**	**9,634.65**

Source: Ministry of Water and Environment

5.2.1 Investment Requirements for Ongoing Projects

There are 42 development projects implemented by the sector countrywide covering environmental management as well as water and sanitation infrastructure. These projects are funded by both the GoU and donor support. The detailed allocation of funds to Sector Projects during FY 2015/16-FY 2016/17 is provided in Table 3.

Table 3: Ongoing Sector Development Projects

Code	Project Name	2015/2016			2016/2017			2017/18		
		GoU	Donor	Total	GoU	Donor	Total	GoU	Donor	Total
Rural Water Supply and Sanitation										
163	Support to Rural Water	27.937	19.16	47.097	14.877	1.017	15.894	14.677	1.02	15.694
1191	Water for returned IDPs	0.51	1.56	2.07	0.51	5.97	6.48	0	0	0
1347	Solar Powered Mini-piped	0.1	0	0.1	14	0	14	17	0	17
1349	Large Rural schemes in North	0.1	0	0.1	0.06	0	0.06	0	0	0
1359	Piped Water in Rural Areas	18.765	0	18.765	19.977	40.51	60.491	10.565	37.99	48.552
Sub-total		**47.412**	**20.72**	**68.132**	**49.424**	**47.5**	**96.925**	**42.242**	**39**	**81.246**
Urban Water Supply and Sanitation										
124	Energy for Rural Transformation	0.195	0	0.195	1.195	0	1.195	0	0	0
164	Support to Small towns	4.04	2.054	6.094	2.64	2.407	5.047	2.139	2.407	4.546
168	Urban Water reform	2.644	1.083	3.727	3.144	1.269	4.413	2.844	1.269	4.113
1074	WSDF-North	3.967	18.54	22.507	4.825	16.14	20.965	7.06	3.673	10.733
1075	WSDF-East	4.979	15.504	20.483	7.1	7.803	14.903	8.029	8.792	16.821
1130	WSDF-Central	6.916	19.513	26.429	10.031	40.78	50.809	13.654	42.86	56.518
1188	Protection of L.Vic San	30.129	22	52.129	18.427	30.4	48.825	15.107	7.122	22.229
1192	LVWATSAN II	4.353	1.371	5.724	3.653	5.97	9.623	2.553	5.97	8.523
1193	Kampala Water &Sanit	9.374	20.557	29.931	8.427	34.74	43.165	4.074	8.14	12.214
1231b	WMDP - NWSC Comp	0.63	35	35.63	5.697	34	39.697	2.03	6.272	8.302
1231c	WMDP - DWD Component	0.9	5.9	0	1.7	34	39.997			
1283	WSDF-South West	3.654	18.561	22.215	4.776	9.841	14.617	7.662	6.478	14.14
1399	Karamoja Small Towns	0	0	0	5	0	5	4.595	1	5.595
Sub-total		**71.781**	**160.08**	**225.06**	**76.615**	**217.3**	**298.26**	**72.747**	**93.99**	**166.73**
Water for Production										
169	Water for Production	36.303	10.2	46.503	21.17	10.93	32.1	36.896	10.93	47.826
1396	WfPRC - North	0	0	0	5	0	5	8.3	0	8.3
1397	WfPRC - East	0	0	0	5	0	5	11.34	0	11.34
1398	WfPRC – West	0	0	0	5	0	5	14.72	0	14.72
Sub-total		36.303	10.2	46.503	36.17	10.93	47.1	71.256	10.93	82.186
Water Resources Management										
137	LVEMP II	1.621	23.636	25.257	0.821	22.66	23.48	0.421	1.743	2.164
149	Op Nile Basin	0.582	0	0.582	0.582	0	0.582	0	0	0
165	Support to Water Res Mangt	2.986	6.192	9.178	3.268	3.322	6.59	2.168	1	3.168
1021	Mapping of Ground Water	0.139	0	0.139	0.138	0	0.138	0.139	0	0.139
1231a	WMDP - Water Resources	0.619	4.998	5.617	0.619	4.985	5.604	0.619	2.985	3.604
1302	Support to Hydropower	0.5	0	0.5	0.5	0	0.5	1	3.338	4.338

1348	Water Management Zones	0.37	0	0.37	1.37	4.338	5.708	2.57	0	2.57
1424	Multi-Lateral Lakes Edward & Albert Integrated Fisheries and Water Resources Mgt (LEAFII)	0	0	0	0	1	1	1	11.2	12.2
1487	Enhancing Resilience of Communities to Climate Change	0	0	0	0	0	0	0.5	2.526	3.026
Sub-total		**6.817**	**34.826**	**41.643**	**7.298**	**36.3**	**43.602**	**8.417**	**22.79**	**31.209**
Natural Resources Management										
146	National Wetlands	2.992	0	2.992	2.892	0	2.892	0	0	0
947	Farm Income (FIEFOC II)	18.457	0	18.457	17.342	0	17.342	35.299	50	85.299
1189	Saw Log Grant Prod Scheme	0	0.878	0.878	0.878	0	0.878	0	0	0
1301	National REDD+	1.4	0	1.4	2	1.605	3.605	4.892	0	4.892
1304	Support to NEMA phase II	1.15	0.0	1.15	1.05	0	1.05	1.05	0	1.05
161	Support to National Forestry Authority	2.09	0.00	2.09	1.925	0	1.925	1.925	0	1.925
1371	Uganda National Met. Authority	0	0	0	6.277	0	6.277	15.577	0.0	15.577
1102	Climate Change Project	0.799	1.083	1.882	0.799	1.907	2.706	1.199	1.907	3.106
Sub-total		**22.849**	**0.878**	**23.727**	**33.163**	**3.512**	**36.675**	**59.942**	**51.91**	**111.85**
Policy, Planning and Support Service										
151	Policy and Management Sup	10.673	4.61	15.283	9.472	6.341	15.813	5.622	12.31	17.93
1190	Support to Nyabyeya	0.843	0	0.843	0.843	0	0.843	1.9	0	1.9
1231d	WMDP - Coordination	2.44	1.754	4.194	2.196	2.692	4.888	0.78	2.676	3.456
Sub-Total		**290.255**	**419.42**	**696.08**	**12.511**	**9.033**	**21.544**	**8.302**	**14.98**	**23.286**

Source: Ministry of Water and Environment, Ministerial Policy Statement (FY2016/17)

5.2 Financing Strategy

5.2.1 Increase in Medium Term Expenditure Framework

The Water and Environment sector funding refers to local, national or transnational financing drawn from public, private or alternative sources of funding that seeks to support the attainment of sector priorities. To achieve the SDP/NDPII sector targets, the funding strategy involves considerable increases in the Medium Term Expenditure Framework allocation and donor support to the budget. Additional donor funding could be mobilized through bilateral and multilateral arrangements earmarked to specific project aid as standalone support or in the form of the Joint Partnership Fund earmarked for specific development projects.

Other possible sources of funding could be private sector investment especially in water related infrastructure, tree planting and waste management, participation of the Nongovernment Organizations (NGOs) and increased collection of Non-Tax Revenues (NTR).In the Climate Change sub-sector, initiatives will be taken to mobilize funding from Global Environment Facility, Green Climate Fund (GCF) and Adaptation Funds under UNFCCC, to finance adaptation and mitigation projects.

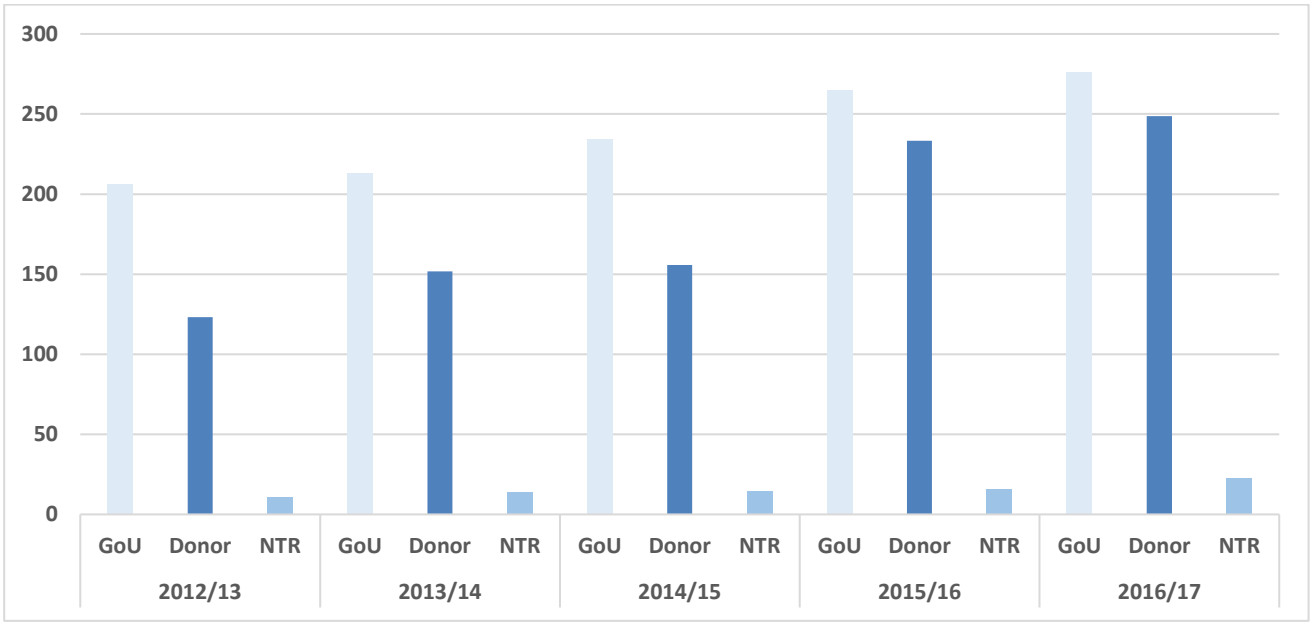
The overall funding constraint also calls for effective and efficient resource allocation and utilisation within the sector. In this regard, the sector is encouraged to practice the allocative efficiency measures in its spending, and obtain more of the desired outputs for the same budget resource. This can be achieved through adequate coordination within the Ministry and division of institutional responsibilities of the Vote Function Managers. The funds will be allocated to the sector through the existing votes and respective vote functions using the Output Budgeting Tool (OBT) system designed to assist this process. The sector will also continue to pursue the stand-alone projects' implementation modality in some merited cases so as to fast-track and bridge any gaps that may exist.

Table 4: Sector Budget Allocation for the FY 2012/13-FY 2016/17

Vote Source	2012/13			2013/14			2014/15			2015/16			2016/17		
	GoU	Donor	NTR	GoU	Donor	NTR	GoU	Donor	NTR	GoU	Donor	NTR	GoU	Donor	NTR
MWE	141.811	123.25	00	142	151.69	00	172.22	155.8	00	201.09	233.28	00	205.1	248.73	00
NEMA	0.97	00	00	1.05	00	00	1.05	00	00	1.15	00	00	1.05	0	00
NFA	1.00	00	11.081	0.93	00	14.25	0.925	00	14.367	2.09	00	15.64	1.925	0	22.5
LGs	62.292	0	00	68.91	00	00	60.372	00	00	60.37	00	00	68.24	0	00
Total	206.073	123.25	11.081	212.9	151.69	14.25	234.57	155.8	14.37	264.7	233.28	15.64	276.32	248.73	22.5

Source: MWE Sector Performance Reports

Figure 2: Comparison of Sector Budget Allocation:



5.2.2 District Conditional Grant and Cross-Sectoral Funds Allocation

There is a need to intensify sector budget support earmarked to the Water and Sanitation, Environment/Wetlands and Urban Water Operation and Maintenance District Conditional Grants. In addition, government is expected to provide more funding to the Northern Uganda Social Action Fund (NUSAF), and Peace, Recovery and Development Plan (PRDP), among others.

5.2.3 Private Sector and CSO Initiatives

The private sector is emerging as a key source of financing, as they are currently facing risks to their businesses related to the reduced quality and quantity of water resources. The private sector is therefore interested in joining efforts with government through PPPs to address these challenges and ensure that the quality and quantity of water is maintained to reduce their water related risks. The Civil Society Organizations, the Private Sector, multilateral and bilateral arrangements like UNCEF and UNDP are potential sources of funding for the sector. It is envisaged that progressive achievements of the NDPII/SDP targets are likely to attract more local as well as external funding to the sector in response to the international call and government commitments.

5.2.4 Non-Tax Revenues Sources

Water Resources Management: The recently developed water source protection guidelines provide for each water infrastructure project to make a contribution of 3% on capital investments for water source protection in piped water supply, point sources and (WfP, multipurpose) reservoirs, to protection of the water source and its catchment. These funding mechanisms have a big potential and could, if well developed and supported, provide a sustainable source of financing. Permit fees are paid by those who abstract groundwater and surface water, discharge waste water into the environment, are involved in the business of drilling boreholes and construct hydraulic structures on water bodies. User fees are paid for water and wastewater quality testing services, and sales of hydrological, hydro-geological, hydro-metric and water quality data and information. Other non-traditional sources of funding include market finance, bonds, concessionary loans, and environment levy and ecosystem services.

It is however important that these funds are retained at source where they are generated so that they can be utilized at source to protect the quality and quantity of water resources to keep those paying the money motivated and benefiting from outcomes of the various management actions).

In forestry, financing of the projects and programs will be through various ways to stimulate investment. The funds will be addressed through:

- Revenue generation from the forest products through value addition and diversification.
- Payment for Ecosystem Services (PES) especially through carbon credits and watershed protection services.
- Private sector investment from domestic and external sources.
- Public Private Partnerships (PPP), especially for commercial timber and energy plantations and value addition.
- Official Development Assistance (ODA), most of which is disbursed through the medium term expenditure framework, approved by the water and environment sector working group.
- Government instruments like tax reliefs for the private sector and loans.
- Long term loans from financing institutions like development banks and pension funds.

In the Water for Production sub-sector, the recent efforts by Government to acquire and deploy specialized equipment at regional level have yielded high interest by the private sector to hire the equipment to develop facilities at their farms. This eases investment costs and enhances the growth in water supply coverage, as government funds are leveraged to provide more investments in new areas.

SECTION SIX - MONITORING AND EVALUATION ARRANGEMENTS

This section outlines the key sector specific inputs, outputs, outcomes and impact indicators. It further stipulates the steps to be taken in assessing the progress and impact of the sector interventions, which include periodic quarterly and annual monitoring plus annual sector reviews including the related timeframe.

6.1 Sector Specific Performance Measurement Frameworks

The development and operationalization of the SDP's planned outputs/outcomes hinge on the strategic objectives and outcomes outlined in the NDPII for the period of 2015/16-2019/20, while the SDP Sector Results Matrix on the other hand builds on the existing Performance Measurement Frameworks (PMF) for Water and Sanitation, Environment and Natural Resources and Climate Change, which provide a wider framework for assessing the sector's progress on socio-transformation. In addition, the SDP performance indicators are linked to the annual outputs and outcomes as provided for in the Budget Framework Papers (BFP) and Ministerial Policy Statements (MPS).

Monitoring of the SDP outcomes shall be progressive throughout the 5-year implementation cycle. Periodic monitoring will be undertaken at a quarterly and annual basis, and related progress reports will be prepared and disseminated to the Sector Working Group (SWG) and Top Policy Management (TPM) for appropriate decision making. It will also facilitate the matching of resource allocations to sub-sector outputs and performance targets of the NDPII. The monitoring shall be participatory at all levels such as the sub- County and district local government level, and by central government ministries including Ministry of Water and Environment. In addition, the Budget Monitoring and Accountability Unit under the Ministry of Finance, Planning and Economic Development, the Office of the Prime Minister and Office of the President will carry out independent monitoring to assess the effectiveness in utilization of funds allocated to the sector for service delivery including the progress in implementation of the NRM manifesto (2016-2021).

Furthermore, the sector undertakes to carry out the Annual Joint Sector Reviews (JSR) and Joint Technical Reviews (JTR) held annually, bringing all stakeholders including MDAs, Development Partners, Local Governments, private sector and CSOs together to review the sector performance. The sector is further required to prepare quarterly progress reports for submission to the MFPED and OPM for consolidation into the Government Half/Annual Reports reviewed by Cabinet and Parliament to assess impacts in service delivery. It intends to carry out mid-term reviews during the third year of SDP implementation as well as the end of SDP period to evaluate the impact of the projects and programs undertaken during implementation.

In addition, during the implementation of projects and programmes, the responsible Directorates, Departments and Agencies (DDAs) undertake to monitor and inspect progress providing data for the required corrective and decision-making actions. The data is consolidated and analyzed to generate quarterly and annual progress reports as well as in the preparation of the Government (semi) Annual Performance Report (GAPR) reviewed by Cabinet and Parliament every year.

Table 5: Activity Timeframe for Sector Supervision/Monitoring/Reviews for FY 2015/16-2019/20

Activity/Period	J	F	M	A	M	J	J	A	S	O	N	D	Responsible
Technical Supervision													MWE/LGs
Monthly Progress Reports													TPM
Quarterly Progress Reports													TPM/SWG/Donors/NGOs
Annual Joint Monitoring													MWE/MFPED/MPS
Government Semi/Annual Performance Reviews													MWE/OPM
Joint Technical Review													MWE/WESLD
Joint Sector Review													MWE/WESLD
Mid-Review	May 2017												MWE/SWG

6.2 Key Sector Outcome Indicators

The assessment of progress on performance and impact of the Water and Environment sector interventions will be undertaken in accordance with the agreed results matrix under National Development Plan-II. The overall sector monitoring indicators per sub-sector are shown in Tables 15-17 describing three Key Result Areas and respective objectives, outcome indicators and performance targets as well A responsible actors for the period of 2015/16-2019/20.

