



MINISTRY OF WATER AND ENVIRONMENT

DIRECTORATE OF WATER RESOURCES MANAGEMENT



STRATEGY FOR CATCHMENT BASED INTEGRATED WATER RESOURCES MANAGEMENT IN UGANDA

(2020-2030)

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Foreword

Uganda’s achievement of the National Vision 2040 and the Sustainable Development Goals for water heavily relies on embedding sustainable practices in managing the country’s water resources. Already, the Water and Environment sector in Uganda has registered several achievements through a number of multi-sectoral initiatives. In these efforts, the Government of Uganda together with its bilateral and multilateral partners have supported the development of critical human and infrastructural capacities required to further the implementation of the concept of Catchment based Integrated Water Resources Management (CbiWRM) in Uganda. Several achievements have been registered through the de-concentration process of water resources management. Therefore, this Catchment based Integrated Water Resources Management (CbiWRM) Strategy 2020 represents an important milestone for the sustainable management of water resources in Uganda, using the catchment as the building block. The Strategy’s five strategic pillars should catalyse investment, resource mobilisation and buy-in by both, local and international stakeholders to guide efficient and effective water resources management in Uganda.

I urge all state and non-state actors, including development partners, civil society organisations, the private sector, academia and others to support the implementation of the CbiWRM Strategy by mainstreaming the recommended interventions into their planning and budgeting frameworks. I appreciate the concerted efforts of all the stakeholders that have supported the Government of Uganda, through the Ministry of Water and Environment, in the development of this CbiWRM Strategy. I am confident that this Strategy will revolutionise the way the country is developing and managing its water and related resources for sustainable socio-economic development. The Ministry of Water and Environment commits to continue partnering with all stakeholders for the sustainable management of Uganda’s water resources at regional and local levels.

I wish therefore to congratulate the Directorate of Water Resources Management for coordinating the development of this Strategy which will be updated and revised as more experiences are gained on the ground.

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Alfred Okot Okidi

Permanent Secretary

MINISTRY OF WATER AND ENVIRONMENT

Cover photo:

Lake Bunyonyi landscape, Western Uganda (Credits: Getty Images/Shakke Schwartz)

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The preparation of the Catchment based Integrated Water Resources Management Strategy 2020 has been undertaken by the Directorate of Water Resources Management under the Ministry of Water and Environment with inputs of stakeholders in the Water and Environment Sector. Several government ministries and agencies, development partners, civil society and individuals at local, national and sectoral levels provided information and views at different stages of developing this Strategy through consultation, meetings and workshops, and technical working sessions. The Directorate of Water Resources Management wishes to acknowledge all individuals and institutions who have contributed to the planning and production of this Strategy.

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MINISTRY OF WATER AND ENVIRONMENT

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Abbreviations and Acronyms

CbiWRM	Catchment based Integrated Water Resources Management
CCD	Climate Change Department
CMC	Catchment Management Committee
CMO	Catchment Management Organization
CMP	Catchment Management Plan
CMS	Catchment Management Secretariat
CTC	Catchment Technical Committee
DEA	Directorate for Environmental Affairs
DFS	District Forestry Services
DLG	District Local Government
DWD	Directorate for Water Development
DWSCC	District Water and Sanitation Coordination Committees
DWRM	Directorate of Water Resources Management
EIA	Environmental Impact Assessment
FSSD	Forestry Sector Support Department
IMSC	Inter-Ministerial Steering Committee
IWRM	Integrated Water Resources Management
JWESSP	Joint Water and Environment Sector Support Project
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MCMC	Micro Catchment Management Committee
MEMD	Ministry of Energy and Mineral Development
MLG	Ministry of Local Government
MOH	Ministry of Health
MTTI	Ministry of Tourism, Trade and Industry
MWE	Ministry of Water and Environment
MWT	Ministry of Works and Transport
NEMA	National Environmental Management Authority
NFA	National Forest Authority
SCMC	Sub Catchment Management Committee
TSU	Technical Support Unit
UO	Umbrella Organization
UTGA	Uganda Timber Growers Association
WAC	Water Management Zone Advisory Committee
WAP	Water Action Plan
WESWG	Water and Environment Sector Working Group
WMZ	Water Management Zone
WPC	Water Policy Committee
WRI	Water Resources Institute
WRM	Water Resources Management
WSDF	Water and Sanitation Development Facility

Key Terms

Catchment	<i>A water catchment is an area of land from which surface water drains to a single exit point. It is an area that drains water to a pumping station, a spring, a well, a borehole, a reservoir or a hydro-electric power plant</i>
Catchment management	<i>Activities and actions aimed at the sustainable distribution of catchment resources and the process of creating and implementing plans, programs, and projects to sustain and enhance functions that affect the plant, animal, and human communities within a catchment</i>
Catchment Protection	<i>Management actions taken to maintain and improve the social and biophysical condition of the catchment environment so as to maintain both water quality and water quantity in the catchment</i>
Catchment Management Plan	<i>Provides a broad framework for water resources, land use practices and management decision making objectives. It identifies the ecological, cultural, historical, social and economic values within the catchment, whilst encompassing the necessary initiatives for coordinated future management and rehabilitation practices.</i>
Catchment Management Organization	<i>A multi-stakeholder body that facilitates collaborative water resources management, playing a pivotal role in developing and coordinating implementation and monitoring of the CMP</i>
Catchment Stakeholders Forum	<i>Comprises of all stakeholders in the catchment with an interest in or whose activities affect or are affected by the status of water and related natural resources.</i>
Catchment Management Committee	<i>Composed of high-level officials representing key stakeholders in the catchment. It is the executive arm of the CMO</i>
Catchment Technical Committee	<i>Composed of technical staff from key stakeholders in the catchment. It is the technical arm of the CMO</i>
Catchment Management Secretariat	<i>Composed of 1 to 3 full time or part time staff, responsible for providing day-to-day operations support to the CMO</i>
Mainstreaming	<i>a process of policy integration, where one set of policy priorities is integrated into a broader set of policies. In the case of CbIWRM, mainstreaming refers to the process of ensuring that broad policy frameworks and national processes are consistent with CbIWRM principles</i>
Sub-catchment Management Committees	<i>composed of representatives of key stakeholders at Sub-catchment level</i>
Micro-catchment Management Committees	<i>composed of representatives of key stakeholders at Micro-catchment level</i>

EXECUTIVE SUMMARY

This document presents the “revised strategy” (referred to as “the 2020 CbiWRM strategy”) to guide implementation of Catchment based Integrated Water Resources Management (CbiWRM) in Uganda from 2020 to 2030. The 2020 CbiWRM strategy was developed through a consultative and participatory process led by DWRM. The process involved all key stakeholders including: MWE directorates, regional de-concentrated structures, affiliated semi-autonomous agencies; other Ministries and agencies of central government, Catchment Management Organisations, District Local Governments, Civil Society Organisations (CSOs), development partners, private sector players and other practitioners involved in Uganda’s water and environment sector. Their views and insights were collected through one-on-one meetings, workshops, working sessions as appropriate. In addition, the development of the 2020 CbiWRM strategy was informed by insights generated through a review of sector documents including sector policy documents, strategies and plans; insights and experiences from other countries where catchment-or basin-level management of water and related resources is being implemented.

The purpose of the 2020 CbiWRM Strategy is to provide the MWE and stakeholders in CbiWRM a roadmap for ensuring structured engagement of stakeholders in contributing towards CbiWRM. The 2020 CbiWRM Strategy is timely as it comes at a time when Uganda is rolling out the implementation of the third National Development Plan (2020/2021-2024/2025). Moreover, with the decline in support towards the Water and Environment Sector from development partners, the 2020 CbiWRM Strategy helps to catalyse new home-grown approaches for resource mobilisation for water resources management, adapt capacity development to emerging needs, strengthen advocacy and enhance public/private sector engagement.