Key Result Area 1: This KRA aims at increased access to safe water in rural and urban areas, increased sanitation and hygiene levels in rural and urban areas and increase functionality of water supply systems. The sector therefore targets to increase water supply coverage in rural areas from 65 to 79 percent while ensuring that at least each village has a clean and safe water source, Increase urban water supply from 73 to 95 percent (100 per cent in NWSC towns), and increase sewerage coverage to 30 percent in towns with population greater than 15,000.

Table 6: Performance Monitoring Indicators for Water and Sanitation Infrastructure

Objectives	Outcome	Outcome Indicators	2012/13	Baseline 2014/15	Target 2015/16	Target 2016/17	Target 2017/18	Target 2018/19	Target 2019/20	Responsible Actors
Increase access to safe water supply in rural areas.	Increased access to rural water supply.	% of safe rural water supply coverage	65%		66%	68%	71%	75%	79%	DWD LGs CSO Private Sector
	Enhanced functionality of water sources	% of functionality rates of rural water system	84%		86%	87%	89%	90%	92%	
Increase access to improved sanitation rural areas.	Increased access to improved sanitation	% of sanitation coverage	71%		79%	82%	86%	90%	95%	DWD LGs CSO Private
Increase access to safe water supply in urban areas.	Increased access to urban safe water supply.	% of safe urban water supply coverage	70%		80%	100%	100%	100%	100%	
	Enhanced functionality of water source	% of urban sanitation coverage	87%		95%	100%	100%	100%	100%	
Improve urban sanitation and hygiene services		% of urban sanitation coverage	82%		90%	100%	100%	100%		DWD NWSC LGs CSO Private Sector
Improve national capacity for water resources management (WRM	Improved use and management of water resources.	Level of waste water discharge	48%		55%	60%	64%	6 8%	70%	DEA DWD NWSC LGs CSO Private Sector
		Level of surface water abstraction	65%		75%	77%	79%	80%	85%	
		Level of ground water abstraction	68%		75%	77%	79%	80%	85%	
Improve water resources planning, and regulation		Hydrological year book	0		1	1	1	1	1	DEA, DWD, NWSC, LGs, CSO, Private Sector
		Annual WR Status Reports	0		1	1	1	1	1	

Improve water quality management to ensure provision of water of adequate quality for all uses and to address pollution challenges	Increased analytical capability of water resting laboratories and reliable information for water quality management	% of Rural Water samples that comply to national standards	=		41%	45%	50%	55%	60%	DWRM DEA DWD DUWS NWSC LGs CSO Private Sector
		% of Urban water samples that comply to national standards	50%		60%	70%	80%	85%	90%	
		% of wastewater samples that comply to national standards	37%		40%	42%	44%	45%	50%	
		% of water bodies with good ambient water quality	40%		40%	40%	41%	42%	45%	
		Water quality Status report	0		0	1	1	1	1	
Improve water resources monitoring, assessment and information services	Increased monitoring network coverage and reliable WR information.	WR Status reports.	0		0	1	1	1	1	DWRM DEA DWD NWSC LGs CSO Private Sector
		Water resources maps developed.	1		1	1	1	1	1	
Improve protection of Uganda's interests in Tran boundary water resources	Uganda's interests in international waters safeguarded through effective trans-boundary cooperation.	Number of collaborative transboundary projects Uganda is taking a leading and active roles under LVBC and NBI.	8		8	8	8	10	10	DWRM DEA DWD NWSC LGs CSO Private Sector, Regional bodies (LVBC, NBI)
		Number of new trans-boundary Projects identified, formulate, finalized, funds secured and implementation initiated	0		2	2	3	3	3	
	Improved institutional management to regulate catchment levels.	No. of the Basin Report.	0		1	1	1	1	1	
	Reduced over exploitation on water bodies.	**Proportion of water abstractors regulated (%)**	**65**		**75**	**77**	**79**	**80**	**85%**	

Key Result Area 2: This KRA aims at the following:

(i) **Environment Management** - The sector targets to increase wetland ecosystem coverage from 10.9 percent to 12 percent through protection and restoration of degraded fragile ecosystems (bare hills, river banks, lake shores, rangelands), and enhance compliance to wetland regulations.

(ii) **Forestry Management** – The sector will focus on increasing national forest cover, increasing economic productivity of forest-incomes, capacitating institutions in forestry, and restoration and improvement of forest ecosystems. Overall, the sector targets to increase the percentage of forest cover from 14 to 18 percent during the implementation period of the Plan.

(iii) **Weather, Climate and Climate Change** – This sub-sectorplans to strengthen the institutional and human capacity for effective delivery of meteorological services, acquiring modern equipment, to operate and maintain the network, to disseminate the information, and to strengthen its institutions. These interventions are expected to result in an increased automation of the climate monitoring network from 10 to 40 percent by 2019/2020. In addition, the sector will promote integration of climate change policy interventions in all sector development plans as a means to increase resilience to climate change.

Table 7: Performance Monitoring Indicators for Environment and Natural Resources

Objectives	Outcome	Outcome Indicators	Baseline 2012/13	2014/15	Target 2015/16	Target 2016/17	Target 2017/18	Target 2018/19	Target 2019/20	Responsible Actors
Restore and maintain the integrity and functionality of degraded fragile ecosystems	Increased level of restoration of environment degraded fragile ecosystem	Acreage (Ha) of wetlands restored	18.8		800	2000	2100	1900	1600	DEA NEMA NFA FSSD WRD CSO LGs
		% of area covered by wetlands.	10.9		11.3	11.5	11.6	11.8	12	
		% of area covered by forests(tree cover)	Less than 18		18.25	18.5	18.75	19.0	19.25	
Increase the sustainable use of Environment and Natural Resources	productive Natural Resource base A clean and healthy productive environment.	Number of institutions integrating environmental sustainability into their policy and plans.	133		133	133	133	133	133	DEA NEMA NFA FSSD WRD CSO LGs
		Functional ENR Management Information System.	0		1	1	1	1	1	
		Improved hazardous and e- waste management infrastructure.	0		1	1	1	1	1	
Increase wetland coverage and reduce wetland degradation.	Increased wetland cover.	% of land area (Ha) covered by wetlands	10.9		11.3	11.5	11.6	11.8	12	DEA NEMA WRD LGs EPF
		% of wetland ecosystems restored.	0.09		0.07	0.19	0.19	0.17	0.15	
		% of wetland area under approved management plans.	2.2		6.00	6.00	6.00	7.23	4.82	

Increase the functionality and usage of meteorological information systems.	Functional meteorological information system.	% meteorological observation network coverage.	70%		75%	78%	80%	82%	85%	UNMA LGs
Increase the country's resilience and mitigation to the impacts of climate change	Increased resilience and mitigation to climate change through mainstreaming of climate change in sector budgets and plan at both national and district level.	Percentage(Institutions) mainstreamed with cc and adopting climate change resilient and mitigation activities	10		20	35	50	65	80	CCD, DPs NGO's LGs Private Sector
Increase mitigation and adaptation (afforestation and reforestation and sustainable management) actions.	**Forest cover increased**	**Percentage of forest cover**	**Less than 18**		**18.25**	**18.5**	**18.75**	**19.0**	**19.25**	**MWE CCD MDAs LGs Private Sector**

Key Result Area 3: Water Infrastructure Development - for increased provision and utilization of water for production facilities to enhance production and productivity. The cumulative storage for water for production is expected to increase from the current 29.1MCM to 30.7MCM by end of Financial Year 2019/.20.

Table 8: Performance monitoring indicators for Water for Production

Objectives	Outcome	Outcome Indicators	Baseline 2012/13		Target 2015/16	Target 2016/17	Target 2017/18	Target 2018/19	Target 2019/20	Responsible Actors
Increase the provision of water for production facilities.	Increased water storage capacity (cubic meters) for irrigation, livestock, aquaculture and Rural Industries	Percentage increase in potential area under irrigation	1		1.5	2	3	4	5	DWD WfP LGs Private Sector
		Cumulative increase in water for production storage capacity (million cubic meters) created for Livestock	27.5		29.1	30.7	32.8	35.4	38	
		Cumulative increase in water for production storage capacity (million cubic meters) for Rural Industries and Aquaculture	-		0.16	0.32	0.37	0.47	0.53	
Increase the functionality and utilization of existing water for production facilities.	Increased Functionality and utilization of existing water facilities.	Percentage of water for production facilities functional	74		81.0	83.0	85.0	88	90	DWD WfP LGs Private Sector
		Percentage of water for production storage capacity utilised annually.	**50**		**60**	**65**	**70**	**75**	**80**	

Annex 1. Cost implementation Matrix

This section covers the sector's annual action plan by thematic area and cost and financial plan. The costing is based on the thematic area objectives, strategic interventions and consolidated investment requirement for the period of 2015/16-2019/20.

Environment and Natural Resources

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
Restore and maintain the, integrity and functionality of degraded fragile ecosystems.	Enforce compliance with environmental and natural resources legislation at all levels; develop and implement ecosystem management and restoration plans; restore the degraded fragile ecosystems (river banks, bare hills, range lands and lake shores); Promote ecosystems based adaptation to climate change in order to increase resilience of ecosystems and communities to the impacts of climate change; promote payment for Ecosystem Service (PES) and other benefits sharing schemes, and support cancellation of tittles issued in forests, wetlands, riverbanks and lake shores.	Enforcement of compliance with environmental laws, regulations and standards.	1.68	1.71	1.74	1.78	1.2	8.11
		Protect and restore the integrity and functionality of degraded fragile ecosystems.	0.31	0.32	0.32	0.33	0.34	1.62
		Preparation and implementation of rivers banks and lakeshores management plans for key rivers and lakes (Katonga, Muzizi, Manafwa, Mayanja)	0.02	0.12	0.12	0.12	0.12	0.5
		Survey and demarcate 210 Km of R. Nile banks	0.09	0.452	0.452	0.452	0.452	1.898
		Survey and demarcate selected Lakeshores– Kachera, Kyoga and Wamala	-	-	0.6	0.6	0.6	1.8
		Restoration of 2600 Ha of the degraded sites along key river banks.	-	-	10.83	10.83	10.83	32.49
		Restoration of 3,800 Ha of the degraded watersheds in hilly and mountainous areas	-	-	15.83	15.83	15.83	47.49
		Scale-up Ecosystem Based Adaptation (EBA) practices in 2 mountain ecosystems (Mt. Elgon and Mt. Rwenzori).	-	-	1.5	1.5	1.5	4.5
		Provide technical assistance to the implementation of Payment for Ecosystem Services (PES) through awareness programs and development of guidelines.	-	-	0.2	0.14	0.06	0.4
		Provide technical assistance to the cancellation of land titles issued in forests, wetlands, lakeshores and riverbanks country wide such as: Awareness programs, enforcement and development of guidelines.	0.04	0.04	4.48	1.12	1.12	6.8
Increase the	Promote value addition to ENR goods	Value addition to ENR goods and services	0.25	0.26	0. 26	0.27	0.27	1.05

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
sustainable use of Environment and Natural Resources	and services; develop a database system for ENR for integration in the national accounting system; Implement green economy initiatives including integration of environmental sustainability into planning and implementation of development processes; Expand research on economic, ecological and socio-cultural values of ecosystems and biodiversity; promote sound management of hazardous chemicals and e-wastes management including the establishment of waste management infrastructure; develop and strengthen national, regional and international partnerships and networks in environmental and natural resources management; develop and strengthen national, regional and international partnerships and networks in environmental and natural resources management; strengthen management of environmental aspects of oil and gas and other finite resources such as water and land; implement national biodiversity and bio-safety targets; increase public awareness on ENR opportunities, green economy and sustainable consumption and production practices and support the decentralized environment management function at the Local Government level including enforcement of the bye-laws on wild fires.	Develop and operationalize a one-stop information system for ENR	-	-	1.2	0.6	0.2	2
		Enhanced monitoring of development in Oil and Gas	6.0	5.5	4.5	3.5	2.5	22
		Electronic and other hazardous waste management	1.4	1.43	1.46	1.49	1.52	7.3
		Implementation of national biodiversity and biosafety targets	1.2	1.2	1.25	1.27	1.3	6.22
		Sound chemicals management ➢ Conduct a national inventory on chemicals used, and their effect on human beings and the environment ➢ Prepare and implement a national strategy for chemicals management	0.5	0.51	0. 52	0. 53	0.54	1.55
		Policy, legal and institutional frameworks	7.79	7.95	8.11	8.27	8.44	40.56
		Strengthen and develop national, regional and international partnerships	0.25	0.23	2.62	2.67	2.73	8.5
		Support establishment and operation of community-based waste collection management centers including the preparation of Solid Waste Management Master Plans, and Storm Water Drainage Master Plans for municipal councils (17 Municipalities)	-	-	3.7	1.5	1	6.2
		Enforcement of environmental safeguards policies during establishment of industrial parks: a) Conduct a strategic Environment and socio assessment for the proposed planned new Industrial parks		0.2	0.8	0.8	0.4	2.2
		Fast track approval process of Environment Impact Assessment (EIAs) for proposed investments / projects	0.2	0.2	0.6	0.6	0.6	2.2
		Risk assessment and mapping of landslide hotspots	-	-	0.4	0.4	0.1	0.9

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
Increase wetland coverage and reduce wetland degradation	Demarcate, restore and gazette wetland ecosystems country wide; develop wetlands management plans for equitable utilisation of wetland resources country-wide; Promote the Protection and restoration of wetland eco-systems; expand the knowledge base of ecological and socio-economic value of wetlands among stakeholders; develop markets for wetland products and services; build an institutional and technical capacity in the centre and Local Governments in wetlands management; develop and operationalise legal and governance mechanisms for suitable wetlands management.	Demarcation, gazettement and restoration of wetlands	7.2	7.2	7.2	7.2	7.2	36
		Development and implementation of District Wetland Action Plans	3.3	3.3	3.3	3.3	3.3	16.5
		Undertake the re-inventory and assessment of all wetlands to create a national database information	0.06	0.06	0.06	0.06	0.06	0.3
		Linking and maintaining the National Wetlands Information System to all the 112 LGs and 22 Municipalities	0.1	0.1	0.1	0.1	0.1	0.5
		Undertake total economic valuations (TEV) studies of selected 05 critical wetland country-wide.	0.1	0.1	0.1	0.1	0.1	0.5
		Strengthening the functionality of 04 RTSUs in the 04 regions	0.1	0.1	0.1	0.1	0.1	0.5
		Strengthening of the RAMSAR Centre for Eastern Africa (RAMCEA), for Capacity Development	0.04	0.04	0.04	0.04	0.04	0.2
		Establishment and operation of RAMSAR site wetland information center in all the 11 sites	0.11	0.11	0.11	0.11	0.11	0.55
Increase the functionality and usage of meteorological information systems	Refurbish, modernize and develop meteorological stations, develop the guidelines and regulations for operationalizing the Meteorological Act, develop the policy, and strengthen the legal and institutional framework for meteorological services, develop and implement awareness programs on the importance and use of meteorological services, design, develop and implement and early warning products in support of climate change adaptation and strengthen research on future climate trends and its impacts	Development of new stations (countrywide)	0.49	1.3	0.29	1.89	2.25	6.22
		Upgrade of the existing stations (countrywide)	0.41	0.75	0.38	0.12	0.12	1.78
		Acquisition of specialized and modern equipment (central)	0.5	0.91	2.63	20.15	2.67	26.86
		Policy, legislation and planning framework	0.47	0.52	0.57	0.63	0.66	2.85
		Capacity building and training	0.18	0.15	0.14	0.06	0.08	0.61
		Acquisition and maintenance of weather Radar	-	13	0.65	0.65	0.65	14.95
		Maintenance of equipment	0.19	0.63	1.36	1.2	1.28	4.66
		Acquisition and maintenance of office accommodation	0.42	1.1	9.39	0.54	0.96	12.41
		Acquisition and maintenance of transport equipment	0.54	0.7	0.7	0.6	0.6	3.14
Increase the	Integration and implement of the	Monitoring and coordination of NCCP	3	2	0.5	0.5	0.5	6.5

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
country's resilience and mitigation to climate change for attaining low carbon development path way	National Climate Change Policy (NCCP) strengthening of national coordination, monitoring and reporting on the implementation of international standards and commitments.	Creating an enabling environment for policy implementation (through awareness)	3.1	3.1	3.1	0.7	0.7	10.7
		Representation/negotiation in international arena	1.5	1.5	1	1	1	6
		Researches	0.5	0.5	0.5	0.5	0.5	2.5
Increase afforestation, reforestation, adaptation and mitigation and mitigate deforestation for sustainable forestry,	Develop countrywide community based and institutional tree planting initiatives; promote sustainable development of commercial forest plantations and industry including value addition; promote implementation of sustainable management of forests through restoration of natural forests on protected and private land; promote forestry research and development; develop markets for forest products and services; development of a National REDD+ Strategy and costed action plan; development a Forest Emissions Reference Level and a Forest Reference Level (FERL/FRL); development of a robust and functional National Forest Monitoring System (NFMS) for the monitoring and reporting of the REDD+ activities included in the REDD+ Strategy; promote forestry in urban development plan and scale up agro-forestry based alternative livelihood systems.	Development of Commercial Forest Plantations	42	50.4	58.8	67.2	75.6	294
		Community and institutional tree planting	20.8	24.96	29.12	32.28	37.44	144.6
		Restoration of degraded natural forests on protected and private land	5.9	7.78	9.45	11.73	13.6	48.46
		Forest law enforcement and governance (FLEG).	4.38	3.67	3.9	3.7	4	19.65
		Strengthening forest institutions responsible for forest management and development	4.2	4.2	4.4	4.5	4.6	21.9
		Quality seedlings development	1.2	1.2	1.2	1.2	1.2	6
		Urban Forestry development	2.2	1.7	1.9	2.1	2.3	10.2
Improve climate change legal and	Establish of appropriate institution for coordinating national climate change response, establish an appropriate	Improve and maintain adequate institutional capacity	0.4	0.4	0.2	0.2	0.2	1.4

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
institutional framework	legal framework for climate change policy implementation and compliance.							
Sub-Total			**90.33**	**103.84**	**125.52**	**127.95**	**144.48**	**592.12**

Water and Sanitation Infrastructure Development

The objective is to increase access to safe water in rural and urban areas; increasing sanitation and hygiene levels in rural and urban areas; increasing functionality of water supply systems; incorporate gender analysis, implement water resources management reforms and promote catchment based integrated water resources management.

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
Increase access to safe water supply in rural areas	Construct, operate and maintain appropriate community water supply systems in rural areas focusing in un served areas; target investments in water stressed areas abstracting from production wells as well as large GFS where appropriate to serve the rural areas; promote and scale up rainwater harvesting at household, public institutions and community level with particular focus on climate change; promote WASH humanitarian preparedness and response to avert possible outbreaks of water related diseases especially in settlements for poor communities and as well as refugees and displaced persons; improve functionality, sustainability and resilience of water supply systems in rural areas; Promote Public Private Partnership arrangements to increase accessibility of water sources; mobilize and promote community participation in the management of water systems, encouraging the women to take up decision making	Borehole drilling (4,400 boreholes per year)	96.8	96.8	96.8	96.8	96.8	484
		Borehole Rehabilitation (10% of investment)	9.68	9.68	9.68	9.68	9.68	48.4
		New Large GFS (Bukedea, Ogili, Potika, Orom, Ora, Sebwe, Nyamugasani, Rwebisengo, Bitsya, Ora/Ala, Greek, Matheniko, Kochi, Lamia, Ndugutu, Nyamwamba, Mubuku, Lubilia, Sipi, Atari	93.8	93.8	93.8	93.8	93.8	469
		Large GFS expansion (Bududa II, Lirima II, Nyarwodho II, Bwera, Masyoro, Kikyenkye, Shuuku, Bukwo, Nyabuhikye	29.2	29.2	29.2	29.2	29.2	146
		Multi-village pumped and piped water systems (Ngoma/Wakyato, Bugangari/Bwambara, Bukooli, Yumbe), Kahama II)	52.7	52.7	52.7	52.7	52.7	263.5
		Piped systems for RGCs (16No.) countrywide	25.2	25.5	25.5	25.2	25.2	126.6
		Promotion of Rainwater harvesting in public facilities (countrywide)	6.6	6.6	6.6	6.6	6.6	33
		Springs and Shallow Wells	16.5	16.5	16.5	16.5	16.5	82.5
		Promotion of appropriate technologies for point water sources	8.51	8.51	8.51	8.51	8.51	42.55
		Support to LGs (TSUs)	4	4	4	4	4	20

	positions.							
Increase access to improved sanitation rural areas.	Strengthen collaboration amongst the institutions responsible for sanitation activities (MoH, MoES, MWE, LGs); implement demand-led sanitation and hygiene (Community Led Total Sanitation and sanitation/social marketing); modernize solid waste management and treatment in the rural growth centres and fish landing sites; promote appropriate sanitation technologies and strengthen law enforcement bodies with regard to sanitation and hygiene.	Improved Hygiene and Sanitation promotion	1.7	1.7	1.7	1.7	1.7	8.5
Sub-Total (Rural)			344.69	344.99	344.99	344.69	344.69	1,724.05
Increase access to safe water supply in urban areas	Construct, operate and maintain piped water supply systems in small towns and urban areas country wide; strengthen Operation and Maintenance, asset management and regulation for the urban water systems; improve the enabling environment for private water operators and reform the public utility model and increase water service coverage with emphasis on the Greater Kampala Metropolitan Area (GKMA) taking into consideration environment and climate change among others.	Increase water supply service coverage for small towns and rural growth centres in a pro-poor sensitive manner	118.4	130.2	1,091	1,091	1,091	3,272
		Improve O&M of urban piped water supply systems (small towns) including water source per village in all existing schemes	6	6.8	106	106	106	317
		GKMA water supply and sewerage expansions and extensions	305	240	150	220.00	270	965
		NWSC-South western towns	49.1	66.7	125	49.4	20.8	311
		NWSC-Albertine Graben	14.4	89.5	138.5	53.6	21.8	318
		NWSC – Eastern towns	55	33	24	23	15.5	151
		Establish effective regulation of urban water supply and sanitation services (small towns)	1.9	2.5	2.7	2.8	3.1	13
Improve urban sanitation and hygiene services	Intensify collaboration amongst MWE and Local Governments; increase sewerage connections in towns with sewerage systems and develop new infrastructure, including satellite sewerage system in the greater Kampala Metropolitan area; develop smart-incentive schemes and intensify sanitation marketing for increased house hold investment in sanitation; construct, operate and maintain a cluster of faecal-sludge management treatment systems while promoting private sector services for sludge collection and disposal and strengthen law	Improved Urban Sanitation and Hygiene Services (small towns)	5.5	6.5	27	27	27	82

	enforcement bodies with regard to sanitation and hygiene.							
Sub-Total (Urban)			**555**	**575**	**1,664**	**1,573**	**1,555**	**5,923**
Water Resources Management								
Improve national capacity for water resources management (WRM)	Increase use of Integrated Water Resource management approaches in the planning, management and development of water resources; integrate catchment management plans and implement identified climate change (CC) adaptation measures; establish a Water Resource Institute for in-country human resource capacity development for water resources management and develop and review legal and institutional framework for WRM	Improved WR management, at the WRM Zones (zonal level)	3.69	4.72	10.84	24.94	27.44	71.63
		Integrated catchment-based water resources management (zonal level)	2.07	2.65	6.08	17.03	34.92	62.75
		Improved water quality management	1.64	2.1	4.82	11.08	12.19	31.83
		Water Resources coordination and sector reform	0.7	0.9	1.17	1.75	1.92	6.44
Improve water resources planning, and regulation	Improve the assessment and evaluation of permits for various water uses and use of other tools for water resources regulation, increase compliance monitoring and enforcement based on the compliance and enforcement strategy (2010), increase the proportion of major polluters, abstractors regulated according to the water laws and regulations from 55% to 70%, promote dam safety and reservoir regulation for large water reservoirs and water bodies	Improved water resources planning and regulation	1.58	2.02	4.65	10.69	11.76	30.7
		Integrated catchment-based water resources planning (zonal level)	2.36	3.01	6.93	17.32	25.99	55.61
Improve water resources monitoring, assessment and information services	Maintain functional water resources monitoring networks; WRM data processed and packaged appropriately for the public and private users; Increase visibility of Water Resources planning at all levels; Availability of water resources particularly in threatened catchments is well defined.	Improved water resource monitoring and assessment	1.17	1.49	5.43	9.9	9.69	27.68
Improve water quality management to ensure provision of water of	Review legal and institutional framework for Water Quality Management; Continuous increase analytical and quality assurance capability of national and regional water laboratories to address emerging water quality issues; Increase use of water quality	Develop relevant policies, regulations and standards	0	0	0.28	0.5	0.4	1.18
		Laboratory analytical capability & National Lab Policy	0.3	3.4	6.24	8	4	21.94
		Water Quality information use and dissemination for early warning & decision	0.74	0.94	2	1.2	1.2	6.08

adequate quality for all uses and to address pollution challenges	information for integrated water resources management; Establish systems to provide oversight quality assurance for water supply services and wastewater management; Increase used and dissemination of water quality information for early warning and decision making; Establish risk-based systems to support efficient water quality management	making.						
		National Drinking water regulation & SDG monitoring	0.2	0.28	1.2	1	1	3.68
		Oil & gas and mining waste management & early warning systems	3.1	0.2	3.5	2	2.5	11.3
Improve protection Uganda's interests in international waters	Develop and operationalize a national policy and strategy for management of International Waters, and promote regional cooperation for equitable and reasonable utilization of the shared water resources, participate and fast truck benefits from the Nile basin initiatives multi-lateral agreements.	Improved trans boundary water resources management	0.29	0.37	0.85	1.1	1.21	3.82
Sub- Total (WRM)			**17.84**	**22.08**	**53.99**	**106.51**	**134.22**	**334.64**

Water for Production

Objective	Strategic Interventions	Project/Programme Investment area	Projected Investment Requirements in Billion UGX					
			2015/16	2016/17	2017/18	2018/19	2019/20	Total
Increase the provision of water for production facilities	Establish new bulk water systems for multi-purpose (dams, water abstraction, transmission and distribution to industrial zones and other points of use) while factoring in the impacts of climate change, protect and manage water catchment areas; increase private sector involvement in the implementation of water for production facilities, including use of the Public-Private Partnership (PPP) arrangement; prepare and implement the national irrigation Master Plan that takes into account future impacts of climate change; gazette water reserve areas for large dams and involve private operations to strengthen management.	Water for Livestock in Cattle corridor Area)	25.89	25.89	34.52	43.14	43.14	172.58
		Livestock water (non-cattle corridor) Area	7.42	7.42	9.89	12.36	12.36	49.45
		Irrigation development Area A (Off-farm)	43.34	43.34	57.79	72.24	72.24	288.95
		Irrigation development Area B (Off-farm)	28.39	28.39	37.85	47.31	47.31	189.25
		Water for aquaculture	2.28	2.28	3.04	3.8	3.8	15.2
		Water for Rural Industries	4.5	4.5	5.99	7.49	7.49	29.97
		Water for Livestock in Cattle corridor Area)	25.89	25.89	34.52	43.14	43.14	172.58
		Livestock water (non-cattle corridor) Area	7.42	7.42	9.89	12.36	12.36	49.45
Increase the functionality and utilization of water for production facilities.	Establish functional management structure for water for production facilities, such as Water user committee/water boards; rehabilitate and maintain existing water for production facilities; promote measures undertaken to increase recovery of maintenance costs and increase the proportion of water for production recovery facilities that are managed by the private sector.	Capacity building and O& M support	12.61	12.61	16.81	21.01	21.01	84.05
Sub-Total (WfP)			157.74	157.74	210.3	262.85	262.85	1051.48
Sector Capacity Development	Financing requirement for cross-cutting Sector Capacity Development Needs		1.61	1.74	1.87	2	2.14	9.35
Grand Total			**1,167**	**1,205**	**2,401**	**2,417**	**2,443**	**9,635**

Annex 2. Performance Output and Outcome Indicators and Targets for 2015/16-2019/20

Key Result Areas of Focus: Environment and Natural Resources

Environmental Management - protection and restoration of degraded fragile ecosystems (bare hills, river banks, lake shores, rangelands); enhancement of compliance; developing and disseminating information on environment management; developing PPPs for environment management; monitor oil and gas development, electronic and other hazardous waste management; and build capacity at all levels (MDAs, LGs and CSOs); Forestry Management - increasing national forest cover to 18 per cent; increasing economic productivity of forest-incomes; capacitating institutions in forestry; restoration and improvement of forest ecosystems; Wetlands management - securing and maintaining coverage of wetlands from 10.9 per cent to 12 per cent; promoting wise use of the wetland resources; increasing the knowledge base among stakeholders; Meteorology - acquiring modern equipment; operating and maintaining the network; disseminating information; and strengthening the institutions.

Objectives	Outcome	Outcome Indicators	Baseline	Target				
			2012/13	2015/16	2016/17	2017/18	2018/19	019/20
Restore and maintain the integrity and functionality of degraded fragile ecosystems	Increased level of restoration of degraded fragile ecosystem.	Acreage (Ha) of wetlands restored	18.8	800	2,000	2,100	1900	1,600
		% of area covered by wetlands.	10.9	11.3	11.5	11.6	11.8	12
		% of area covered by forests(tree cover)	-	18.25	18.5	18.75	19.0	19.25
Increase the sustainable use of Environment and Natural Resources	Productive Natural Resource base A clean and healthy productive environment.	Number of institutions integrating environmental sustainability into their policy and plans.	133	133	133	133	133	133
		Functional ENR Management Information System.	0	1	1	1	1	1
		Improved hazardous and e-waste management infrastructure.	0	1	1	1	1	1
Increase wetland coverage and reduce wetland degradation.	Increased wetland cover.	% of land area (Ha) covered by wetlands	10.9	11.3	11.5	11.6	11.8	12
		% of wetland ecosystems restored.	0.09	0.07	0.19	0.19	0.17	0.15
		% of wetland area under approved management plans.	2.2	6.00	6.00	6.00	7.23	4.82
Increase the functionality and usage of meteorological information systems	Functional meteorological information system.	% meteorological observation network coverage.	70%	75%	78%	80%	82%	85%
Increase the country's resilience to the impacts of climate change	Increased resilience and mitigation to climate change.	% (Institutions) mainstreamed with climate Change and	10	20	35	50	65	80

Objectives	Outcome	Outcome Indicators	Baseline	Target				
			2012/13	2015/16	2016/17	2017/18	2018/19	019/20
to attain low carbon Development Pathway		adopting climate change resilient and mitigation activities						
Increase mitigation and adaptation (afforestation and reforestation and sustainable management) actions.	Forest cover increased	Percentage of forest cover	0	18.25	18.5	18.75	19.0	19.25

Output Level Indicators

Objectives	Intervention	Output	Output Indicators	Baseline	Target				
				12/13	15/16	16/17	17/18	18/19	19/20
Restore and maintain the integrity and functionality of degraded fragile ecosystems	Enforce compliance with environmental and natural resources legislation and standards at all levels.	A functional legal framework to enforce environmental standards.	Number of enforcement regulations and laws in place.	2	2	2	2	2	2
	Develop and implement a program on integrated ecosystems assessments	A program on integrated ecosystem assessment developed.	Number of programs on integrated ecosystem assessment developed.	0	0	1	1	1	1
	Develop and implement ecosystem management and restoration plans	Ecosystem management and restoration plans implemented.	Ecosystem management and restoration plans in place.	0	27	28	28	27	26
	Restore the degraded fragile ecosystems (river banks, bare hills, range lands and lake shores)	PES mechanisms/guidelines for forests and wetlands developed	Number of mechanisms/guidelines developed and implemented	0	0	1	0	0	0
	Promote ecosystem based adaptation to climate change in order to increase the resilience of ecosystems and communities to the impacts of climate change	Increased resilience of ecosystems and communities to impacts of climate change.	No. of communities mobilized and sensitized on climate change mitigation and adaptation	0	22	22	22	22	23
	Promote Payment for Ecosystem Services (PES)	Degraded natural resources restored	Area (Ha) of the degraded eco-systems restored under forests.	-	2,000	2,000	2,000	2,000	2,000
			No of forest with management plans (communal and private)	286	7	7	7	7	7
			Length of forest/ecosystems boundary demarcated (Km)	1,375.7	196	196	196	196	196

Objectives	Outcome	Outcome Indicators		Baseline	Target				
				2012/13	2015/16	2016/17	2017/18	2018/19	019/20
Increase the sustainable use of Environment and Natural Resources	Promote value addition to ENR goods and services	Stock of ENR goods and services improved	Number of ENR based enterprises developed/operational zed.	0	10	15	16	18	20
	Develop a database system for ENR.	A national, regional and international partnership corporation framework for ENR developed and strengthened.	Number of regional and international fora and conferences held	0	4	5	5	5	5
	Implement the green economy initiatives including integration of environmental sustainability into planning and implementation of development processes	The capacity of key lead agencies in oil and gas sector developed	Number of Lead Agencies trained, equipped and tooled and effectively implementing the plan	0	8	12	16	18	20
		The Oil and Gas environmental monitoring plan effectively implemented by all the responsible Lead Agencies	Level of environmental compliance within the Oil and Gas region	0%	30%	40%	50%	55%	60%
	Expand research on economic, ecological and socio-cultural values of ecosystems and biodiversity	National biodiversity and bio safety targets implemented.	Number of institutions implementing biodiversity and bio safety.	0	2	2	2	2	2
	Promote sound management of hazardous chemicals and e-wastes including the establishment of modern waste management infrastructure.	Public awareness on ENR opportunities, green economy and sustainable consumption enhanced.	Number of awareness campaigns conducted on ENR opportunities, green economy and sustainable consumption.	0	4	4	4	4	4
	Develop and strengthen national, regional and international partnerships and networks in environmental and natural resources management	Decentralized environment management function at the Local Government level supported.	Number of LGs supported on environmental management	111	111	111	111	111	111
	Strengthen management of environmental aspects of oil and gas	National Green Economy Strategy developed and mainstreamed into Sector Development Plans	Number of MDAs that have integrated environmental programs in their Sector Development Plans.	0	1	1	1	1	1
			National baseline information on green economy established	0	1	1	1	1	1