This 2020 CbiWRM Strategy envisions “*sustainably managed water resources that support livelihoods and development by 2030*”. The Goal of the 2020 CbiWRM Strategy is to: “*by 2030, ensure the availability and sustainable management of water and related resources for Uganda’s socioeconomic transformation.*” This goal will be realized through the following strategic objectives: 1) enhancing the enabling environment for CbiWRM implementation, 2) strengthening human and institutional capacity to implement CbiWRM, 3) enhancing the instruments and tools to guide CbiWRM implementation, and 4) catalysing investments in CbiWRM implementation

It is estimated that implementing the 2020 CbiWRM strategy will require a total of 120,810,000 USD over the strategy’s ten-year period (2020-2030).

The major source of funding will include; integration of Water Resources Management activities at various levels into Medium Term Expenditure Framework (MTEF); integration of WRM activities in various catchments into District Development Plans and District Development Action Plans; conditional grants provided for catchment management activities through CMOs; direct or in-kind funding for activities from various sources; non-tax revenues (payments by polluters and water users through water permit system); payment for WRM Services (sales of data, laboratory services etc.); payment for environmental services schemes; payment for Water Source protection (3% of water related investment costs based on Water Source Protection guidelines); leveraging Local government conditional grants and other area-specific funds; leveraging on proposed projects under the NDP III; project financing from various sources (donors, NGO, Government, private sector); contributions by business entities under corporate social responsibility (CSR) and water stewardship arrangements; and a Catchment Management Fund that could be financed from various sources.

1 INTRODUCTION

1.1 This document

This document, known as the 2020 CbiWRM strategy, presents DWRM's strategy for implementing Catchment based Integrated Water Resources Management for the period 2020 – 2030. It was developed in a highly consultative and participatory process, that begun in June 2019, led by DWRM. Stakeholders consulted include: MWE directorates, regional de-concentrated structures, and affiliated semi-autonomous agencies; other Ministries and Agencies of central government, Catchment Management Organisations, District Local Governments, Civil Society Organisations (CSOs), development partners, private sector players and other practitioners involved in Uganda's water and environment sector. In addition, the development of the 2020 CbiWRM Strategy was informed by insights generated through a review of sector documents (including sector policy documents, strategies and plans) and insights and experiences from other countries where catchment – or basin – level management of water and related resources is being implemented. The process also included developing a Resource Mobilisation Strategy for CbiWRM and an Operations Manual for the Water Management Zones.

The 2020 CbiWRM strategy is organized in six chapters. Chapter One provides a historical and contextual background to Water Resources Management in Uganda, the policy and institutional framework for water resources management as well as emerging issues that affect water resources management in the country. Chapter Two provides the achievements and challenges of implementing CbiWRM in Uganda, and the emerging opportunities. The chapter also provides an appraisal of CbiWRM implementation in Uganda since 2010, focussing on the achievements realised and challenges met. Chapter Three provides the strategic direction for the CbiWRM implementation, outlining the goal, objectives, and explaining the strategic interventions. Chapter Four provides the Implementation arrangements and the universe of actors who will be directly or indirectly involved in the implementation of the CbiWRM Strategy. The chapter also presents the assumptions, risks and the mitigation measures for engaging in CbiWRM. The chapter further highlights the monitoring and evaluation arrangements. Then Chapter Five provides a Financing plan and the resource (including non-financial) requirements necessary to implement the strategy.

1.2 Uganda's Water Resources

Water resources in Uganda comprise of lakes, wetlands, rivers, rainfall, surface water runoff and groundwater.¹ Sixty six percent of Uganda's water resources (43.3 km³/year) originate from sources outside of its borders.² Uganda's water resources are almost wholly transboundary, 98.2% in the Nile Basin; 1.8% drains in the Kenya-Ethiopia Lake Turkana basin. Uganda occupies a dual position in the Nile riparian context, being lower riparian with respect to Rwanda, Burundi, Tanzania, Kenya and the Democratic Republic of Congo, and an upper riparian with respect to Sudan and Egypt.³

Water resources in Uganda are estimated at 66 km³/year corresponding to about 2800 m³ /person/year. It can be concluded therefore that Uganda is fairly well endowed with water resources. However, the spatial and temporal distribution of these resources is uneven which poses a big challenge to their management⁴.

Uganda's water resources face several challenges and pressures. With rapid growing population and improving living standards, the pressure on Uganda's water resources is increasing. Spatial and temporal variability in precipitation is another challenge the country faces, which often result into floods, landslides and droughts. Moreover, climate change is expected to impact on rainfall and water availability. The quality of surface and ground water resources is also deteriorating because of increasing pollutant loads and non-point sources. Further, the data collection, processing, storage and dissemination have not received the deserved attention.

¹ WRMD (2004) The Yearbook of Water Resources Management Department (WRMD) 2002-2003. Department of Water Resources Management (DWRM), Entebbe.

² DWRM (2013) National Water Resources Assessment study. Department of Water Resources Management (DWRM), Entebbe.

³ UN-WWAP (2006) Uganda National Water Development Report; Prepared for the 2nd UN World Water Development Report "Water a Shared Responsibility" UN-WATER, WWAP/2006/9. World Water Assessment Programme (WWAP).

⁴ Nsubuga, F., Namutebi, E and Nsubuga-Senfuma (2014), Water Resources of Uganda: An Assessment and Review in *Journal of Water Resource and Protection*, 2014, 6, 1297-1315

1.2.1 Surface water resources

Uganda is a landlocked country that occupies 241,550.7 km² of land. Open water and swamps constitute 41,743.2 km² of area⁵, with about 16% of total land area of wetlands and open water. Major lakes include Victoria, Kyoga, Albert, Edward, George, Bisina, Mburo, Bunyonyi, Kijanibarora, Kwania, Wamala, Mutanda, Marebe, Opeta, Nabugabo, Nkugute, Katunga, Nyabihoko, and Nakivale. Together with other smaller lakes spread across the country, they cover an area of 38,500 km². The main rivers include Nile, Aswa, Katonga, Nkusi, Kafu, Rwizi, Kagera, Mpanga, Manafwa, Mpologoma, Semliki, Mubuku, Mayanja, Sezibwa, Malaba, Sipi, Namatala, Sironko, Muzizi, and Nabuyonga. In the north-eastern part of the country, many of the water courses are seasonal. The Ministry of Water and Environment categorised these surface water sources into eight main drainage basins, namely Kidepo, Aswa, Albert Nile, Victoria Nile, Lake Albert, Lake Kyoga, Lake Edward and Lake Victoria.

Rapid population growth coupled with increased agricultural, urbanisation and industrial activities, and the poverty (in rural and peri-urban areas) are causing a serious depletion and degradation of surface water resources. Human activities like cultivation, settlements and overgrazing are exerting increasing pressure on rivers, leading to riverbank erosion and degradation.

Lakeshores are threatened by population growth alongside lakes and in nearby towns that depend on the lake for economic growth, either directly or indirectly. The resulting degradation has various impacts on the lakeshores, such as pollution and agricultural encroachment. For example, Murchison Bay of Lake Victoria is a pollution hotspot, since industrial wastewater, urban wastes and run-off from Kampala have been washed into the bay for more than 40 years. The pollution has increased the costs of water treatment raising the cost of water provision which at the moment is one of the highest in the region. There is an increase in levels of Lake Victoria attributed to degradation of the lake's catchment, especially through wide-spread de-vegetation and wetland destruction.