Objectives	Outcome	Outcome Indicators		Baseline	Target				
				2012/13	2015/16	2016/17	2017/18	2018/19	019/20
	Implement national biodiversity and biosafety targets	ENR database developed	ENR Investment data base developed and accessed	0	1	1	1	1	1
	Increase public awareness on ENR opportunities, green economy and sustainable consumption and production practices	Environmental conservation and protection through the research activities increased.	New research findings identified and adopted.	0	3	2	2	2	2
		Sustainable natural resources utilization.	Number of regional waste management disposal facilities established.	12	12	15	15	17	17
	Support the decentralized environment management function at the Local Government level.	Local governments support on environment management.	The number of local governments supported on environmental management.	0	22	22	22	22	23
Increase wetland coverage and reduce wetland degradation.	Demarcate, restore and gazette wetland eco-systems country wide	Wetlands restored, protected, conserved and gazetted	Number of wetlands protected and restored.	11	06	06	06	06	06
			Kms of wetland boundaries demarcated.	156.1	576	576	576	576	576
			Areas of wetland restored and rehabilitated.(Ha)	18.8	1,881	1,881	1,881	1,881	1,881
	Develop wetland management plans for equitable utilization of wetland resources country wide	Wetland management plans developed.	Number of Community Based Wetland Management Plans developed and implemented.	67	27	28	28	27	26
			Number of District Wetland Action plans developed and implemented.	12	23	23	22	22	22
	Expand knowledge base of ecological and socioeconomic value of wetlands among stakeholders.	Markets for wetland products developed	Number of market for wetland products developed and functional	02	03	03	03	03	03
	Develop markets for wetland products and services	Institutional and technical capacity at the centre and Local Governments built.	Number of district wetland officers trained and operational	30	40	40	40	40	40
			Number of inter-district wetland committee established and functional	04	03	03	03	03	03

Objectives	Outcome	Outcome Indicators		Baseline	Target				
				2012/13	2015/16	2016/17	2017/18	2018/19	019/20
			Number of regional wetland technical support unit established and functional.	02	02	0	0	0	04
			Number of wetland use and education centres constructed and operational	0	03	03	02	02	01
	Build the institutional and technical capacity at the centre and Local Governments in wetland management.	Legal and governance mechanisms for sustainable wetlands management developed.	National Wetland specific law in place and enforced	0	01	0	0	0	0
			Number of district wetland ordinances in place and enforced.	07	20	20	20	20	20
			Number of developers complying with wetland policy and regulations.	02	52	52	52	52	52
	Develop and operationalise legal and governance mechanisms for sustainable wetlands management	Natural resource valuation studies undertaken	Number of natural resources valuation studies undertaken.	01	01	01	01	01	01
			Number of wetland users guidelines and standards in place and distributed to stakeholders.	05	02	02	02	02	02
			Number of district wetland re-inventory and assessment reports.	05	23	23	22	21	21
			Number of DLGs and Municipalities linked to NWIS	0	27	27	27	25	25
Increase the functionality and usage of meteorological information systems	Refurbish, modernize and develop meteorological stations	Operationalisation of meteorological Act	Number of meteorological stations operational.	44	45	46	47	48	50
	Develop guidelines and regulations for operationalizing the Meteorological Act.	Guidelines and regulations for operationalizing the Meteorological Act developed.	Copies of Act in place.	0	0	0	0	1	0
	Develop policy, and strengthen the legal and institutional framework for meteorological services	Early warning systems developed and implemented.	Number of early warning notices issued.	0	4	4	4	4	4

Objectives	Outcome	Outcome Indicators		Baseline	Target				
				2012/13	2015/16	2016/17	2017/18	2018/19	019/20
	Develop and implement awareness programs on the importance and use of meteorological services.	Research on future climate trends and its impacts undertaken	Number of research findings and recommendations disseminated and adopted	0	1	1	1	1	1
	Design, develop and implement early warning systems (sector specific early warning products in support of climate change adaptation.)	Laws and reforms on environmental protection and conservation enacted.	Number of laws and reforms enacted.	0	0	0	1	0	0
Increase the country's resilience and mitigation to climate change for sustainable low carbon development pathway	Monitor and coordinate NCCP actions implementation.	Climate change interventions monitored and coordinated	Number of monitoring report produced annually	0	0	1	1	1	1
	Creating an enabling environment for policy implementation (through capacity building and awareness)	Institutional and human capacity building and awareness campaigns conducted	Number of national and sub-national institutions covered in capacity building and awareness campaigns annually.	<20	20	20	50	70	90
	Representation and participation Uganda delegation in UNFCC meetings (COP) and other related meetings	Uganda is effectively represented in the International, Regional and National Climate Change Fora.	COP Agreement in place	1	1	1	1	1	1
	Conduct climate change researches and baseline for technology transfer.	Research on adaptation and mitigation intervention for focused sectors and technology transfer conducted	Number of research findings on adaptation and mitigation interventions and recommendations disseminated for adaption	0	0	0	3	3	5
	Develop and Implementation of the National Climate Change Law.	National climate change law developed and implemented	Number of sectors implementing the national climate change law	0	0	0	15	30	45
	Establishment, maintenance and manage a national Green-House Gas (GHG) Inventory system.	National greenhouse gas inventory established	Existence of a meg National GHG	0	0	0	1	0	0
	Develop, manage and operationalize a national Monitoring, Report and Verification (MRV) system.	MRV system established	Well-developed MRV system.	0	0	0	1	0	0
	Joint partnership implementation of the	NDC implemented		0	0	0	-	-	-

Objectives	Outcome	Outcome Indicators		Baseline	Target				
				2012/13	2015/16	2016/17	2017/18	2018/19	019/20
	National Determined Contributions (NDC) actions								
	Joint partnership implementation and demonstration of national adaptation programs(NAPAs) of actions interventions and plans (NAPs)	National adaptation intervention actions piloted and demonstrated at field level in select ecosystems.	No of districts piloted with adaptation inventions for scale up	4	0	0	4	4	4
	Conduct national and sub national climate change vulnerability analyses.	National and sub national vulnerability assessments conducted	Number of vulnerability assessments conducted (1 national by 2018 and 4 for district annually)	0	0	0	1	4	4
	Mainstream climate change into relevant sector policies, strategies, programs, budgets, work-plans and reports.	Climate change mainstreamed into relevant sector plans and budgets	Number of sectors (MDAs) with plans and budgets mainstreamed with climate change	0	<2	35	50	50	80
	Develop and implementation a dynamic climate changes Information Management System (IMS).	Information Management System (IMS) developed	Well IMS developed and operational	0	0	0	0	1	0
	Develop and maintain a robust and up-to-date climate change Knowledge Management System (KMS).	Climate change Knowledge Management System (KMS) established	Existence of a functional dynamic KMS	0	0	0	0	1	0
Increase mitigation and adaptation (afforestation and reforestation and sustainable management) actions.	Develop countrywide community based and institutional tree planting initiatives	Forest cover increased	Number of trees seedlings sold to the public(Million)	4.044	12	12.5	13	13.5	14
			Number of forest management plans developed	65	100	200	300	400	506
	Promote sustainable development of commercial forest plantations and industry including value addition.	Natural forests on protected and private land restored.	Area (Ha) of forest plantations established by NFA.	13,450	5,000	5,000	5,000	5,000	5,000
	Promote implementation of sustainable management of forests through restoration of natural forests on protected and private land	Research and development in forestry promoted.	Number of research findings and recommendations disseminated and adopted for forestry.	-	3	3	3	3	3

Objectives	Outcome	Outcome Indicators		Baseline	Target				
				2012/13	2015/16	2016/17	2017/18	2018/19	019/20
	Promote forestry research and development	Increased tourism activity resulting from forestry industry	Number of tourists in the forestry industry	0	150	200	220	230	250
	Develop markets for forest products and services	Forest development in urban context enhanced	Length of trees planted along avenues in towns/municipalities (Km)	0	10	10	10	10	10
	Develop a National REDD+ Strategy and costed action plan	National Forest Monitoring System (NFMS)	A functional National Forest Monitoring System (NFMS) in place	0	0	0	0	0	1
	Develop a Forest Emissions Reference Level and a Forest Reference Level (FERL/FRL)	A Forest Emissions Reference Level and a Forest Reference Level (FERL/FRL) developed	Emission levels developed.	0	0	0	1	0	0
	Develop a robust and functional National Forest Monitoring System (NFMS) for the monitoring and reporting of the REDD+ activities included in the REDD+ Strategy	A REDD+ strategy and action plan developed	REDD+ strategy in place	0	0	0	0	0	1
	Promote forestry in urban development planning	Urban forestry planning developed	Number of forestry plans developed	0	0	3	2	2	2
	Scale up agro-forestry-based alternative livelihood systems.	Agro forestry based livelihood system developed	Number of forestry livelihood systems developed.	0	1	1	0	0	0
Improve climate change legal and institutional framework.	Establish an appropriate institution for coordinating National Climate Change response.	National Climate Change response institution established.	Number of institutions with climate change response strategy	0	23	23	23	23	23
	Establish an appropriate Legal framework for climate change policy implementation and compliance.	Legal framework for climate change policy implementation and compliance established	The legal framework established	0	0	1	1	1	1
Key Result Areas of Focus Water For Production									
KRAs/Areas of Focus: Water Infrastructure Development - for increased provision and utilization of water for production facilities to enhance production and productivity									
Outcome Level Indicators									
Objectives	**Outcome**	**Outcome Indicators**	**Baseline**	**Target**					
			2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**019/20**	
Increase the provision of water for production facilities.	Increased water storage capacity (cubic meters) for irrigation, livestock, aquaculture and Rural	% increase in potential area under irrigation							
		Cumulative increase in water for production storage capacity	1	1.5	2	3	4	5	

Objectives	Outcome	Outcome Indicators	Baseline	Target				
			2012/13	2015/16	2016/17	2017/18	2018/19	019/20
	Industries	(million cubic meters) created for Livestock						
		Cumulative increase in water for production storage capacity (million cubic meters) for Rural Industries and Aquaculture	27.5	29.1	30.7	32.8	35.4	38
		Percentage of water for production facilities functional	-	0.16	0.32	0.37	0.47	0.53
		Percentage of water for production storage capacity utilized annually.	74	81.0	83.0	85.0	88	90
Increase the functionality and utilization of existing water for production facilities.	Increased Functionality and utilization of existing water facilities.	Percentage of water for production facilities functional	50	60	65	70	75	80
		Percentage of water for production storage capacity utilized annually.	**1**	**1.5**	**2**	**3**	**4**	**5**

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
Increase the provision of water for production facilities	Establish new bulk water systems for multipurpose use (dams, water abstraction, transmission and Distribution to different points of use).	New bulk water systems established.	Number of bulk water systems established.	0	11	22	37	56	75
	Protect and manage water catchment areas.	Water catchment areas protected and managed	number of water catchment areas protected and managed	0	8	16	27	41	55
	Increase private sector involvement in the implementation of water for production facilities, including use of the Public-Private Partnership (PPP) arrangement.	Private sector involvement in the implementation of water for production facilities increased.	Number of water for production facilities constructed by the private sector	520	700	900	1,100	1,300	1,500
	Prepare and implement the National Irrigation Master Plan.	National irrigation master plan implemented	Water volumes (cubic meters) for irrigation.	0	3,260	6,520	10,870	16,300	21,750
	Gazette water reserve areas for large dams and involve private operators to strengthen management.	Water reserve areas for large dams gazetted	Number of Water reserve areas for large dams gazetted	0	2	4	6	8	12

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
Increase the functionality and utilization of existing water for production facilities	Establish functional management structures for Water for Production facilities, such as Water User Committees/water boards.	Functional management structures for Water for Production facilities.	Percentage of water for production facilities with functional management structures	78	81	85	89	95	100
	Rehabilitate and maintain existing Water for Production facilities	Water for production facilities rehabilitated and maintained.\	Number of water for production facilities rehabilitated and maintained.	0	2	5	8	11	15
	Strengthen Community Based Management System (CBMS)	CBMS strengthened.	Number of water for production community based management systems trained and functional	0	728	956	1,195	1,441	1,689
	Promote measures undertaken to increase recovery of maintenance costs	Reduced maintenance costs by the Ministry	Percentage maintenance costs contributed by the Ministry.	0	80	75	70	65	60
	Increase the proportion of Water for Production facilities that are managed by the private sector	Valley tanks and dams constructed by private firms.	Number of water for production facilities managed by private firms	520	700	900	1,100	1,300	1,500

Water and Sanitation and Water Resources Management									
KRAs/Area of Focus : (i) Increase access to safe water in rural and urban area, (ii) Increase sanitation and hygiene levels in rural and urban areas and (iii) Increase functionality of water supply systems									
Outcome Level Indicators									
i. Rural Water Supply and Sanitation									
Objectives	Outcome	Outcome Indicators	Baseline	Target					
			2012/13	2015/16	2016/17	2017/18	2018/19	2019/20
Increase access to safe water supply in rural areas.	Increased access to rural water supply.	% of safe rural water supply coverage	65	66	68	71	75	79
	Enhanced functionality of water sources	% of functionality rates of rural water system	84	86	87	89	90	92
Increase access to improved sanitation rural areas.	Increased access to improved sanitation	% of sanitation coverage	71	79	82	86	90	95
ii. Urban Water Supply and Sanitation									
Increase access to safe water supply in urban areas.	Increased access to urban safe water supply.	% of safe urban water supply coverage	70	80	100	100	100	100
	Enhanced functionality of water source	% of urban sanitation coverage	87	95	100	100	100	100
Improve urban sanitation and hygiene services		% of urban sanitation coverage	82	90	100	100	100	100
iii. Water Resources Management									

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
Improve national capacity for water resources management (WRM	Improved use and management of water resources.		Level of waste water discharge	48	55	60	64	6 8	7 0
			Level of surface water abstraction (%)	65	75	77	79	80	8 5
			Level of ground water abstraction (%)	68	75	77	79	80	8 5
Improve water resources planning, and regulation	Increased analytical and quality assurance capability of national and regional water laboratories.		Hydrological year book	0	1	1	1	1	1
			Annual water resources status Reports	0	1	1	1	1	1
Improve water resources monitoring, assessment and information services	Reduction in the proportion of major polluters and abstractors regulated according to the water laws and regulations.		Water quality information system for oil and gas established.	1	1	1	1	1	1
			Water resources maps developed.	0	0	0	0	1	0
Improve water quality management to ensure provision of water of adequate quality for all uses and to address pollution challenges	Increased analytical capability of water resting laboratories and reliable information for water quality management		% of Rural Water samples that comply to national standards	40%	41%	45%	50%	55%	6 0 %
			% of Urban water samples that comply to national standards	50%	60%	70%	80%	85%	9 0 %
			% of wastewater samples that comply to national standards	37%	40%	42%	44%	45%	5 0 %
			% of water bodies with good ambient water quality	40%	40%	40%	41%	42%	4 5 %
Improve protection of Uganda's interests in international waters	Uganda's interests in international waters safeguarded through effective trans-boundary cooperation.		Proportion of polluters (%)	48	55	60	64	6 8	7 0
			Proportion of abstractors (%)	65	75	77	79	80	8 5
	Improved institutional management to regulate catchment levels.		No. of the Basin Report.	0	1	1	1	1	1
	Reduced over exploitation on water bodies.		Proportion of water abstractors regulated (%)	65	75	77	79	80	8 5 %

Output Level Indicators										
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**						
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**	
Output Level Indicators										
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**	**Target**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	
i. Rural Water and Sanitation										
Increase access to safe water supply in rural areas	Construct, operate and maintain appropriate community water supply systems in rural areas.	Access to rural water supply Increased	No. of water facilities constructed by technology	1,794	1,800	1,850	1,900	2,000	2,050	
	Target investments in water stressed areas abstracting from production wells as well as large GFS where appropriate to serve the rural areas.	access to rural water supply Increased	No. of water facilities rehabilitated by technology	1,520	1,600	1,550	1,500	1,400	1,300	
	Promote and scale up rainwater harvesting at household, public institutions and community level	Rainwater harvesting interventions promoted	No. of rainwater harvesting interventions promoted.	1,324	300	400	500	500	500	
	Promote WASH humanitarian preparedness and response to avert possible outbreaks of water related diseases especially in settlements for poor communities and as well as refugees and displaced persons.	water quality Improved	% of rural sanitation coverage	82	90	100	100	100	100	
			% of households accessing safe water.	0	50	55	60	65	70	
	Improve functionality, sustainability and resilience of water supply systems in rural areas.	Sustainable and functional water facilities	No. of functional Water User Committees.	29,292	30,000	30,050	30,100	30,200	30,300	
	Promote Public Private Partnership arrangements to increase accessibility of water sources		Number of functional water facilities.	76,190	76,200	76,300	76,500	76,800	80,000	
Increase access to improved sanitation rural areas. Increase access to safe water supply in urban areas	Strengthen collaboration amongst the institutions responsible for sanitation activities (MoH, MoES, MWE, LGs)	Enhanced collaboration amongst the institutions responsible for sanitation activities (MoH, MoES, MWE, LGs)	Number of coordination and collaboration meetings held.	6	6	6	6	6	6	
	Implement demand led sanitation and hygiene (Community Led Total Sanitation and sanitation/social marketing).	Hygiene and sanitation practices promoted.	% of triggered villages declared Open Defecation Free (ODF)	50	60	65	70	75	80	
			Number of hygiene and sanitation campaigns held	8	8	8	8	8	8	