The rate at which rivers and lakes are silting is on the increase, caused by watershed or catchment degradation, soil erosion, poor agricultural practices, degradation of wetlands and deforestation. Rivers like Rwizi, Mpanga, Manafwa, Sipi among others, are facing serious sedimentation due to degradation of the catchment areas.

1.2.2 Wetland Resources

Wetland systems in Uganda can be categorised into 1) natural lakes and lacustrine swamps found around major lakes, and 2) the riverine and flood plain wetlands which are associated with the major river systems. Wetlands cover 8.9% of Uganda's land area.⁶

It is estimated that Uganda loses 846 km² of its wetlands annually⁷, the major causes being poor farming practices, unplanned urbanization, expansion of informal settlements, excessive water abstraction, income poverty, poor intra and inter sector coordination with regards to continued issuance of land titles in wetlands, sand mining and industrialisation with some of the business/industrial parks located in wetlands. There has been significant increase in wetland degradation and encroachment; from 11.9% in 2012 to 10.9% in 2017. Whereas the demarcation of boundaries of critical wetlands has been ongoing and the restoration and protection of degraded wetlands has been undertaken countrywide, wetland degradation is over 70 times the rate of restoration.

1.2.3 Groundwater resources

The geology of Uganda is dominated by basement complex which does not form good aquifers. Groundwater potentials are only possible in decomposed rocks and fractures that tend to be limited in yield; it is therefore very difficult to find high yielding boreholes (yield > 30m³/h) or well fields that are extensive from which many wells can be sunk to exploit the groundwater.

Nonetheless, sixty-one percent of Uganda's water is from groundwater sources, accessed from springs and boreholes around Lake Victoria and south-western Uganda. A 2010 National Water Resources study, found that the Victoria Nile and Kyoga basin have sustainable groundwater (which is more than 36 mm/yr) while Kidepo has the least amount of sustainable groundwater equivalent to 6.3 mm/yr.

⁵ UN-WWAP (2006) Uganda National Water Development Report; Prepared for the 2nd UN World Water Development Report "Water a Shared Responsibility" UN-WATER, WWAP/2006/9. World Water Assessment Programme (WWAP).

⁶ MWE (2019) Water and Environment Sector Performance Report.

⁷ NPA (2020), National Development Plan (2020/2021 – 2024/2025), National Planning Authority, January 2020.

Earlier in 1996, the Government of Uganda initiated groundwater assessment studies, to ascertain the nature, extent and reliability of the country's groundwater resources. Assessments in three catchments of Rwizi, Wamala and Victoria concluded that groundwater resources were declining. The causes of decline according to a report from the monitoring and assessment department of the DWRM include among others; climate change/global warming, changes in land-use, especially deforestation, unsustainable water withdrawals, poor catchment management, prolonged droughts, reduced rainfall in the catchment. Pollution caused by bacterial and chemical contamination resulting from inadequate sanitation facilities, unsafe disposal of municipal and industrial waste also affects this resource.

1.2.4 Forests and woodlands

According to NDP 3, Uganda's forest cover has declined from 24% (or 4.9 million ha) of the country's total land area in 1990 to 9% (1.83 million ha) in 2018, representing a decline of 57% in only 25 years. The high (and increasing) demand for biomass-based fuel (for cooking) is the main driver of forest loss in the country; other drivers include expansion of agricultural land; sporadic urbanisation; industrialisation and inadequate incentives for private plantation of forests. This is exacerbated by the influx of refugees who heavily rely on natural resources. The impacts of lost forest cover include loss of surface cover for soils, which leads to soil erosion, and loss of eco-system services which will have social and economic impacts (since forestry products will continue to be needed, despite the loss of forest).

Generally, the environment is increasingly under threat from both natural and manmade causes including poverty; rapid population growth; unplanned urbanisation; expansion of informal settlements; industrialisation; unregulated mining; low levels of awareness; inadequate information on critical issues; and impacts of climate change and variability⁸.

1.3 Reforms to Water Resources Management in Uganda

Following the adoption of the principles of Integrated Water Resources Management (IWRM) in the nineties by the Government of Uganda, the country embarked on a journey of targeted policy and institutional reforms. From 1993, Uganda developed a Water Action Plan (WAP) 1995, which operationalised the IWRM principles known as the Dublin principles of 1992 (Box 1)⁹. These principles emphasise the importance of an integrated approach and articulate the link between Water Resources Management and Sustainable Development.

BOX 1: Dublin Principles for IWRM

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment
2. Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels
3. Women play a central part in the provision, management and safeguarding of water
4. Water has an economic value in all its competing uses and should be recognized as an economic good

The WAP detailed the activities associated with water resources development and management in Uganda. It defined priority action areas to revitalise the water resources management sub-sector and provided the government with guidelines and strategies for the protection and development of water resources and a structure for their management at national, district and local levels.

In 1995, Uganda promulgated her constitution, which requires the State to adopt an integrated and coordinated planning approach to protect important natural resources including land, water, wetlands, minerals, oil, fauna and flora, and endeavour to fulfil the fundamental rights of social justice and economic development of all Ugandans. The Constitution requires The State to further sustainable development and public awareness of the need to manage land, air, water resources, and natural resources in a balanced and sustainable manner for both current and future generations. Through this, the constitution provides the legal basis for IWRM in Uganda and places upon the State the overall responsibility for Water Resources Management. Further, by formally adopting decentralisation and devolution, The Constitution made a clear distinction between Central and Local Governments' roles. The State has the duty to guide and support Local Governments as required, while the responsibility to provide water services and maintain facilities lies with local councils in districts and urban centres.¹⁰

⁸ NDP 3

⁹ GWP (2017) The Need for an Integrated Approach. Accessed on February 18, 2020, at: <https://www.gwp.org/en/About/why/the-need-for-an-integrated-approach/>

¹⁰ Ministry of Local Government (2014). Decentralization and local development in Uganda. Accessed on 21/01/2020 at <https://www.ug.undp.org/content/dam/uganda/docs/UNDPUg2014%20-LOCAL%20GOVERNMENT%20HANDBOOK%202014.pdf>

Consequently, both the Water Act Cap 152 (1997) and the Water Policy (1999) advance the Government's policy as managing and developing the water resources in an integrated and sustainable manner, with the full participation of all stakeholders. Over the years, it was realised that while The State remains responsible for overall water resources management, effective planning and management of those resources need to be carried out at the lowest appropriate level and be based on hydrological catchments or basins, rather than administrative boundaries.

From 2003 to 2005, Uganda undertook a water resources sub-sector reform study with the objective *“to establish an effective framework for water resources management in Uganda to ensure that water resources are managed in an integrated and sustainable manner”*. One of the recommendations of the reform study was a paradigm shift from centralised to catchment/basin-based management of water resources. At a 2006 Joint Sector Review (JSR), stakeholders decided to pilot catchment-based water resources management in at least one catchment. A pilot was undertaken in the Rwizi catchment and based on this experience and the lessons learned, MWE adopted a strategy to *“de-concentrate IWRM”*; meaning that rather than executing all the responsibilities and functions associated with IWRM at the central level, these functions would wholly or in part be executed by new units at lower level following hydrological basins or catchments.