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
	Modernize solid waste management and treatment in the rural growth centres and fish landing sites.	Sewerage and waste connections to the main sewer line.	Number of septic tanks connected to the main sewer line.	0	10	13	17	20	23
	Promote appropriate sanitation technologies	Sanitation facilities established.	Number of sewerage disposal and treatment methods	5	5	6	6	7	8
		Functional urban water systems	Percentage functionality of urban water systems.	87	95	100	100	100	100
ii. Urban Water Supply and Sanitation									
Increase access to safe water supply in urban areas.	Construct, operate and maintain piped water supply systems in small towns and urban areas country wide.	Increased access to urban safe water supply.	No. of piped water schemes constructed	0	41	30	47	52	60
			No. of households connected to piped water schemes	0	36,000	30,000	38,000	40,000	42,000
			No. of public stand posts	0	200	200	200	200	200
	Strengthen Operation and Maintenance, asset management and regulation for the urban water systems.	Functional urban water system	No. of active water management boards	309	376	443	510	587	654
	Improve the enabling environment for private water operators and reform the public utility model.	Increased participation of the private operators	No. of private water operators Regulations and guidelines issued	20	25	30	35	40	45
	Increase water service coverage with emphasis on the Greater Kampala Metropolitan Area (GKMA) taking into consideration environment and climate change among others.	Water and sewerage services coverage widened	Number of households with piped water in GKMA.	214,421	226,336	238,251	250,167	262,082	273,997
			Number of households connected to sewer system in GKMA.	9,283	9,434	9,592	9,759	9,914	10,072
			Length of water shortage in GKMA	3	3	3	2	2	2
			No. of public stand posts	4,647	4,683	4,726	4,774	4,814	4,856
			Proportion of unaccounted for water	34.0	33.4	31.9	30.7	30.0	29.5
Improve urban sanitation and hygiene services Increase access to safe water supply in urban areas	Intensify collaboration among Ministry of Water and Environment, Ministry of Health and Local Governments.	Enhanced collaboration amongst the institutions responsible for sanitation activities (MoH, MoES, MWE, LGs)	No. of collaboration meetings	2	2	2	2	2	2

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
	Increase sewerage connections in towns with sewerage systems and develop new infrastructure, including satellite sewerage systems in the Greater Kampala Metropolitan Area.	Sewerage system expanded	No. of households connected to sewer lines	12,132	12,328	12530	12,749	13,004	13,264
			No. of towns with sewerage systems	14	16	16	16	16	16
			No. of satellite sewerage systems in GKMA	3	3	3	5	5	5
	Develop Smart Incentive Schemes and intensify Sanitation Marketing for increased household investments in sanitation.	Smart Incentive Schemes developed and promoted for increased household sanitation	No. of households connected to sewer line	12,132	12,328	12,533	12,749	13,004	13,264
	Construct, operate and maintain a cluster of Faecal Sludge Management Treatment Systems while promoting private sector services for sludge collection and disposal.	Sludge Management Treatment Systems constructed and operated	No. of sludge management systems established	0	04	04	04	08	08
			No. of functional sludge management systems	05	09	13	17	25	33
	Strengthen law enforcement bodies with regards to Sanitation and Hygiene.	Sanitation and hygiene enforcement systems in place.	Number of law enforcement personnel trained on Hygiene and sanitation.	0	25	35	42	50	60
ii. Water Resources Management									
Improve national capacity for water resources management (WRM)	Increase use of Integrated Water Resource management approaches in the planning, management and development of water resources	Catchment management plans in place and being used	A total number of catchment management plans in place and being used	5	10	14	16	18	20
		Actions in catchment management plans being implemented satisfactorily by relevant stakeholders	% of the actions in catchment management plans being implemented satisfactorily by relevant stakeholders	0	30	40	50	60	70
	Develop and review legal and institutional framework for WRM	Legal and institutional framework for WRM reviewed and developed.	Number of amendments to Legal and institutional framework for WRM approved by government	0	1	2	2	2	2
	Integrate catchment management plans and implement identified climate change (CC) adaptation measures	Catchment Management Plans integrated and identified climate change	% of climate change adaptation measures in the CMPs implemented.	5	30	35	40	50	60

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
		(CC) adaptation measures implemented.	No. of catchments in which CC adaptation measures targeted at reducing vulnerability are implemented.	3	7	10	14	16	18
	Establish a Water Resource Institute for in-country human resource capacity development for water resources management	A Water Resource Institute for in-country human resource capacity development for water resources management established.	A Water Resource Institute in place.	0	30	50	70	85	100
Improve water resources planning, and regulation	Improve the assessment and evaluation of permits for various water uses and use of other tools for water resources regulation.	assessment and evaluation of permits for water uses improved	No. of permits issued for various water users	100	180	200	220	240	260
	Increase compliance monitoring and enforcement based on the compliance and enforcement strategy (2010)	Compliance to waste water discharge and water abstraction permits increased	% increase in compliance to waste water discharge permits	48	55	61	68	76	84
			% increase in compliance to water abstraction permits	57	74	82	90	94	97
	Increase the proportion of major polluters, abstractors regulated according to the water laws and regulations	Proportion of major polluters, abstractors regulated according to the water laws and regulations	% of major polluters/ abstractors regulated according to the water laws and regulations	50	60	65	70	75	80
	Promote dam safety and reservoir regulation for large water reservoirs and water bodies	Major water reservoirs and water bodies that are managed and regulated according to the water laws and regulations	% of major water reservoirs and water bodies that are managed and regulated according to the water laws and regulations	33	56	61	67	74	81
		Water Allocation Tool for optimizing hydropower generation on the Nile developed and operationalized	% of Water Allocation Tool for optimizing hydropower generation on the Nile developed	0	20	40	60	80	100

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
Improve water resources monitoring, assessment and information services	Establish a national water resources information system and increase use of water resources information for integrated water resources management, early warning and decision making	National Water Resource Information Centre established.	Number of people accessing water resource information.	0	1	3	4	5	5
			Number of national water quality status/outlook report prepared and disseminated	0	1	1	1	1	1
			% water testing laboratories engaged in Inter laboratory testing and results are evaluated	10	50	80	100	100	100
	Upgrade water resources management tools to include real-time data capture using remote sensing and telemetry	Water resource management tools upgraded	Level of upgrade of management tools	0	25%	50%	100%	100%	100%
	WRM data processed and packaged appropriately for the public and private users	Water resource monitoring, assessment and information provided.	%age of data available for dissemination.	30%	50%	80%	100%	100%	100%
	Maintain functional water resources monitoring networks		% water monitoring stations that are fully operational and providing good quality data	60	80	100	100	100	100
	Provide in-country water security safeguards	In country water security safeguards provided.	Bi-annual Water Resources Status Report produced and widely disseminated.	0	1	0	1	0	1
Improve water quality management to ensure provision of water of adequate quality for all uses and to address pollution challenges	Review legal and institutional framework for Water Quality Management;	Relevant policies, regulations and standards developed	Number of policies, regulation, standards and guidelines developed/reviewed	2	2	2	3	3	3
	Continuous increase analytical and quality assurance capability of national and regional water laboratories to address emerging water quality issues	Increased analytical and quality assurance capability of national and regional water laboratories to address emerging water quality issues	Number of water and waste water samples receive and tested annually	1,500	2,000	2,500	3,000	4,000	5,000
	Increase use of water quality information for integrated water resources management	Improved communication and sharing of information among stakeholders	Water Quality Status report prepared and disseminated	0	0	1	1	1	1

Output Level Indicators									
Objectives	**Intervention**	**Output**	**Output Indicators**	**Baseline**					
				2012/13	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**19/20**
	Establish systems to provide oversight quality assurance for water supply services and wastewater management	Established systems to provide oversight quality assurance for water supply services and wastewater management	% of water and wastewater samples from point of collection complying with standards	40%	42%	45%	50%	55%	60%
	Increase use and dissemination of water quality information for early warning and decision making	Increased use and dissemination of water quality information for early warning and decision making	Number of remote sensing/on-line water quality information systems for monitoring oil and gas activities established & operated	0	1	1	1	1	1
	Establish risk-based systems to support efficient water quality management	Established risk-based systems to support efficient water quality management	Number of water and wastewater systems with established and operational safety plans	0	0	0	10	15	20
Improve Uganda's interests in international waters	Develop and operationalize a national policy and strategy for management of International Waters	National policy and strategy for managing international waters established.	An operational policy in place.	0	1	1	1	1	1
	Participate and fast-track benefits from the Nile Basin Initiative multilateral agreements	Regional cooperation enhanced.	Number of multi-lateral agreements signed.	0	0	0	1	0	0
	Promote regional cooperation for equitable and reasonable utilization of the shared water resources	Regional cooperation enhanced.	Number of trans boundary cooperative projects under implementation	4	5	6	8	8	10

Annex 3. Urban Water Supply Schemes' Investments Requirements - 2040

No	District	Scheme/Town	Current Population Served	Total Population un served	Population un served (2040)	Investment Gaps/Requirements	Remarks /Un served Villages/Areas
1	Buikwe	Buikwe WSSS	30,514	750	1,617	291,139,821	Masdye, Kyambala
		Nkokonjeru WSSS	35,720	6,050	13,047	2,348,527,890	Kikwaya, Namali, Mayilikiei, Klemba, Bukesa, Bwira
		Najjembe WSSS	4,890	2,000	4,313	776,372,856	Kikagazi, Dongola
		Nangowe WSSS	1,385	600	1,294	232,911,857	Nangowe T/Centre
		Senyi WSSS	2,340	750	1,617	291,139,821	Senyi T/Centre
		Nangunga-Ngogwe	1,860	900	1,941	349,367,785	Ngogwe T/Centre
		Matale	1400	600	1,294	232,911,857	Matale T/Centre
		Katete	1,250	700	1,510	271,730,500	Katete T/Centre
2	Butambala	Bulo WSSS	6,800	1,500	3,235	582,279,642	Bule, Bulo, Butawuka, Kizzikibi, Kyerima, Nakatooke, Watangalala
		Kibibi WSSS	10,925	10,000	21,566	3,881,864,282	Butata, Kigato, Lugoye-Lubugo, Simba-B, Bumulaze
3	Bulisa	Bullisa WSSS	15,000	13,000	28,036	5,046,423,566	Kabulo, Kijangi, Nyapeya
		Wasenko WSSS	10,000	18,000	38,819	6,987,355,707	Kikoke, Kirama, Bikongolo
		Butiaba WSSS	9,100	800	1,725	310,549,143	Kawebanda
		Biiso WSSS	7,000	1,600	3,451	621,098,285	Kihuyra, Kalegeja
		Ngwedo	1,200	1,200	2,588	465,823,714	Ngwedo TC
4	Bukomansimbi	Bukomansimbi WSSS	35,720	3,450	7,440	1,339,243,177	Kasebwera, Kabulunga, Buyembe, Mburire, Lukuku
5	Buvuma	Kekeje WSSS	600	200	431	77,637,286	Kekeje T/Centre
		Buvuma	4,500	500	1,078	194,093,214	Kitamilo, Kyanamu, Magyo, Lubale
6	Gomba	Maddu WSSS	3,600	3,950	8,519	1,533,336,391	Kyamuyisa, Kyakabusolo, Kyamabale, Kyamuwanga, Kawala, Lumanyo
7	Kalungu	Kyamulibwa WSSS	9,580	8,800	18,978	3,416,040,568	Kyamulibwa LC, Maguluka, Bulwada, Kitoosa, Bakijululu, Kitemi, Busoga A
8	Kayunga	Nazigo WSSS	13,000	2,300	4,960	892,828,785	Kinyala, Kawonawo, Nateta
		Kayunga WSSS	17,800	12,000	25,879	4,658,237,138	-----
		Kangulumira WSSS	25,000	2,700	5,823	1,048,103,356	Kizawula, Kibira, Makula, Kisega -Mwolola, Nakatundu -Mwolola
		Busaana	2,100	600	1,294	232,911,857	Kibuzi
		Suuka	1,350	6,000	12,940	2,329,118,569	Suuka T/Centre
		Kanjuki	1,300	550	1,186	213,502,535	Kanjuki T/Centre

No	District	Scheme/Town	Current Population Served	Total Population un served	Population un served (2040)	Investment Gaps/Requirements	Remarks /Un served Villages/Areas
		Kawuku	1,420	1,000	2,157	388,186,428	Kawuku T/Centre
		Ntenjeru	2,000	1,200	2,588	465,823,714	Ntenjeru T/Centre
9	Kalangala	Kisaba GFS	3,200	1,200	2,588	465,823,714	Kisaba landing site
		Kachungwa WSSS	1,800	1,500	3,235	582,279,642	Kachungwa landing site
		Lujjabwa WSSS	1,600	800	1,725	310,549,143	Lujjabwa landing site
		Namisoke WSSS	2,800	1,000	2,157	388,186,428	Namisoke landing site
		Jaana WSSS	1,500	900	1,941	349,367,785	Jaana landing site
		Kawafu WSSS	1,500	800	1,725	310,549,143	Kawafu landing site
		Kitobo WSSS	7,000	500	1,078	194,093,214	Kitobo landing site
		Misonzi WSSS	8,000	500	1,078	194,093,214	Misonzi landing site
		Kachanga WSSS	6,500	2,500	5,391	970,466,070	Kachanga landing site
		Ttubi WSSS	1,200	800	1,725	310,549,143	Ttubi landing site
		Kasekulo WSSS	900	300	647	116,455,928	Kasekulo landing site
		Senero GFS	1,200	600	1,294	232,911,857	Senero landing site
		Lutoboka GFS	1,100	650	1,402	252,321,178	Lutoboka landing site
		Mweena WSSS	8,500	500	1,078	194,093,214	Mweena landing site
		Town council piped WSSS	28,000	3,000	6,470	1,164,559,284	Kalangala T/Council
		Kagoonya WSSS	4,000	2,500	5,391	970,466,070	Kagoonya landing site
		Mulabana WSSS	1,350	600	1,294	232,911,857	Mulabana landing site
		Lwabaswa WSSS	7,000	3,000	6,470	1,164,559,284	Lwabaswa landing site
		Nakibanga WSSS	1,380	800	1,725	310,549,143	Nakibanga landing site
		Kasisa WSSS	700	200	431	77,637,286	Kasisa landing site
		Bumangi WSSS	1,420	750	1,617	291,139,821	Mulole landing site
		Mulole WSSS	1,150	800	1,725	310,549,143	Mulole landing site
		Bwendero WSSS	1,200	680	1,466	263,966,771	Bwendero landing site
10	Kyankwanzi	Ntwetwe WSSS	9,800	3,400	7,332	1,319,833,856	Kadindura, Ntuti, Buyondo, Kitangara
		Kikonda WSSS	600	500	1,078	194,093,214	Kikonda T/Centre
		Political Institute	900	1,000	2,157	388,186,428	Kayaanja, Lusozi, Lubiri, Kyamukweya, Banda
		Bukwiri WSSS	3,500	2,000	4,313	776,372,856	Butemba, Bukwiri
11	Kiboga	Lwamata WSSS	10,200	8,000	17,253	3,105,491,425	Kibulala, Ssingo, Nakasengere
		Kiboga WSSS	28,000	2,500	5,391	970,466,070	Musalaba, Kyrinda
		Bukomero WSSS	18,700	2,200	4,745	854,010,142	Kikubu, Katera