In 2009, a Catchment-based WRM Institutional Assessment study was undertaken, considering the challenges caused by the lack of water resources utilisation plans; threats posed by climate change and climate variability; general deterioration of water resources quality; and inadequacy of centralised management of water resources. This study recommended for the creation of Water Management Zones (WMZs), and de-concentrating to them all DWRM services except advisory services on transboundary and international waters; operation of a national Water Resources information database and a national reference laboratory; and policy and legislation. The 2009 JSR made an undertaking that *“Catchment based IWRM is operationalised and funds mobilised for the establishment of all Water Management Zones by 2010/11 while building synergies with other regionally based or decentralised sector support structures.”*

In 2010, a study was carried out to support DWRM in operationalising this undertaking. This study defined four strategic areas (comprising the *“2010 CbWRM Strategy”*) for the operationalisation of Catchment based IWRM (CbWRM): 1) delineation and establishment of WMZs following hydrological boundaries, 2) establishing a framework for operationalizing CbWRM, 3) stakeholder engagement and participation strategy, and 4) capacity development. Based on the recommendations of this study, DWRM rolled out CbIWRM across the country in 2011 through the establishment of WMZ offices.

1.4 Policy, legal and Institutional framework for Water Resources Management in Uganda

The implementation of Water Resources Management in Uganda has its legal basis from international and transboundary conventions and obligations as well as National legislations, policies and regulations. In addition, it is supported by strategies at national and regional level. These provide the framework for the wise use of water resources and set out the roles to be played by different stakeholders.

1.4.1 International conventions and obligations

Uganda is committed to implementing regionally and agreed principles and dispensations as they relate to the water and environment sector.

The Sustainable Development Goals (SDGs) is a plan for action for people, planet and prosperity that should be implemented by all stakeholders and countries in collaboration and partnership. SDG 6, which seeks to *“ensure availability and sustainable management of water and sanitation for all, covers the entire water cycle in addition to management of water and wastewater and ecosystem resources”*. Other SDGs relevant to IWRM include SDG 2 (Zero Hunger), SDG 5 (Gender Equality), SDG 7 (affordable and clean energy), SDG 8 (Decent work and economic growth), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production), SDG 13 (Climate action), SDG 14 (Life below water), SDG 15 (Life on Earth) and SDG 17 (Partnerships for the Goals). Annex 2 gives the SDG targets linked to the environment or WRM in general.

The **Ramsar Convention (1971)** on wetlands is an intergovernmental treaty for which member states must commit to maintain the ecological character of wetlands that are of international importance and plan for sustainable use of wetlands in their territories. The mission of the convention is, *“the conservation and wise use of all wetlands through*

local and national actions and international cooperation as a contribution towards achieving sustainable development throughout the world". Uganda became a signatory to this convention on 4th of July 1988 and currently has about 12 Ramsar registered wetland systems covering an area of about 454,303 hectares. In terms of this convention, wise use of wetlands is *"the maintenance of their ecological character, achieved through the implementation of ecosystem approaches within the context of sustainable development"*.

The **UN Convention on combating desertification (UNCCD)**. In 1997, Uganda ratified the UNCCD. The Climate Change Department of the Ministry of Water and Environment is the focal point for UNCCD. In 2000, a National Action Programme to combat drought and desertification was launched following the development of a national report to UNCCD in Uganda in 1999.

The **UN Framework convention on climate change and the Kyoto protocol (UNFCCC)**. In 1993, Uganda ratified the UNFCCC and in 2012, the climate change policy was launched with related prioritisation of outputs under short (1-5 years), medium (6-10 years) and long term (11-15 years) time frames.

The Africa Agenda 2063: Goal 7 (environmentally sustainable and climate resilient economies and communities) of Africa Agenda 2063 calls for putting in place measures to sustainably manage the continent's rich biodiversity, forests, land and waters and using mainly adaptive measures to address climate change risks. The priority areas for Goal 7 are: sustainable natural resource management; biodiversity conservation, genetic resources and ecosystems, sustainable consumption and production patterns; water security; climate resilience and natural disasters preparedness and prevention; and renewable energy.

The African Convention on the Conservation of Nature and Natural Resources 2003, adopted in Maputo, Mozambique on 11/07/2003, came into force on 23/07/2016. On 18/12/2003, Uganda signed the convention but was yet to ratify it as of the most recent status update¹¹ on 06/02/ 2019. Article VI requires Parties to "take effective measures to prevent land degradation" through developing "long-term integrated strategies for the conservation and sustainable management of land resources, including soil, vegetation and related hydrological processes." Article VII requires parties to among others take appropriate measures towards "the integrated management of water resources, and the conservation of forested and other catchment areas and the coordination and planning of water resources development projects."

The East African Community (EAC) Vision 2050: Pillar 3.4 of the EAC Vision 2050 targets sustainable utilisation of natural resources, environment management and conservation with enhanced value addition, with 92.9% of population having access to safe water

The East African Community (EAC) Protocol on environment and natural resources management 2006: In April 2006, the EAC's Council of Ministers adopted the Protocol to promote "cooperation (among the Partner States) in the management of the environment and natural resources within their jurisdiction. Article 13 (water resources management) requires the EAC partner states to, among others, "take all necessary measures to promote river and lake basin management in order to protect water resources," "improve water catchment management," and "(...) promote the participation of the private sector, civil society and women in the management of water resources."

The Nile basin cooperative framework agreement. Uganda signed the Nile Basin cooperative framework agreement (CFA) in 2010 and ratified it in 2019. The aim of the CFA is to establish a framework to promote integrated management, sustainable development and harmonious utilization of water resources of the basin as well as their conservation and protection for the benefit of the present and future generations. The Cooperative framework agreement (CFA) outlines the principles, rights and obligations for cooperative management and development of the Nile Basin water resources.

1.4.2 National Legislative Framework

The Constitution of the Republic of Uganda (1995): The provision of safe and adequate drinking water is considered a fundamental human right in Uganda which is enshrined in the Constitution of 1995. In it, the State makes assurance *"to endeavour to fulfil the fundamental rights of all Ugandans to social justice, and economic development and, in particular, ensure that all Ugandans enjoy rights and opportunities and access, to education, health services, "clean*

¹¹ https://au.int/sites/default/files/treaties/7782-sl-revised_african_convention_on_the_conservation_of_nature_and_natural_resources.pdf

and safe water'...¹² In addition, "The State shall take all practical measures to promote a good water management system at all levels"¹³. Moreover, "the State shall promote sustainable development and public awareness of the need to manage land, air and water resources in a balanced and sustainable manner for the present and future generations"¹⁴. Through all this, the Constitution sets the scene for Integrated Water Resources Management in Uganda.

The Water Act Cap 152 (1997): Uganda's Water Act Cap 152 provides for the use, protection and management of water resources and supply; and facilitates the devolution of water supply and sewerage undertakings. Its objectives are inter alia: a) To promote the rational management and use of the water resources of Uganda; b) To promote the provision of a clean, safe and sufficient supply of water for domestic purposes; c) To ensure appropriate development and use of water resources other than for domestic use, e.g. watering of stock, irrigation and agriculture, industrial, commercial and mining uses, generation of energy, navigation, fishing, preservation of flora and fauna and recreation in ways, which minimise damage to the environment; and d) To control pollution and promote the safe storage, treatment, discharge and disposal of waste, which may pollute water or otherwise harm the environment and human health. The Act promotes the principles of IWRM and advocates for the involvement of all stakeholders in planning for the utilisation, development and management of water resources. It addresses cross-sectoral interests in water resources and the (financial and technical) roles to be shared among stakeholders; the responsibilities to provide water services and to maintain facilities were devolved to local councils in districts and urban centres, while the role of the Central Government's Agencies is that of guiding and supporting as required. The Act is currently under review to provide for the de-concentration of water resources management from the centre to regional entities.

The National Environment Act (2019): This Act places on every person the duty to create, maintain and enhance the environment, including preventing pollution (Section 3, subsection 2). Section 5 of the Act provides for principles of environmental management that include (i) encouraging the participation by the people of Uganda, in the development of policies, plans and programmes for the management of the environment, (ii) providing for equitable, gender responsive and sustainable use of the environment and natural resources, including cultural and natural heritage, for the benefit of both present and future generations, (iii) maintaining stable functioning relations between the living and non-living parts of the environment through conserving biological diversity and by use of prudent environment management measures, (iv) ensuring optimum sustainable yield in the use of renewable natural resources; (v) ensuring that activities relating to extractive processes of renewable and non-renewable natural resources are carried out in a sustainable manner, (vi) restoring lost or damaged ecosystems where possible and reversing the degradation of the environment and natural resources, (vii) ensuring that adequate environmental protection standards are established and that effective monitoring of change in environmental quality is undertaken.

The Local Government Act (1997): The Act underscores the role of Local Government in provision and management of water and sanitation, empowering the local authorities to plan and to implement development interventions according to local needs. Section 8 of the Local Government Act (1997, revised 2015) provides that two or more district councils may cooperate (in accordance with article 178 of The Constitution) in areas of culture and development. To make this cooperation possible the cooperating district councils may establish and support joint institutions (councils, secretariats) or trust funds and appoint joint committees on matters of common interest.

1.4.3 National Policies

National Water Policy (1999) The 1999 National Water Policy, provides an overall policy framework that defines the government's policy objective as managing and developing water resources of Uganda in an integrated and sustainable manner, to secure and provide water of adequate quantity and quality for all social and economic needs sustainably, with the full participation of all stakeholders". Similar to the Act, the Policy is currently under review to provide for the de-concentration of water resources management from the centre to regional entities.

National Policy for the Conservation and Management of Wetland Resources (1995) The National Policy for the Conservation and Management of Wetland Resources (1995) is aimed at restricting the continued loss of wetlands and their associated resources and to ensure that benefits derived from wetlands are sustainably and equitably distributed to all people of Uganda.

Uganda National Land Policy (2013) The policy provides a framework for articulating the role of land in national development, land ownership, distribution, utilisation, alienability, management and control. The Land Policy has a

¹² Objective (XIV)-_General social and economic objectives

¹³ Clean and safe water (Objective XXI)

¹⁴ The environment (Objective XXVI/)

specific objective that seeks to ensure sustainable utilisation, protection and management of environmental, and natural and cultural resources on land for national socioeconomic development. It seeks to ensure that all land use practices and plans conform to principles of sound environmental management, including biodiversity, preservation, soil and water conservation and sustainable land management. Section 6.7, item 140 promotes optimal and sustainable use and management of environment and natural resources for the present and future generations.

National Forestry Policy (2001) It provides for the establishment, rehabilitation and conservation of watershed protection forests. It aims at promoting the rehabilitation and conservation of forests that protect the soil and water in Uganda's key watersheds and river systems.

Decentralisation Policy Strategic Framework (DPSF) 2013-2023: The Decentralisation Policy Strategic Framework (DPSF) 2013-2023 replaces the earlier one that was formulated in 2006. While re-affirming democratic decentralisation as Uganda's decentralisation policy, the DPSF (2013-2023) takes account of several important developments that have taken place since 2006, including changes in Uganda's national development planning framework and the emergence of Local Governments as agents of local development.

National Environmental Management Policy (1994): This Policy has provisions to control land degradation in the country and has specific objectives to integrate environmental concerns in all development policies, planning and activities at national, district and local levels, with full participation of the people.

The Uganda Wildlife Policy (2014:) Features of this policy that are relevant to IWRM include management of wildlife in a sustainable way to grant benefits for the present and future generations and promoting the public/private partnership in wildlife management.

Energy Policy for Uganda (2002) The policy aims at the following issues that are relevant to integrated water resources management among others like meeting the energy needs of Uganda's population for social and economic development in an environmentally sustainable manner.

National Climate Change Policy (2015) The policy is intended to guide all climate change activities and intervention in the country and to ensure that all stakeholders address climate change impacts and their causes through appropriate measures while providing sustainable development and a green economy. The Policy lays out specific strategies relevant to the water sector including: promotion and encouragement of water harvesting and efficient water utilisation; (ii) ensuring availability of water for production in water dependent sectors, (iii) promotion and strengthening of the conservation and protection against degradation of watershed and catchment areas, (iv) promotion of integrated water resources management (including underground water resources), and (v) improving and strengthening trans-boundary cooperation.

National Gender Policy (2007) The Uganda Gender Policy is an integral part of the national development policies. It is a framework policy for redressing gender imbalances as well as a guide to all development practitioners. The aim of this policy is to guide all levels (including in the water sector) of planning, resource allocation and implementation of development programmes with a gender perspective. The emphasis on gender is based on the recognition that "gender" is a development concept useful in identifying and understanding the social roles and relations of women and men of all ages, and how these impact on development. The Policy recognises women and children as key stakeholders in water provision, use and resource sustainability.

Other relevant policies include the following:

- i. The National Fisheries Policy (2004)
- ii. The Second National Health Policy (2010)
- iii. The National Irrigation Policy (2019)

1.4.4 National plans and strategies

The Uganda Vision 2040: The Vision provides for the development of a 30 year plan implemented through: (i) three 10-year plans, (ii) six 5-year National Development Plans (NDP), (iii) sector specific master and investment plans (SIPs), (iv) local government development plans, and (v) annual plans and budgets.

National Development Plan III (NDP-III): The theme of the Third National Development Plan (2020-2025) is "*Sustainable Industrialization for inclusive growth*". The Plan recognises the effects of climate change caused by deforestation, land degradation, wetland degradation and encroachment¹⁵. Program number five (5) of the NDP 3;

¹⁵ NPA (2020), National Development Plan (2020/2021-2024/2025), National Planning Authority, 2020.

Climate Change, Natural Resources, Environment, and Water Management, aims at 1) assuring availability of adequate and reliable quality fresh water resources for all uses; 2) increasing forest, tree and wetland coverage, restoring bare hills and protecting mountainous areas and rangelands; 3) maintaining and/or restoring a clean, healthy, and productive environment; 4) reducing climate change vulnerability and carbon footprint; 5) reducing human and economic loss from natural hazards and disasters; and 6) increasing incomes and employment through sustainable use and value addition to water, forests and other natural resources.

Climate Change Adaptation Strategy for the Water Sector (2011): The overall objective of the strategy is to reduce vulnerability to climate change, build adaptive capacity and resilience to climate hazards, and use a policy-based approach to implement development programmes that are climate proofed. A 14-vulnerability assessment was developed to identify key water related and cross-sectoral climate change vulnerabilities in Uganda.

Water for Production Strategy and Investment Plan (2009) This strategy and investment plan is aimed at promoting development of cost-effective and sustainable water for production supply and management for increased production and contribution to the modernisation of the agricultural sector in Uganda with a focus on poverty reduction and minimal environmental impacts.

National Irrigation Master Plan for Uganda (2010 – 2035) The main objectives of the master plan are to achieve economic growth and poverty alleviation through improving the country's irrigation potential in a sustainable way thereby mitigating the potential impacts of climate change. The Irrigation Master Plan also promotes improvement of existing schemes and of crop yields and through livelihood differentiation.

National Water Quality Management Strategy (2006) Water quality management plays a key role in WRM and it is one of the pillars and main objectives of any global WRM strategy. The main objectives of the NWQMS are the reduction of poverty through effective water quality management and the improvement of water quality standards to meet socio-economic and environmental needs. Ten strategic targets are identified both for the aquatic environment and monitoring of water quality at consumer level.

The National Forest Plan (2011/12-2021/22): Deforestation and encroachment for cultivation is one of the major threats recognised in Uganda. The existence and conservation of wet forest and riverine forest ecosystem depends on sound WRM and on the adoption of strategies that would alleviate the existing pressures on forest resources.