No	District	Scheme/Town	Current Population Served	Total Population un served	Population un served (2040)	Investment Gaps/Requirements	Remarks /Un served Villages/Areas
		Kyankole WSSS	400	250	539	97,046,607	Kyankole Village
12	Lyantonde	Kalilo WSSS	4,000	1,000	2,157	388,186,428	Kenyerere, Kanyogoga, Nabigoye, Kyabatsita
		Kasagama WSSS	5,241	800	1,725	310,549,143	Kirindumura, Kasagama
		Kinnuka WSSS	4,279	1,200	2,588	465,823,714	Kawungu, Rwemikooma, Kawungu, Nakasozi, Kyengeza, Kyensema
13	Lwengo	Kyazanga WSSS	22,000	8,800	18,978	3,416,040,568	Luyembe, Mpama, Lwentare, Lwera, Kagoonya,Nakatete, Kambulala, Maguluka, Bulwanda,Kitoosi, Bakijulu, Kitemi
		Mbirizi WSSS	38,590	11,700	25,232	4,541,781,209	Lwengo T/Centre, Kyentume, Bwami, Nyenje, Dwaniiro, Mbirizi Kyalo, Kigusa, Kibuuloka, Kanyagoga
		Kinoni WSSS	11,790	9,900	21,350	3,843,045,639	Bunyere, Busubi, Kabagala, Kiwangala, Buziira Nduru, Kabuyo
		Nkoni WSSS	4,238	10,950	23,615	4,250,641,388	Kasana -Nzinzi, Kakunyu, Kyoko, Nabyewanga, Kingo, Kabwami, Kabulasonke
14	Masindi	Bwijyanga WSSS	4,500	550	1,186	213,502,535	Kyamukundume, Kitamba
		Bujenje WSSS	3,600	1,200	2,588	465,823,714	Ikoba, Kiryamasasa
		Kabango WSSS	6,789	5,500	11,861	2,135,025,355	Nabyeya, Bwinamira, Zebra
		Kyatiri WSSS	4,871	800	1,725	310,549,143	Kyambogo, Kyabakama, Kyabakambi , Kyatiri T/Centre
15	Masaka	Kamuzinda	2,025	2,000	4,313	776,372,856	Kyabagu, Kitofali, Kyanakuka, Bulembe, Kyamula, Kahuuma
16	Mityana	Busunjju WSSS	15,000	1,260	2,717	489,114,899	Nalukwagula, Kikunyu, Bridge Way
17	Mpigi	Bujuuko WSSS	10,000	14,100	30,408	5,473,428,637	Kisamula, Buyala, Nalubugo, Nakamwanyi, Nansese, Bujjuko-Kasana, Senene-Kwata
		Katende WSSS	2,480	2,800	6,038	1,086,921,999	Kavule, Kiringente, Nakirebe
		Jezza -Mudduma WSSS	3,950	10,000	21,566	3,881,864,282	Buwalula-Kamuli, Nvuba, Jjeza B, Tiribogo
		Kamengo WSSS	3,360	13,000	28,036	5,046,423,566	Ndodo, Kiswa, Butoolo, Nabbuzi, Magejjo
		Kituntu WSSS	1,600	600	1,294	232,911,857	Kituntu T/Centre
18	Mukono	Nakifuma WSSS	15,600	2,100	4,529	815,191,499	Kaama, Nakulabye
		Luragwe WSSS	1,204	1,700	3,666	659,916,928	Bulebi, Kyizi, Kyondo, Lulagwe
		Koome WSSS	7,000	500	1,078	194,093,214	Koome Landing site
19	Nakasongola	Migeera WSSS	11,000	350	755	135,865,250	Walusi, Kyagongolo
		Nakasongola WSSS	54,500	6,700	14,449	2,600,849,069	Sasira, Muhungwe, Karubanga, Wabiyonyi C, Matuga,

No	District	Scheme/Town	Current Population Served	Total Population un served	Population un served (2040)	Investment Gaps/Requirements	Remarks /Un served Villages/Areas
							Town Council B, Kibego
		Kakooge WSSS	8,874	760	1,639	295,021,685	Butemba, Kitaswa, Kisamba, Kyabukonyogo, Kyamalibye
		Katuugo WSSS	8,749	8,200	17,684	3,183,128,711	Kabale, Kilohoza, Kibira, Kyamasanda, Mulunjomu
		Kibuye	1,800	300	647	116,455,928	Kikoli, Kibuye T/Centre
		Kalungi	1,200	3,700	7,979	1,436,289,784	Kanjaama, Kisenyi, Mahiriti, Kalungi T/Centre
		Rwampanga	2,500	2,000	4,313	776,372,856	Lwampanga T/Centre
20	Rakai	Kasensero WSSS	4,600	1,000	2,157	388,186,428	Bigera Zone, Mirigwe Zone, Magango Cell, Misonzi Zone
		Kakyanga WSSS	4,800	4,450	9,597	1,727,429,605	Butembe, Kajaguzo, Kyengeza, Kyekalera, Kabasumba
		Lwanda WSSS	9,463	3,268	7,048	1,268,593,247	Kakooma,Kiyovu, Bitabago, Butula, Kisimbanyilili
21	Sembabule	Lutunku WSSS	3,500	10,400	22,429	4,037,138,853	Kyabi, Mbuye, Lugususulu
		Matete WSSS	14,754	8,040	17,339	3,121,018,882	Kasana T/ Centre, Kasana- Pidda, Kambula, Kayunga, Katimba, Manyama, Kibiira
		Ntuusi WSSS	4,368	3,700	7,979	1,436,289,784	Lwebirago, Lumegere, Kirama, Kyarusonsomozi
22	Wakiso	Masulita WSSS	10,560	11,919	25,704	4,626,794,037	Katikamu, Kabaale, Kanzise, Nakatunda, Kyondo Kibone
		Nakawuka WSSS	15,987	8,000	17,253	3,105,491,425	Mpumudde-Bbaya, Katwe-Kasuku, Kateremwa, Sanda, Bulyanzi, Buwuya
		Namayumba WSSS	5,300	4,284	9,239	1,662,990,658	Mika, Kasanga, Kivule, Naguru
		Kasanje WSSS	4,768	2,200	4,745	854,010,142	Ssazi, Mako, Bulumbu
		Bukalango	3,500	8,700	18,762	3,377,221,925	Lugaye, Kikubampanga, Bukalango Lower, Kikajjo, Kagala Hill, Kiwumu
Total			764,794	334,861	722,158	129,988,495,519	

Annex 4. NRM Manifesto Commitments for the Period of 2016-2021

Implementation of the commitments are to be undertaken by the following institutions: Ministry of Water and Environment (MWE) through Forestry Services Support Department (FSSD), Wetland Management Department (WMD), Environment Services Support Department (ESSD), Water for Production Department (WfP), Rural Water Supply and Sanitation Department (RWSSD), Urban Water Supply and Sanitation Department (UWSSD); Directorate of Water Resources Management (DWRM); National Environment Management Authority (NEMA); National Forestry authority (NFA); Sawlog Production Grant Scheme (SPGS); National Water and Sewerage Corporation (NWSC) and Uganda National Meteorological Authority (UNMA).

Environment and Natural Resources Sub-Sector

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
Natural Resources	Increase the country's forest cover from 10% to 15% by 2021.	1. Increase involvement of the population in tree planting through the greening Uganda program by planting 100 million trees. • Step up the supply of free and/or subsidized tree seedlings • Introduce tree planting exercise on all national holidays. • Sensitize and mobilize people to plant trees including those who want to invest in tree planting on a large scale. • Support private initiatives in production of tree seedlings	14.0	14.0	14.0	14.0	14.0	MWE/NFA/ FSSD/ SPGS	**All public holidays were gazetted for tree planting by Cabinet. Others are National/International, Forest, Meteorological, Wetlands and Water Day. Trees will be planted in every district and in all secondary and primary schools.**
		2. Continue to implement a phased approach to sustainable forest management through improving low stocked/or degraded natural forests using the landscape approach, strengthen the policing to protect forest reserves and	1.0	1.0	1.0	1.0	1.0		**The operational funds will involve NFA, District Forest Services Staff and Forest Extension Services Staff under Ministry of Water and Environment.**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		forts against illegal activities.							
		3. Review the Forest and Tree Planting Act (2003) with the objective of strengthening forest conservation and tree planting initiatives.	0.2	0.2	0	0	0	NFA/FSSD	**The Ministry is in final stages of gazetting the National Forest and Tree Planting Act. However, the Act in its current state suffices to conserve forest and promote tree planting initiatives that will strengthen enforcement of tree planting.**
		4. Ensure re-surveying and demarcation of external boundaries of 12,000km under 506 Central Forest Reserves (CFRs) with permanent concrete pillars to effectively secure the integrity of the Central Forest Reserves	2.4	0.0	0.0	0.0	0.0	NFA/FSSD	**NFA has 10,000 Km, while Local Forest Reserves have 2,000 Km**
		5. Invest in plantation development at a rate of 2,500 Ha per year while maintaining the existing and subsequent forest crops	10.0	10.0	10.0	10.0	10.0	NFA/FSSD	**UGX 4m is required per Hectare to take care of planting materials and extension support and supervision.**
		6. Strengthen the policing to protect forest reserves and forests against illegal activities	2.5	2.5	2.5	2.5	2.5	NFA/FSSD	**Facilitate the EPFs, technical and political staff and procure pillars for boundary demarcation.**
		7. Finalise the RED+ Strategy by 2018 with aim of addressing climate change effects through reducing emissions from Deforestation and Forest Degradation (REDD+).	9.0	9.0	9.0	9.0	9.0	FSSD	**Once the strategy is ready, it will be used to mobilise/access carbon financing for REDD+ in the country.**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
	Increase the country's wetlands cover from 10.9% to 12% by 2021.	8. Continue with demarcating wetland boundaries with concrete pillars and beacons and ensure gazettement targeting 2880Kms of boundaries of major critical wetlands in the districts of Masindi, Hoima, Arua, Amuria, Kaliro, Gulu, Dokolo, Luwero, Iganga, Mbale, Kibuuku, Sheema, Isingiro, Buyende, Namutumba, Kisoro, Luweero, Budaka.	1.00	1.00	1.00	1.00	1.00	MWE/ WMD	**A total of 983.5Kms of critical wetlands boundaries have been demarcated with pillars and beacons in Gulu, Lira, Mbale, Bushenyi, Jinja, Iganga, Sheema, Buhweju, Alebtong, Kabarole, Wakiso, Arua.**
		9. Up scale the restoration of at least 19,480Ha of degraded section of wetland to maintain their integrity in Masindi, Hoima, Arua, Kaliro, Gulu, Dokolo, Luwero, Iganga, Mbale, Kibuku, Sheema, Isingiro, Buhweju, Buyende, Namutumba, Pallisa, Kabale, Kisoro, Amuria	1.00	1.00	1.00	1.00	1.00	MWE/ WMD	**Restored 4616.9 Ha of degraded section of wetland over the last 4 years to maintain their integrity to store carbon in the peat soil and maintain water quantity and quality in the districts of Kumi, Kampala, Kasese, Aleptong, Pallisa, Ngora, Bukedea, Manafwa, Buhweju, Masaka, Jinja, Kamwenge.**
		10. Sensitize communities on wise use of Wetlands by up-scaling mobilization and training of local communities on wise use of wetlands by identifying wetland resources for value addition and income generation through development of management plans.	1.20	1.20	1.20	1.20	1.20	MWE/ WMD	**A total of 5 wetland frame work; 12 Ramsar sites and 74 site specific wetland management plans have been developed.**
	Enhancing the sustainable Natural Resources	11. Scale up the Municipal Solid Waste compositing facilities	1.80	4.40	4.40	4.40	4.40	NEMA	**The towns of Lira, Soroti, Mbale, Jinja, Mukono, Fort Portal, Kasese, Mbarara, Kabale, Arua, Gulu,**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
	Management for livelihood improvement								**Tororo, Busia, Entebbe, Mityana, Hoima and Masindi have been covered under phase II with solid waste management equipment like skip loaders, and wheel loaders, while the towns of Arua, Masindi and Hoima have been provided with full Clean Development Mechanism Projects.**
		12. Continue with the operationalization of the Environmental Protection Police to enhance compliance monitoring and law enforcement in Forests and Wetlands.	1.50	1.50	1.50	1.50	1.50	NEMA/NFA/ MWE	**So far 150 out of 600 Protection Force have been trained, deployed and supported to ensure compliance monitoring and enforcement as well as the restoration of wetland and forest reserves country wide.**
		13. Review the regulations and guidelines regarding EIAs to avoid long delays and the high fees charged.	0.47	0.56	0.56	0.56	0.56	NEMA	
	Ensuring rational and sustainable utilization, development and effective management of environment and natural resources for socio-economic development of the	14. Increase the functionality of weather and climate monitoring stations	2.96	3.0	2.0	3.08	3.06	UNMA	**The current functionality of weather and climate monitoring stations is 70% and this is to increase to 85%**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
	country	15. Develop and implement weather and climate awareness programs and, early warning products in support of climate change adaptation	1.2	1.2	1.2	1.2	1.2	UNMA	**Currently, regional climate awareness programs are carried out on quarterly basis but the plan is to carry out these programs at district level**
		16. Strengthen research on future climate trends and its impacts and, disseminate to the stake holders	0.18	0.14	0.14	0.06	0.08	UNMA	**Research program is at nucleus stage. It is being expanded and equipped**
Sub Total: Environment and Natural Resources sub-sector			48.21	48.21	48.21	48.21	48.21		
i. Water Resources Management									
Integrated Water Resources	Investment in water resources based on catchment management plans	17. Developing & implementing 20 catchment based management plans in 4 water management zones	4.0	4.0	4.0	4.0	4.0	MWE/ DWRM	**Deconcentrated structures have been established in 4 Water management zones of Victoria, Kyoga, Albert & Upper Nile**
		18. Development & operationalize flood management framework for Kasese, Awoja and Manafwa catchments.	5.0	6.0	6.5	7.6	8.2	MWE/ DWRM	**A draft flood management strategy for selected catchment to be up scaled**
	Promote efficient water use, equitable allocation and protection of the water resources base & associated eco-systems.	19. Establish & operationalise Water Resources Institute	3.5	4.0	5.0	5.0	5.0	MWE/ DWRM	**The Ministry has limited facilities for this program and have been undertaking specialized training of 20 graduates, annually.in the fields of hydrology, hydrogeology, water quality testing & management**
		20. Develop & operate a robust Water use, allocation & regulation tool	2.5	4.0	6.0	3.0	3.0	MWE/ DWRM	**The ministry has allocated UGX 0.5 bn to kick-start the study to develop water allocation tool, assess & guide on Water release and abstraction policy , water storage/ security for hydro-power projects along the**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
									R.Nile.
		21. Promote cleaner production techniques in water use to enhance productivity & efficiency	1.0	1.5	2.5	3.0	4.0	MWE/ DWRM	**The Ministry has been providing technical assistance to micro, small medium enterprises in the manufacturing sector through a public private partnership arrangement to use less for more output and to enhance productivity reduce pollution at source while maximizing profit (Green Business)**
	Water pollution management	22. Maintenance of water bodies including dredging/desilting, cleaning & management of emerging water weeds	2.0	4.5	6.5	5.6	4.5	MWE/ DWRM	**Draft catchment management plan for R. Semliki , strategy for pollution management for inner Murchison bay**
		23. Enforcement of regulations & standards	0.5	1.8	1.5	2.0	2.5	MWE/ DWRM	**The Ministry continues to issue permits in 6 broad areas for surface water abstraction, waste water discharge, ground water abstraction, drilling, and construction & easement certificates.**
		24. Real time/remote sensing technologies for monitoring, assessment & risk management.	2.3	4.8	5.0	6.0	6.5	MWE/ DWRM	**Limited infrastructure exist in terms of water testing laboratories, water monitoring stations/equipment & work stations**
Sub-Total –Water Resources Management			**20.8**	**30.6**	**37**	**36.2**	**37.7**		
ii. Water and Sanitation Infrastructure									
Rural Water Supply and	Increased access to clean and safe water within a radius of 1km	25. Construction of 12 new large Gravity Flow Schemes in Nyarwodho – Phase II (Nebbi), Lirima – Phase II (Manafwa),	20.5	47.2	37.1	24.4	26.5	MWE/ RWSSD	

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
Sanitation	from 65% to 100%.	Bukwo – Phase II (Bukwo), Bududa-Phase II (Bududa), Bukedea (Sironko, Kween, Kapchorwa, Bulambuli), Ogili (Agago), Ntoroko(Ntoroko), Potika (Lamwo), Bwambara-Bugangari (Rukungiri), Orom (Kitgum), Nyamugasani(Kasese), Ngoma – Wakyato (Nakaseke). .							
		26. Rehabilitate and expand 5 water systems in Nyabuhikye and Kikyenkye (Ibanda), Shuuku and Masyoro (Sheema), Lukalu (Butambala), Bitsya (Buhweju) water systems	6.0	9.0	14.6	8.0	9.0	MWE/ RWSSD	
		16. Drill 5,000 boreholes countrywide	2.0	2.0	2.0	2.0	2.0	MWE/ RWSSD	
		27. Large diameter wells developed in water stressed parts of the country (50 BH per year) covering Karamoja region, the low-lying, dry expanses of Isingiro, Ntungamo, Kiruhura, Yumbe, Zombo, Koboko, Moyo, Kiboga, Kyankwanzi, Nakaseke, Nakasongola, Rakai, Buyende and Kaliro districts.	3.0	3.0	3.0	3.0	3.0		
		28. Bulk transfer of water to water stressed areas.	16.5	16.5	16.5	16.5	16.5	MWE/ RWSSD/WFP	
		29. Initiate construction of 2,060 boreholes and install with solar powered mini piped water	1.5	3.4	4.5	4.5	4.5	MWE/	**Installation of 60 solar powered mini piped water schemes is on-**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		schemes with taps to villages.						RWSSD	**going.**
	Improving functionality of rural water sources.	30. Review policy on Operation and Maintenance with a view of Government taking over the role of repairing water sources.	1.0	0.50	0	0	0	MWE/ RWSSD	
Sub Total: Rural Water and Sanitation			**50.5**	**81.6**	**77.7**	**58.4**	**61.5**		
Urban Supply Water & Sewerage	Improve water coverage from 80% to 100%	31. Complete construction of on-going piped water systems in 19 Towns in Bugongi (Sheema), Bukakata (Masaka), Bukwo, Buliisa, Dokolo, Kagoma (Jinja), Kaliro, Kalongo (Agago), Ocapa & Kyere (Serere), Luuka, Midigo (Yumbe), Ntungamo, Kyalubungu (Isingiro), Nyeihanga (Mbarara), Okoro (Arua), Ovujo (Maracha), Pajule (Pader) and Sanga (Kiruhura).	17.86	8.43	4.215	2.15	0	MWE/ UWSSD/ NWSC	**Ovujo, Pajule, Dokolo and Ntungamo substantially completed. While Bukwo is at 80%, Kyere (45%), Luka (92%) Ochapa (40%), Kagoma (82%), Bukakata (65%).**
		32. 10 new town piped water systems constructed in Kapelebyong (Amuria), Kasagama (Lyantonde), Kayunga, Kinuuka (Lyantonde), Kyamuhunga (Bushenyi), Mpara (Kyegegwa), Nakasongola, Namagera (Jinja), Nyahuka (Bundibujo), Nakapiripirit, Iziru (Jinja), Busede-Bugobya (Jinja), faecal sludge treatment plant (Kamuli).	25.16	12.08	6.04	3.02	0	MWE/ UWSSD	**Designs are on-going**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		33. 33 piped water supply systems designed in Aboke (Kole) Buseruka (Hoima), Lwanika (Bugiri), Amuru TC, Buyala (Jinja), Mukura (Kumi), Anyeke (Apac), Kabura (Mbarara), Nakaloke (Mbale), Atapara (Oyam), Kagadi (Kibaale), Namaganga (Jinja),Awach (Gulu), Kal (Lamwo), Namasagali (Kamuli), Baale (Kayunga), Kasanda (Mubende), Nazigo (Kayunga), Bala (Kole), Kikingura (Masindi), Nyabweru (Kisoro), Barakala (Koboko), Kitanga (Kabale), Nyakashaka (Buhweju), Bugobya (Jinja), Kyakabadima (Kibaale), Ofwa (Nebbi), Buhimba (Hoima), Kyenda (Mubende), Rwenshaka (Rukungiri), Buliima (Masindi), Lokung (Lamwo), Wobulenzi (Luwero), Bulegeni (Bulambuli) Kotido, Bulambuli-Buyaga (Bulambuli), Nakiperimoru (Kotido), Kacheri-Lokona (Kotido), Kadungulu (Serere), Kibale (Palisa), Kibaale (Namutumba), Namayingo; Barajobi, Olilim & Okwang (Otuke).	62.33	31.16	15.08	7.04	7.00	MWE/ UWSSD	**Designs complete and procurement of contractors on-going**
		34. Designs for 41 new piped water supply systems to small towns completed in the following towns Amudat, Kambuga, (Kanungu), Namwendwa (Kamuli), Barr (Lira), Namwiwa (Kaliro), Binyinyi TC (Kween), Katovu (Lwengo), Ngoma (Nakaseke), Budaka, Kiwoko (Nakaseke), Nyeihanga	397.22	193.15	96.50	48.25	18.25	MWE/ UWSSD	**Designs complete and procurement of contractors on-going**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		Mbarara, Buggadde (Mayuge), Kotido, Bulopa (Kamuli), Kumi/Nyero/Ngora, Okokoro (Maracha), Busolwe (Butaleja), Kyabi (Sembabule), Ovisoni (Arua), Butaleja, Lukaya (Kalungu), Pabbo (Amuru), Buyende, Lumino (Busia), Pacego (Nebbi), Bwondha (Mayuge), Lwemiyaga (Sembabule), Pallisa Gomba, Magodesi (Tororo), Rukungiri municipality, Idudi (Iganga), Musita (Mayuge), Tirinyi-Kibuku, Iki (Budaka), Namagera (Jinja), Zombo TC, Kabwangasi (Pallisa), Namukora (Kitgum).							
	National Water and Sewerage Corporation (NWSC)	35. Finalise construction of sewerage treatment plant in Bugolobi and attendant sewerage collection infrastructure for Nakivubo and Kinawataka catchment area	61.9	14.4	10.2	16.5	27.1	NWSC	**Construction of Lubigi was completed plant fully operational** **-Construction of the Nakivubo Waste Water Treatment & is to be completed by April 2017** **-Kinawataka sewer network construction is in progress expected completion is July 2016.**
		36. Construct 45 public toilets with bathrooms in various location in Greater Kampala	1.634					NWSC	**Facilities under defects liability period by the end of 2016.**
		37. Expansion of piped water system in Greater Kampala to improve water supply. • Refurbish Gabba 1 and 2, (Water supply improvement in Namasuba, Ndejje, Lubowa	192.0	224.1	61.7	55.5	41.2	NWSC	**Gaba I & II & Transmission Main to Namasuba;** **-Construction of the 4 Namasuba**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		Bunamwaya, Nyanama Kisugula, Kyengera and Nsangi) • Water network modelling and master planning and re-zoning • Commence construction works for Katosi Water Treatment plant • WATSAN improvements in Urban poor areas							**Tanks is 92% complete.** **-Water Tightness testing was done for 2 tanks. Gaba 1 filters (8No.) at 82% progress.** **-Gaba II Filters (06No.) at 60% progress the contractor works on one filter at a time to avoid interruption in water supply.** **-Gaba II Clarifiers at 61% progress.9.6kms Gaba-Namasuba transmission main is 95% complete only awaiting pressure tests.**
		38. Urban poor water service provision- pro-poor interventions through construction of at least 3,000 public stand posts (average 600 PSPs per year in the NWSC operation areas	0.226	0.226	0.226	0.226	0.226	NWSC	**-381 PSPs were made in the period July-Dec 2015.** **-Total PSPs are 9,676 out of which 7,545 are active and 2,131 inactive.**
		39. Continue with the rehabilitation and expansion of the existing water supply and sewerage systems in various parts country for improved service delivery in 10 districts. • Gulu, Bushenyi, Arua, Mbale (Under the WMDP) • Masindi/Hoima Albertine Graben Cluster (North) • Kasese/Fort portal Albertine Graben Cluster (South)	26	17.054	154.867	313	251	NWSC	• **Bushenyi; Completed evaluation of tenders. Negotiations were successfully done and the Contract was signed in December 2015.** • **-Arua; Test drilling and pump tests for 13no. Boreholes were completed.30km out of 80km network completed** • **-Geo technical investigations for sewage lagoons completed, earth works have commenced.**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		• Mbarara Masaka South Western Cluster							• **Foundation design for Giligili reservoir was completed & works have commenced.** • **1.4km out of 23km (DN 100-250mm) Sewer network completed.** • **Masindi–Hoima Feasibility and Pre-design is on-going NWSC and expected date for completion of the same studies for Masindi-Hoima & Mbarara-Masaka is June 2018.** • **NB. Funding for Kasese is not available.**
		40. Increase accessibility to water and sanitation services through extension of over 4000 kms (average of 800km per annum) and Mains Extension of 100 kms of sewer mains.	14.0	14.0	14.0	14.0	14.0	MWE/NWSC	• **1,448km of water mains were extended in the FY 2014/15** • **550km extended as at FEB 2016 for the FY 2015/16.** • **Current total network is 9,589kms**
Sub-Total Urban Water and Sewerage Services			**295.76**	**269.78**	**240.99**	**399.23**	**333.51**		
Water for Production	Improve access to WFP and increase cumulative storage from 27.8 to 55MC through construction of large and small water schemes for multipurpose use, including; irrigation, livestock, aquaculture and rural industries:	41. Designs for the 6 large reservoir with a total capacity of 28bn litres of water storage completed in Acanpii dam (Oyam), Namatata dam (Nakapiripirit), Ongole dam (Katakwi), Bigasha dam (Isingiro), Katabok dam (Abim) and Mabira dam (Mbarara).	1.5	1.0	1.0	0.0	0.0	MWE/WFP	**Ongole Dam designed and is currently under construction. Mamatata dam, Mabira and Katabok dams designed waiting for implementation.**
		42. Procure additional construction equipment for construction of valley dams/tanks in Buyende, Kaliro, Kayunga, Masindi, Buliisa and Kyegegwa districts.	1.721	1.721	0.0	0.0	0.0	MWE/WFP	**Procurement for 3 sets of equipment initiated.**
		43. Construction of bulk water supply systems for multi-purpose use in Bukanga (Isingiro), Nyabushozi,	169.893	424.732	424.732	339.786	339.786	MWE/WFP	**Feasibility Studies completed**

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
	Critical activities will include a. Construction of Irrigation Schemes b. Rehabilitation of existing old dams c. Reconstruction of irrigation schemes d. Setting up innovative technologies.	Kikatisi, Sanga ,Kanyalyeru and Kazo (Kirihura), Kakuuto and Koochi (Rakai), Kabula (Lyantonde), Nakasongola, Nakapiripirit, Moroto, Katakwi and Amuria districts.							
		44. Undertake detailed feasibility studies and designs of 12 irrigation schemes in Albetong), Namalu (Nakapiripirit), Mobuku II (Kasese), Amutur (Bukedea), Doho II (Butaleja), Rhino camp; Wadelai (Nebbi/Arua), Biiso (Buliisa), Kateete (Kanungu), Kibimba-Katonga (Gomba/Mpigi/Butambala), Pabo (Amuru), Tochi (Oyam), Musamya (Kayunga).	3.492	3.492	0.0	0.0	0.0	MWE/WFP	**Feasibility studies for 12 schemes and designs for 5 schemes are due for completion. Construction of 5 schemes; Wadelai in Nebbi, Tochi in Oyam, Mubuku II in Kasese, Doho II in Butaleja and Ngege in Kween will commence during manifesto implementation period.**
		45. Rehabilitate 16 dams in Teso region including Ongole dam	7.671	28.768	28.768	28.768	28.768	MWE/WFP	**Technical assessment done for 52 dams**
		46. Rehabilitate 104 dams in the Cattle corridor	159.567	159.567	159.567	159.567	159.567	MWE/WFP	**Feasibility studies on-going, construction to commence during manifesto implementation period.**
		47. Reconstruct Odina Irrigation Scheme in Soroti, Kiige Irrigation Scheme in Kamuli, Rwegaaju Irrigation Scheme in Kabarole district.	27.0	22.8	28.1	0.0	0.0	MWE/WFP	**Feasibility and designs done for Rwenganju irrigation scheme in Kabarole district and construction is to commence during implementation period.**
		48. Invest in development of water for industrial purposes by putting in place the necessary infrastructure to support the re-use of water in industries especially in nuclear and oil	5.0	5.0	5.0	5.0	5.0	MWE/WFP/ DWRM	

Thematic Area	Milestones and Targets in the 2016-2021 NRM Manifesto	Interventions/Commitments	Budget in bn. UGX					Responsible Actors	Status
			16/17	17/18	18/19	19/20	20/21		
		refining industries which require considerable volumes of water for cooling.							
		49. Avail machinery for construction of valley dams /tanks and for drilling boreholes where borehole usage is appropriate to ensure availability of water for the animals and irrigation	1.721	1.721	1.721	1.721	1.721		**To procure 5 sets of equipment**
		50. Provide support to scientists at Makerere University to develop a solar water pump to revolutionise agriculture through affordable irrigation systems.	0.20	0.20	0.20	0.20	0.20		
Sub-Total: Water for Production			377.765	649.001	649.088	535.042	535.042		
Grand Total			**995.505**	**1,049.891**	**929.493**	**733.972**	**703.362**		

Annex 5. Strategic Guidelines and Directives for Uganda to Attain Middle Income Status by 2020

Water Supply and Sewerage Systems to 25 Industrial Parks (Existing & Planned)

Industrial Park(Name)	Planned Interventions
Kampala Industrial Park –Namanve,	• Upgrade the water distribution system within the industrial park(June 2018) • Develop primary water distribution infrastructure from the proposed Katosi sub system (June 2019) • Carry out detailed engineering designs for the sewerage system in Liaison with UIA by December 2017 • Construct sewerage system by December 2019 • Provision of bulk water for industrial use (cooling and cleaning purposes).
Luzira Industrial Park	• Liaise with UIA to undertake detailed engineering design and cost estimates and connect all the industries to the new Bugolobi sewerage Treatment Plant (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Bweyogere	• Undertake detailed engineering design for the sewerage system and have the industrial park connected to the Kinawataka sewerage sub system (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Jinja (Masese industrial Park)	• Review and upgrade water system by Dec 2017 • Undertake detailed engineering design and cost estimates for the sewerage system development and implement interventions (June 2019)
Masaka (Bukakata industrial Park)	• Undertake detailed engineering design and cost estimates(June 2017) • Implement priority investments for WatSan services (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Moroto (Katanga Industrial Park)	• Review and Upgrade the water system by Dec 2017 • Undertake detailed engineering design and cost estimates for the sewerage system development and implement interventions (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Kasese (Mbarara road Industrial Park)	• Review and Upgrade the water system by Dec 2017 • Undertake detailed engineering design and cost estimates for the sewerage system development and implement interventions (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Soroti (Arapai Industrial Park),	• Undertake detailed engineering design and cost estimates for the sewerage system development and implement interventions (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Mbarara (Makenke Industrial park)	• Prioritize this project for downstream and undertake detailed designs and cost estimates(June 2017) • Implement priority investment for WatSan services (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).

Mbale (Doko Industrial Park)	• Secure funding through GoU for downstream investment from Mbale WatSan service expansion (June 2017) • Implement priority investments for WatSan services (June 2019) • Undertake detailed engineering design and cost estimates for the sewerage system development and implement interventions (June 2019). • Provision of bulk water for industrial use (cooling and cleaning purposes).
Mubende, Arua, Gulu, Lira, Nakaseke, Bushenyi, Kabale, Mityana, Iganga, Tororo, Hoima and Kabarole	• Ascertain location and obtain information for WatSan services (Dec 2017) • Carry out detailed engineering and cost estimates (June 2018) • Implement priority WatSan interventions (June 2020). • Provision of bulk water for industrial use (cooling and cleaning purposes).

Encroachment on Forests, Wetlands, River Banks and Lakeshores

Issue	Planned Interventions
Encouraging Encroachers to vacate Forest Reserves given that approximately 120,000 hectares translated as 10% of the Central Forest Reserve land is heavily encroached, causing serious social, economic, environmental and discontent amongst communities.	• Issue an Executive Order is issued to the Uganda Police Force, District Local Governments and Resident District Commissioners to support National Forestry Authority eliminate forest encroachment across the country. • Fund to buy out people settled in Vital Ecosystems- such as Wetlands, natural Forests etc.
Fraudulent titling and grabbing of Land in Central Forest Reserves.	• Investigate the escalating titling/grabbing and fraudulent sale of land in CFRs and ensures cancellation of land titles in Forest Reserves.
Degazzettement of Forest Reserves	• Degazettement of Forest Reserves requires a political decision given that the proposed parts of the forest reserves are heavily encroached and degraded as a result of settlement occasioned by government, urban councils and additional land should be availed for purposes of proposed new development investments.
Take cognisance of private sector contribution towards forest plantation development and convinced that licensing of forest land is as an incentive to forest plantation investments.	• Lift the ban on licensing for tree growing in Central Forest Reserves and comprehensively review the Terms and Conditions of licensing of tree growing in consultation with key stakeholders
Establishment of the Tree Fund, Promotion of Tree Planting, Restoration of degraded forest reserves and Commercial Tree Plantation Development	• Provide additional funding for Community Tree Planting Programme, Restoration of heavily degraded forests and Commercial Tree Plantation development amounting to UGX 8.65 billion annually and ensure the establishment of the proposed Tree Fund as provided in the National Forestry and Tree Planting Act 2003.
Re-surveying and marking boundaries of Central Forest	• Intensify forest boundary re-opening, re-surveying and marking with permanent pillars require additional funding amounting to UGX 30 billion and should form part of and secure the integrity

Reserves	of Central Forest Reserves
Prioritise to restore of wetlands.	• Implementation of the 14th April 2014 Cabinet decision on wetlands. These includes the following:- • Cancellation illegal land titles in wetlands; • Regulation of Land uses activities in wetlands on Private Land; and • Production of the Wetland Atlas. Both Volume 1 and 2 were completed with financial and technical assistance from UNDP and UNEP. • Restoration of degraded wetlands. At least the wetlands in the Lake Victoria and Kyoga Basin are planned for restoration. • Establishment of a Wetland Fund for the compensation of eligible registered land owner on critical wetlands. • Restore critical wetlands to improve ecosystem services such as ground water recharge, flood control, fishing and agriculture for enhanced livelihoods to the most vulnerable subsistence farming communities. • Strengthening the Environmental Protection Force. • Empower communities in sensitive wetland areas in risk reduction and preparedness to climate-related disasters, through participatory and decentralized early warning systems and capacity development for implementing disaster risk reduction measures.
Local governments Forest Reserves **Out of 190 (5,000 ha) local forest reserves 43% are totally deforested and remaining are in different forms of severe degradation**	• Re-survey of the external boundaries and planting of visible • Enhance beatification of the urban and peri-urban local forest reserves, • Support to 43 districts forest, environment and natural resources departments to manage local forest reserves • Support remaining districts 71 districts to identify and gazette suitable local forest reserves to serve the young urban centres (area about 2,000 Ha) • Develop climate resilience through sustainable management of natural resources and agricultural enterprise development by provision of catchment management plans for five (Doho II, Mubuku II, Toochi, Ngenege, Wadelai).
Lakeshores and riverbanks	• Sensitization on the sustainable utilization and conservation of resources on the lakeshores and riverbanks by and for the benefit of the people and community (land owners and land users). Demarcation of the protection zones of the rivers and lakes as provided for in the law by both pillars and trees. • Regulation of the activities on the riverbanks and lakeshores through the Environmental Impact Assessment (EIA) and the Permitting System. • Compliance enforcement on the lakeshores and riverbanks through use of technical officers in Central and Local Government, Gazetted Environmental Inspectors and Environmental Police. • Demarcation of the protection zones of the rivers and lakes as provided for in the law by both

	pillars and trees. This has been partly done on the banks of River Nile and River Rwizi and the shores of Lake Nakivaale in Isingiro district. Demarcation of at last demarcation 200km of lakeshores would be significant.
NWSC Interventions	• Implement source protection plans for at least 8 critical sources in towns of Arua, Gulu, Bushenyi, Mbale, Fort Portal, Kasese and Masindi by June 2018 • Develop and implement decision support water quality model for lake Victoria inner Murchison Bay by June 2020 • Adopt appropriate technologies for new and existing plants to ensure source protection through resource recovery and sludge reuse by June 2010 • develop and implement sanitation safety plans • promote hygiene through local water councils young water professional, school water sanitation clubs • promote community awareness on environmental protection through local water councils, tree planting y younger water professionals (YWPs) and school water sanitation clubs annually • Promote green technology annually