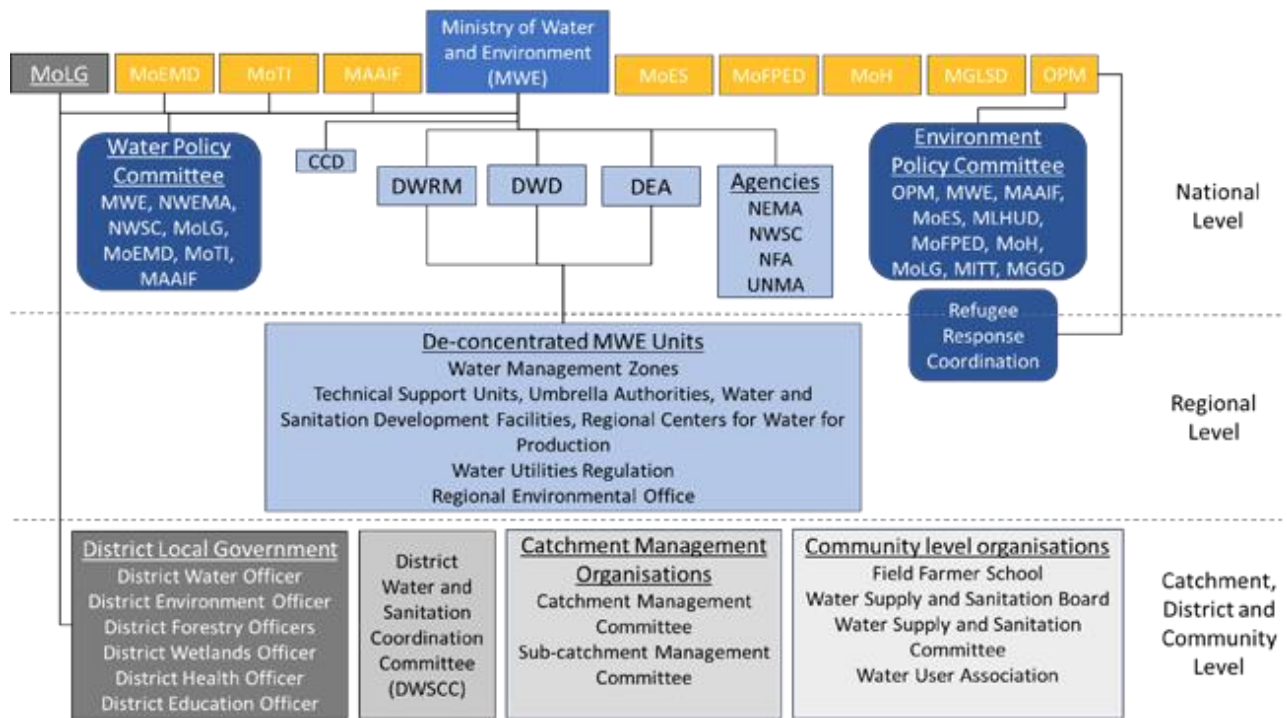
UWA Strategic Plan (2013-2018): The conservation and sustainable management of wildlife integrates with WRM issues by enabling wildlife access water and mitigating the conflicts between wildlife and domestic animals related to water access. The mission and strategic objective of the UWA strategic plan are: "To conserve, economically develop and sustainably manage the wildlife and protected areas of Uganda in partnership with the neighbouring communities and other stakeholders for the benefit of the people of Uganda".

Uganda Green Growth Development Strategy (2017/18-2030/31): Aims to ensure that the goals of the Uganda Vision 2040 and the NDPII 2015/16-2019/20 are attained in a sustainable manner. One of the 5 focus areas of the UGGDS is the Natural capital management and development, which focuses on tourism development, sustainable forestry, wetlands and optimal water resources management

1.4.5 Institutional framework

Currently, the overarching structure for implementation of Water Resources Management in Uganda cascades from the national level, the regional level, the catchment level and the district level as shown in Figure 1.

Figure 1: Water and Environment Sector Institutional framework



Source: MWE (2019) Water and Environment Sector Performance Report 2019

1.4.5.1 National level

The **Ministry of Water and Environment** is mandated to plan, manage, maintain, develop and coordinate all water and environmental sector activities in Uganda. The ministry is the ultimate authority responsible for water resources and environmental management in Uganda. It is mandated to manage and regulate all water resources, determine priorities for water development and management, and to set national policies and standards.

MWE operates through three directorates:

- The **Directorate of Water Resources Management (DWRM)** is responsible for the development and maintenance of water resources and supports the enforcement of national water legislation, policies and regulations. It also monitors, assesses and regulates the country's water resources through issuance of water abstraction and wastewater discharge permits. DWRM is the lead in agenda development for CbiWRM and has the responsibility to coordinate the Water Management Zones, as well as to mobilise resources and build the capacity of CbiWRM stakeholders.
- The **Directorate of Water Development (DWD)** has the responsibility for the development of large-scale water infrastructure. Its mandate is to promote and ensure the rational and sustainable utilisation, development and safeguard of water resources, and provide overall technical oversight for the planning, implementation and supervision of urban and rural water and sanitation services.
- The **Directorate of Environmental Affairs (DEA)** is the lead agency for environmental policy, regulation, coordination, inspection, supervision and monitoring of the environment and natural resources, and the restoration of degraded ecosystems as well as mitigation of and adaptation to climate change.

The Climate Change Department (CCD) of MWE is responsible for strengthening the country's implementation of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP).

The MWE collaborates with affiliated semi-autonomous bodies such as:

- The **National Forestry Authority (NFA)** is charged with the management of central forest reserves "on a sustainable basis and to supply high quality forestry-related products and services to government, local communities and the private sector".
- The **National Environment Management Authority (NEMA)** is mandated to coordinate, monitor, regulate, and supervise environmental management in Uganda. It is the lead in the development of environmental policies, laws, regulations, standards and guidelines. NEMA guides the government on sound environmental management in the country. It is the apex body for environmental law enforcement in Uganda, however, several functions have been delegated to other institutions as lead agencies in their respective fields. The responsibility of compliance

control is placed on gazetted environmental inspectors¹⁶ distributed in several institutions and agencies of government at central, regional and district level. According to the National Environment Act 2019, the board of NEMA is responsible for administration of a National Environment Fund aimed to support, among other activities: management of sensitive and fragile ecosystems; critical environmental restoration activities; research intended to further the requirements of environmental management, capacity building, environmental publications and scholarships; and innovations for environmental conservation and management by the public and private sector. An Environmental Police has been formed at NEMA, specifically trained in environmental issues. Their functions include sensitization, demarcation, control, issuing warnings, following up of cases, eviction, and prosecution. Within each district, there are offices that are in charge of the environment, forestry, wetlands, agriculture, fisheries, and planning among others; however, the structure varies from district to district.

- The **Uganda National Meteorological Authority (UNMA)** is mandated to offer weather and climate services, and to analyse scientific research findings and provide guidance on climate change.
- The **National Water and Sewerage Corporation (NWSC)** is responsible for the operation of sewerage services and the provision of water in urban centres. It is to invest generated revenue surplus in infrastructure improvements, new investments, and since recently, water source protection.