Recycling of Garbage for Clean and Healthy Environment

Issue	**Planned Interventions**
Currently 12 municipalities have been supported by NEMA to establish complete waste management and composting facilities and composting and 5 have been supported with equipment for collection and transportation of waste. **Municipal waste management remains a big challenge as many urban centres do not have proper facilities for collection and disposal. The waste is mainly categorized into biodegradable and non-biodegradable.**	• Currently 12 municipalities have been supported by NEMA to establish complete waste management and composting facilities and composting and 5 have been supported with equipment for collection and transportation of waste. • 5 new towns are expected to be supported by NEMA in the next 5 years with equipment and training to manage equipment. • License more waste handlers for hazardous waste, with adequate expertise, equipment and facilities. • Holistic waste management programme, including handling of polythene waste. • Encourage more climate smart waste management strategies, including clean development mechanisms (e.g. use of waste for energy generation, biogas and composting of waste)

Water for Production and Water for Oil and Gas Development

Issue	Planned Intervention
Work with Makerere University to develop a solar powered water pump to pump water, at the local level to any raised ground where it can, then, flow by gravity to the farmlands	Establish factory for solar water pumps
Beyond Rehabilitation Doho and Mobuku and Agoro; and commissioning Olweny, we have to do more irrigation in different parts of the country.	Ongoing and Planned Interventions for FY 2016/17 • Complete the re-construction of Olweny irrigation scheme (600 ha) with funds from Ministry the works is at 63% completion. • Start the Construction 5 Irrigation schemes (Rhino Camp-Wadelai (1000ha) in Nebbi, Toochi (500ha) in Oyam, Ngenge (880ha) in Kween, Doho II (1178ha) in Butaleja, Mubuku II (480ha) in Kasese) with funds from AFBD and GOU. • Start the Construction of Rwengaaju irrigation scheme (250ha) in Kabarole District with funds from GOU. • Construction of Akwera irrigation scheme (200ha) in Otuke district and Ongole irrigation scheme (250ha) in Katakwi. Planned Interventions FY 2017/18-FY 2020/21 • Construction of 7 irrigation schemes (Pabbo in Amurau, Ongom in Alebtong, Bisso in Bulisa, Labori in Serere, Namalu in Nakapiripirit, Musamya in Kayunga/Mukono, Kibimba in Mpigi/Gomba, and Matanda in Kanungu. • Construction of Atari Irrigation scheme in Kween/Bulambuli and Acomai in Bukedea
Prepare and design systems to be able to handle mega irrigation projects around Mount Elgon, Mount Rwenzori, the South Western Highland and Agoro hills and others areas including Eastern and Northern Uganda	Planned Interventions FY 2017/18-FY 2020/21 • Design of 7 irrigation schemes (Pabo in Amurau, Ongom in Alebtong, Bisso in Bulisa, Labori in Serere, Namalu in Nakapiripirit, Musamya in Kayunga/Mukono, Kibimba in Mpigi/Gomga, and Matanda in Kanungu • Design of Nyimur irrigation scheme in Lamwo and Angololo irrigation scheme in Tororo and Busia County in Kenya • Design of Mpologoma Irrigation scheme in Kibuku and Pallisa • Design of Bigasha irrigation scheme (1942ha) in Isingiro, Rwimi irrigation scheme (4415ha) in Kabarole, Lumybure irrigation scheme (9812) in Kaliro and Okok irrigation scheme (6620ha) in Soroti • Feasibility study and designs of Mega Irrigation schemes to use waters from Mt Elgon, Mt. Ruwenzori, Western highlands, Agoro hills and other areas
Provide surface reservoirs to store water in support of agriculture at local level (livestock, aqua-culture, forestry etc	• Construction of Mabira dam (10%)in Mbarara • Construction of 15 valley tanks in Nakasongola, Kiboga , Mubende, Luwero, Nakaseke and

Issue	Planned Intervention
	Sembabule under GCCA • Construction of 5 community valley tanks in Apac, Oyam, Soroti, Rakai and Lyantonde with funding from Egypt • Construction of 9 community Apac, Otuke and Katakwi under AfDB • Construction of 4 community valley tanks by the Regional Centers projects • Construction of 4 community valley tanks using WfP equipment • Construction completion of Ongole dam (63%-100%) in Katakwi • Construction of Katigondo WfP facility in Kalungu district Planned for FY 2016/17- FY 2020/2021 • Construction of 16 Surface Water reservoirs that are already designed :- Nalungi dam (460,000 m3) in Mityana, Lwebicuna/Kabamba dam (960,000m3), Butayunga dam (320,000m3) and Kayebe dam (500,000 m3) in Mubende ,Longoritopoji dam (150,000m3) in Kaabong, Katabok dam (2.3 million m3)in Abim, Namatata dam (15million m3) in Nakapiripirit, Opochi dam (1.3millon m3) in Kakatakwi, Siyon dam (200,000 m3) in Kibaale, Rwemirondo dam (240,000 m3) in Kiruhura, Rugash dam (150000m3) in Shema • Construction Acanpii dam in Oyam district, Ogwete dam in Otuke district and Geregere dam in Agago district • Rehabilitation /re-construction of 102 dams and valley tanks that were assessed in 2009 • Construction of Nsanga-Kitatsi-Kanyaryeru bulk water supply scheme in Kiruhura district with funding from French Development Agency (AFD). • Construction of Bulk water systems from R. Kagera for multi-purpose use, in particular livestock and irrigation, in Isingiro • Construction of other bulk water systems in Isingiro for multi-purpose use • Construction of Bigasha and Kabuyanda Multipurpose projects (dams and irrigation systems) in Isingiro • Construction of other bulk water systems in Rakai for multi-purpose use livestock and irrigation. • Construction of Lopei Bulk Water System in Napak • Construction of Opot Bulk Water System in Amuria.
Water for Oil and Gas Development	• Kingfisher Development Area (KfDA) by CNOOC will set up CPF 1 at about 3km from L. Albert to handle 40,000 barrels of oil per day and will need 45,000 barrels of water per day to injects in the wells to balance pressure • Kaiso-Tonya Development Area (KTDA) by/Tullow Oil to pump 20,000 barrels of oil by to

Issue	Planned Intervention
	CPF1 and will need 25,000 barrels of water per day to inject in the wells to balance pressure • The Buliisa Development Area (BDA) by Total E&P and Tullow Oil to set up CPF 2 at 13 kms from L. Albert to handle 180,000 barrels of oil per day and will need 190,000 barrels of water per day to injects in the wells to balance pressure • The refinery to be located at Kabale is 36km from L. Albert to process 60,000 barrels of oil per day that will need water for cooling and other processes.

All Cities, Towns and Trading Centers to get Safe and Clean Water

Facility/ Programme	Towns under construction	Towns under procurement for construction	Towns under design stage	Towns under planning up to 2018
WSDF-SW .	05 Small Towns/Rural Growth Centres Sanga; 68%, Kasagama; 82.6%, Kaliiro; 70%, Nyahuka; 86%, Kinuka; 99% , Regional Office Block 1st Phase; 96%	Construction contracts awarded for 06 STs/RGCs: Kashaka-Bubaare, Nsiika, Kiko, Kainja, Buyamba, and Kambuga. Construction contract awarded for 02 Faecal Sludge Treatment Plants: Ishongororo (in Ibanda) and Kasaali-Kyotera (in Rakai). Construction contract awarded for 2nd Phase Regional Office block	12 designs; approved by the DRC: Buyamba, Kainja, Kambuga-Kihihi TCs, Nsiika, Kashaka-Bubaare, Katooke, Kyenjojo, Butunduzi, Kiko, Igorora, Karago, and Lwemiyaga. 07 designs have been completed: Lwebitakuli RGC, Butare-Mashonga RGC, Nyamunuka RGC, Rwashamaire TC, Butogota, Kabuyanda, and Kajaho 16 Towns under design: Kyabi RGC, Nyakashaka RGC, Kijura TC, Rubirizi TC, Kibbuku TC, Kanara TC, Kisinga/Kagando/Kiburara, Kinyamaseke, Kibaale, Bethlehem, Lwamaggwa, Nambirizi, Kibingo TC, Bitooma, Bukinda, Rushango TC	-
WSDF-N	Under construction= 5 towns Dokolo; 98% Kalongo; 98% (Addendum)		8No. Completed designs in FY2015/16 Loro, Namasale, Bibia/Elegu,	30 Proposed towns for future development: Loro Namasale, Bibia/Elegu,

Facility/ Programme	Towns under construction	Towns under procurement for construction	Towns under design stage	Towns under planning up to 2018
	Amolatar T.C 98% (Addendum) Amach 70% Okollo 99% (Un yielding source) 02 towns for power-grid extensions (%): Oyam Sanitation Infrastructure Under Construction =52 Household Ecosan Demonstration Toilets:21 Institutional VIPs: 4 Public Water Borne: 4		Pabbo, Zombo T.C, Acholibur, Rackoko, Agago T.C Former 5 IDP camps completed Mucwini, Namokora, Paloga Lagoro, Palabek-Ogil 6No. Former IDP under designs Abia, Apala, Omoro, Bar-job, Olilim, Parabongo.	padibe, Pabbo, Odramacaku, Zombo T.C, Acholibur, Rackoko, Agago T.C, Barr, Amuru TC, Bala, Keri, Awach, Barakara, Lamwo-Lokung-Olebi TC, Aboke, Palabek-Kal, Atiak, Kole-Molem T.C, Atapara, Okpotani, Kitgum-matid, Ngai, Iceme, ArraDufile, Obongi, Okokoro, Rhino Camp 08No. water schemes in former IDP camps for re-sizing/ conversion: Palenga, Alero, Erussi, Alangi, Kati, Kubala, Lodonga, Itula.
WSDF-E	6No. Towns Water Supply systems under Construction Ocapa RGC (Serere) 65%, Kyere RGC (Serere) 65%, Bukwo TC 93%, Nakapiripirit TC 83%, Kagoma RGC (88%) Public water Borne toilets Kyere 90%, Ocapa 90%, Nakapiripirit 97%, Bukwo 96%	6 Towns: Namagera, Bulegeni, Iziru, Kapelebyong, Buyende, Amudat	16 Completed Designs: Moroto(Moroto), Kotido (Kotido), Kacheri-Lokona (Kotido), Nakiperimoru (Kotido), Bugadde (Mayuge), Bwondha (Mayuge), Namwiwa (Kaliro), Kibale (Pallisa), Idudi (Bugiri), Lumino (Busia), and Kadungulu(Serere), Tubur (Soroti), Acowa (Amuria), Kidetok (Serere), Buyaga (Bulambuli), Bulambuli (Bulambuli) 8 Under Design and Mobilisation: Namungalwe (Iganga), Kibaale(Namutumba), Namayingo (Namayingo), Ikumbya (Luuka), Bugobi (Namutumba), Binyinyi (Kween), and Iki-iki (Budaka)	14 towns of Kidetok (Serere), Tubur (Soroti), Acowa (Amuria), Namungalwe (Iganga), Kibaale (Namutumba), Buyaga (Bulambuli), Bulambuli (Bulambuli), Namayingo (Namayingo), Amudat (Amudat), Ikumbya (Luuka), Bugobi (Namutumba), Binyinyi (Kween), and Iki-iki(Budaka), Lokiteded (Napak), Expansion of Kasambira (Kamuli), Namwenda (Kamuli), Bulopa (Kamuli)

Facility/ Programme	Towns under construction	Towns under procurement for construction	Towns under design stage	Towns under planning up to 2018
WSDF-C	Kayunga; (100%) completion 4No. Towns (contractors mobilizing to site) Katuugo (60%), Kakooge (60%), Ssunga (50%), Kiboga (70%), Migyera, Nyamarunda, Buvuma, Kayunga FSM Sanitation: Nkoni, Kyamulibwa, Najjembe, Kinogozi, Butiaba, Bugoigo, Walukuba, and Gombe		17No. Completed Designs: Nakasongola, Bugoigo, Walukuba, Zigoti, Kagadi Kabwoya, Busaana, Kabembe, Kalagi, Nagalama, Kikunyu, Kiyindi, Namulonge, Kiwenda, Busiika, Kiwoko, Butalangu 16No. designs on-going: Ngando (Butambala), Lwengo T/C, Katovu, Kyazanga, Lukaya, Kyabadazza, Butenga, Buyoga, Kakindu, Sekanyonyi, Kasawo, Butemba, Kikandwa, Mbirizi, Kapeeka, and Gombe,	24 No. Towns Lwengo T/C, Katovu, Kyazanga, Busaana, Kabembe, Kalagi, Nagalama, Kikunyu, Kiyindi, Namulonge, Kiwenda, Busiika, Kiwoko, Butalangu, Lukaya, Kyabadazza, Butenga, Buyoga, Kakindu, Sekanyonyi, Kasawo, Butemba, Kikandwa, and Mbirizi
Water Management and Development Project	• Bid Evaluation Report for the Towns of Busia, Palisa, Kumi-Ngora-Nyero was submitted to World Bank for Review and approval. • Contracts for Koboko, Rukungiri and Katwe-Kabatoro have been signed by the Permanent Secretary. • 3No. Draft Detailed Designs for Budaka-Kadama-Tirinyi-Kibuku, Butalejja, Busolwe was presented to all stakeholders in the towns. • Rukungiri, Katwe-Kabatoro and Koboko have been approved by chief Government Valuer, • Project management / grievance redress committees have been formulated, Topographic surveys and Socio-Economic Surveys and valuation of property and livelihood of the PAPs are on-going in Budaka-Kadama-Tirinyi-Kibuku and Butalejja-Busolwe. • Final Situation Analysis Report on Source Protection and Catchment Management for Busia, Pallisa, Kumi-Ngora-Nyero have been	11No. towns under procurement Kumi, Ngora, Nyero, Busia, Butalejja, Busolwe, Budaka, Kadama, Tirinyi, Kibuku, and Palisa		None as the project runs up to 2018

Facility/ Programme	Towns under construction	Towns under procurement for construction	Towns under design stage	Towns under planning up to 2018
	submitted by the Consultant. • A contract for Source Protection and Catchment Management for Busia, Palisa, Kumi-Ngora-Nyero, Rukungiri, Katwe-Kabatoro and Koboko has been signed. • A contract for Source Protection and Catchment Management for Busia, Palisa, Kumi-Ngora-Nyero, Rukungiri, Katwe-Kabatoro and Koboko has beeb signed. • Contract for Design Review and Construction Supervision for the towns of Omiya-Anyma, Oryang and Agaro was signed and is at Solicitor General for Clearance.			

National Water and Sewerage Corporation (NWSC)

Ongoing Projects during 2017	Planned Projects during 2018-19	Activities Planned During 2020/2021
• **Complete Kampala sanitation project** • **Complete Masindi and Kapeeka, Gulu, Busehyi, Arua. Mbale water supply projects** • **Construction of 45 public toilets with bathroom in various locations in greater Kampala** • **Complete installation or construction of package Sewerage treatment plants for Kisoro and Fort-portal.** •	• Complete Kampala Water-Lake Victoria project-Katosi Sub-systems • Gulu, Busehyi, Arua. Mbale	• Complete construction of Masindi, Hoima Albertine Graben Cluster (North) and Kasese/Fort portal Albertain Graben Cluster (South) Water and Sanitation Projects. • Undertake Gulu Water Supply system expansion using Nile as a source of water. • Construction at-least 3,000 public stand posts to address Urban Poor Water service provision (average 600 public standing posts per year. • Install at least 4,000 prepaid meters targeting urban poor communities • Implement peri-urban water tariff and reduce vender charges at Public Stand posts to at most UGX. 50 per 20 litre jer rican. Provide piped water source to every village within NWSC operational area has access to piped water source for every 15-20 households (200 people) within a working distance of 200 meters and assuming per capital consumption of 20 litres. **Sanitation:** • Construct Watsan Infrastructure development cluster project towns targeting Masaka cluster, Kyotera cluster, Mbarara cluster, townships in Isingiro, Lyantonde, Rushere Cluster etc.)

		• Adopt and upscale implementation of innovative water and sewerage system technologies to increase service coverage • Undertake Watsan Infrastructure development of Greater Kampala south western parts.