Other ministries that have direct relevance for water resources management due to their mandates and operations are:

- The **Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)**; mandated to lead on water use and management of on-farm agricultural water facilities, while MWE is responsible for off-farm activities
- The **Ministry of Tourism, Wildlife and Antiquities (MTWA)**; covers the water use and management of industries, commerce, wildlife and tourism
- The **Ministry of Trade Industry and Cooperatives (MTIC)** covers water use and management for industries and commerce
- The **Ministry of Energy and Mineral Development (MEMD)**; oversees the water use and management for hydropower generation and mining including activities related to oil exploration and exploitation.
- The **Ministry of Health (MOH)**; has the role of ensuring that everyone in Uganda has access to quality health services through primary health care, a process in which water plays a key role.
- The **Ministry of Works and Transport (MWT)**; oversees water use for navigation, and management of water resources during road and bridge construction
- The **Ministry of Local Government (MLG)**; responsible for the establishment of structures and frameworks for governance of districts.

Coordination is a key process for Integrated Water Resources Management (IWRM), which involves multiple stakeholders from different sectors, on different scales, and with different structures and interests. At the national level the following committees are relevant to integrated water resources management:

- The **Policy Committee on Environment**, established under the National Environment Act, is responsible for strategic policy guidance on environment. It consists of the Prime Minister (who chairs it), and Ministers responsible for: water and environment; agriculture, animal industry and fisheries; finance, planning and economic development; education, science, technology and sports; health; lands, housing and urban development; local government; tourism, wildlife and antiquities; trade, industry and cooperatives; works and transport; energy and mineral development; internal affairs; defence and veterans affairs; information, communications technology and national guidance. Its functions include providing guidance in the formulation and implementation of environmental and climate change policies, plans and programmes; and providing guidance on harmonisation of policies of Government with respect to the environment, natural resources, water and climate change.
- The **Water Policy Committee** was established under the Water Act Cap 152 and Water Resources Regulations (1998) of Uganda to assist and advise the Minister of Water and Environment and to promote inter-Ministerial and inter-sectoral coordination over a wide range of water resources management and development issues. The Water Policy Committee provides an avenue for promoting IWRM at national level and guiding the strategic management and development of water resources of the country. It is chaired by the Permanent Secretary, Ministry of Water and Environment.

¹⁶ <https://nema.go.ug/sites/all/themes/nema/docs/DESGINAYED%20ENVIRONMENTAL%20INSPECTORS.pdf>

- The **Water and Environment Sector Working Group (WESWG)** and **IWRM Working Group** which enable stakeholders to coordinate
- The **Inter-Ministerial Technical Committee** regarding Water for Production, comprising members from the MWE, Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF), Office of the Prime Minister, National Planning Authority and Ministry of Finance. It meets on a quarterly basis to coordinate investments and works regarding water for production.
- The **Wetlands Advisory Group (WAG)**, which is a technical group dedicated to wetlands. The WAG improves coordination on wetlands issues, particularly on the issue of dry-land rice
- The MWE-DWRM has created **Water Net**, a network for building capacities of stakeholders connected to the water sector.

1.4.5.2 Regional level

Water Management Zones: As a result of the de-concentration of the management of water resources, DWRM created four Water Management Zones (WMZ) following hydrological boundaries. They operate on regional level with the objective of bringing the central services closer to the stakeholders. Their primary role is to facilitate sustainable development of the water resources for the economic and social benefit of the people in the catchment and to implement the water management measures needed to protect and conserve the catchment and its water resources, ensure sustainability and reduce or resolve conflicts over resource use. The WMZs provide for an interactive interface between the central and the local government level sector actors. They coordinate the activities of partners and monitor and evaluate performance. They facilitate establishment of CMOs and support them and Local Governments to implement relevant aspects of the de-concentrated functions and services of the DWRM. The WMZ offices are staffed by officials appointed by the Ministry of Water and Environment, to whom responsibility has been transferred to implement defined functions of DWRM. This is meant to strengthen linkages between the central DWRM and the local governments and enhance establishment of stakeholder participation. The four WMZs were established in the country: Victoria WMZ (based in Mbarara), Albert WMZ (based in Fort Portal), Upper Nile WMZ (based in Lira) and Kyoga WMZ (based in Mbale).

The Directorate of Water Development (DWD) established the **Water and Sanitation Development Facility (WSDF)** as a mechanism for supporting water supply and sanitation facilities for rural growth centres and small towns, intended to promote a demand-responsive approach. They design and construct water supply and sanitation facilities, carry out related community mobilization activities and set up operation and maintenance structures. Investment for water and sanitation in small towns, town boards and rural growth centres is funded through WSDF. They currently operate through 4 branch offices currently established in Mbarara (southwest), Lira (north), Mbale (east) and Wakiso (centre).

Six **Rural Water Regional Centres**, formerly Technical Support Units (TSUs), established by DWD at the regional level support capacity building of district-based structures. This involves training, technical advice and support supervision of districts to enable them to effectively implement their roles in the rural sub-sector. The mandate also covers water for production. The six Rural Water Regional Centres (RWRC) are located in Lira, Moroto, Mbale, Mbarara, Fort Portal and Wakiso districts.

Water for Production Regional Centres (WFPRC) are responsible for promoting development of water for production through construction of valley tanks and dams, and irrigation schemes. They currently operate through 3 branch offices currently established in Mbarara (west and centre), Lira (north) and Mbale (east)

Umbrella Authorities (UA) of Water and Sanitation— formerly Umbrella Organisations (UO) – are responsible for managing gazetted water and sanitation schemes. They operate through six offices in Lira (North), Moroto (Karamoja), Mbale (East), Wakiso (Central), Kyenjojo (Mid-West) and Kabale (South-West).

The Directorate of Environmental Affairs has established **offices for the wetland department on the regional level**.

1.4.5.3 Catchment Level

At the local level, the Ministry of Water and Environment is represented by the Water Management Zone with the aim of bringing services closer to the people. The Water Management Zone establishes Catchment Management Organisations (CMO) comprising several bodies.

- The Catchment Stakeholder Forum (CSF)** brings together all actors on catchment management. The CSF defines key issues related to water resources in the catchment that require consideration in order to effectively protect, manage and develop water resources. It provides input to the CMP for coordinated, integrated and sustainable development and management of water and related resources in the catchment, including their implementation status.

- ii. **The Catchment Management Committee (CMC)** is composed of representatives of all relevant stakeholder groups (government, politicians, and community-based organisations, NGOs, water users, media, academic institutions, and private sector) and collaborates with the WMZ during the formulation of a Catchment Management Plan and plays a steering role during its implementation. It endorses the CMP and presents it to the Catchment Stakeholder Forum for information purposes. The CMC acts as an executive board for the Catchment Management Organisation.
- iii. **The Catchment Management Secretariat (CMS)** provides support to the Catchment Management Committee in coordinating the planning and implementation of activities in the catchment as well as following up of recommended actions by the stakeholders. The CMS acts as an administrative secretariat for the Catchment Management Committee as well as the Catchment Technical Committee.
- iv. **The Catchment Technical Committee (CTC)** forms the technical arm of the CMO and supports the CMC in their tasks. The CTC brings technical expertise and knowledge during the formulation of the Catchment Management Plan, puts into operation and sometimes implements programmes and projects from the plan, and generally ensures that the different districts collaborate to implement the plan. It comprises technical people from government, NGOs, private sector, development agencies and other relevant organisations in the catchment.

1.4.5.4 Community Level

The NGOs involved in water sector activities have formed a very important network with over 170 members that is called Uganda Water and Sanitation Network (UWASNET) for improved coordination of their activities in the water sector. The UWASNET provides a platform for constructive engagement with government and donors in the water sector and serves to promote the sharing of experience between the members.

The Water Act provides for the formation of Water and Sanitation Committees, Water User Groups, and Water User Associations, as local community level organisations, to ensure the sustainability of the water supply and sanitation facilities through proper management, operation and maintenance by the user communities. Upon construction of a water source, a Water Users Committee (WUC) is usually established to take responsibility for its operation and maintenance.

The NGOs and CBOs have important functions in the implementation of CbIWRM such as activities related to protection of water sources and supply facilities, like maintaining tree or grass cover in the catchment area of water sources, reducing stream pollution and abstractions, resolving conflicts from sharing of water, water supply (for example gravity flow schemes), water harvesting (water conservation and efficient use technologies), awareness, catchment/watershed management, and community mobilisation and citizen participation.

The private sector plays a very important role in the water and environment sector by providing the following contributions: private sector contractors and consultants undertaking design and construction works in water supply and sanitation; private hand pump mechanics and scheme attendants providing maintenance services; private operators managing piped water services in small towns and rural growth centres; as well as private forest owners with registered forests and processing of forest products in the forestry sub-sector.

2 APPRAISAL OF CATCHMENT BASED IWRM IMPLEMENTATION IN UGANDA SINCE 2010

In this section, the achievements realised, and challenges met during the implementation of the 2010 strategy for operationalisation of Catchment based IWRM are highlighted.

2.1 Catchment based IWRM

Catchment based IWRM (CbiIWRM) is the translation of IWRM principles and elements to catchment scale: It is about sustainable management of shared water and associated natural resources within a defined basin or catchment area for the benefit of all resource users (or stakeholders) living and/or working in the area while at the same time rehabilitating and protecting the environment and relevant eco-systems. In the field of WRM, a substantial amount of engineering and scientific tools has been developed for assessing the water resources in defined river basins, determining impacts of climate change as well as land-use changes relevant for the availability of water resources.

Catchment management is a subset of environmental planning, which approaches sustainable resource management from a catchment perspective in contrast with a piecemeal approach that artificially separates land management from water resources management. Thus, CbiIWRM is a holistic concept that addresses common problems in an integrated manner based on the strengths, concepts, and tools of each sector and based on the availability of natural resources and their efficient use by not comprising with (relevant) ecosystems. By embedding collaborative working within a catchment, bringing together a range of stakeholders to support integrated WR management, pool resources and expertise, and deliver cross-cutting environmental improvements, CbiIWRM enables not only more effective water

management but also accelerated development and sustainable water use.

Box 2: Vision and Mission of the Water and Environment Sector

Vision: 'Sound management and sustainable utilisation of Water and Environment resources for the betterment of the population of Uganda.'

Mission: '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'

At national level, IWRM is about implementing the functions of the relevant government MDAs in a more coordinated manner, thereby leveraging resources and maximising efficiency towards achieving the vision and mission of Water and Environment Sector (Box 2) and contributing to attainment of the objective for the National

Water Policy: *"To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations and with the full participation of all stakeholders."*

CbiIWRM has got a long history and it is currently implemented in several countries: River Basin Authorities have been established on all continents in the past, and at all different levels; ranging from big rivers (Box 3) to small catchment areas.

Box 3: Examples of river basins where Catchment based IWRM is implemented

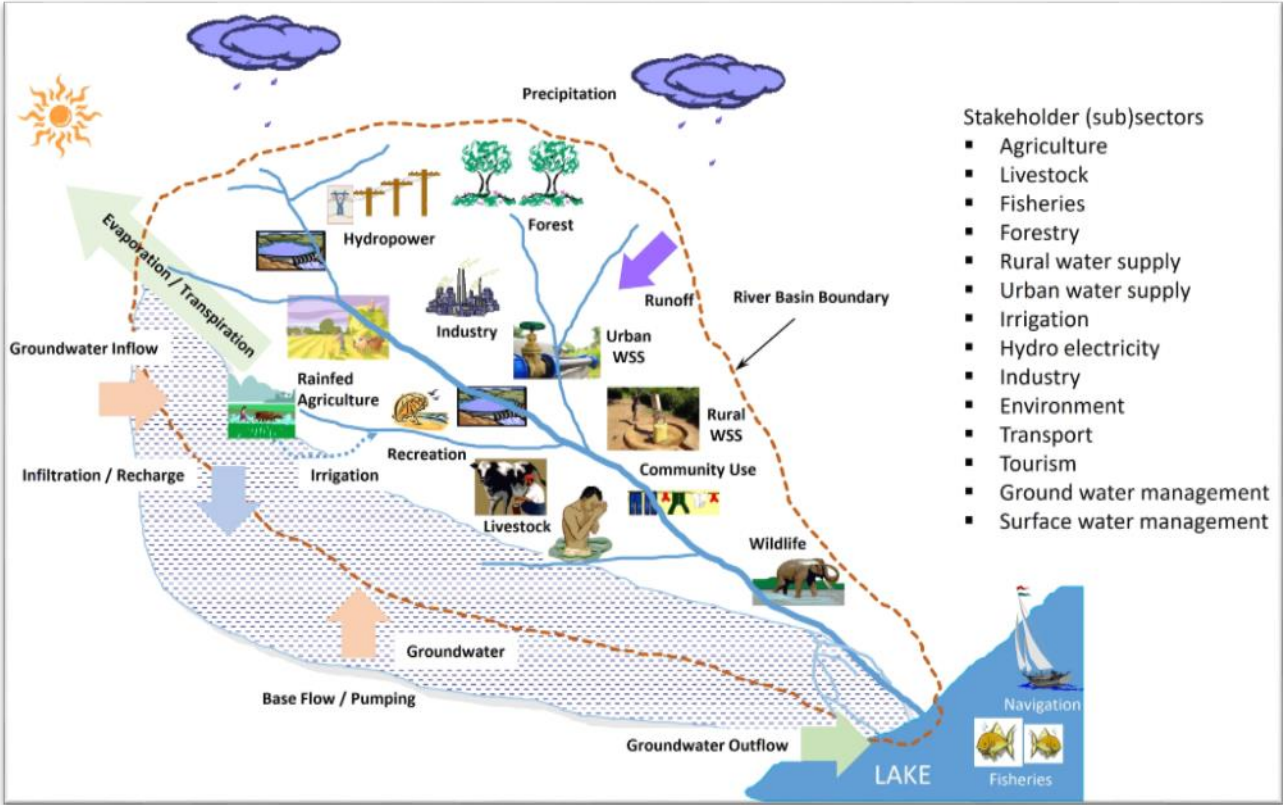
Tennessee River (USA): The Tennessee Valley Authority (TVA) was created as a federal corporation in May 1933 in order to develop the Tennessee River and its tributaries for the purpose of navigation, flood control, and the production and distribution of electricity. It also provided reforestation, erosion control, industrial and community development, improved farming techniques, fertiliser development, and establishment of recreational facilities. Today it remains a principal manager of water resources across a large, regional river basin. <https://www.tva.com/about-tva>

Nile River Basin (Africa): For the first time in the Basin's history, an all-inclusive basin-wide institution was established, on 22nd February, 1999, to provide a forum for consultation and coordination among the Basin States for the sustainable management and development of the shared Nile Basin water and related resources for win-win benefits. www.nilebasin.org

Limpopo River (Southern Africa): Limpopo Basin Permanent Technical Committee (LBPTC) between Botswana, Mozambique, South Africa and Zimbabwe was established in 1986, to advise the parties on issues regarding the Limpopo River basin. http://www.limpopo.riverawarenesskit.org/LIMPOPORAK_COM/EN/GOVERNANCE/WATER_GOVERNANCE_IN_THE_LIMPOPO/LIMCOM.HTM

CbiWRM enables the balancing of competing needs for and demands on Water Resources, therefore contributing to achieving the sustainable management of the Water Resources: In a typical catchment (Figure 2) are multiple stakeholders; implementing activities which affect (and are affected) differently by the status of water and related resources. These stakeholders place varying demands on the shared, and finite, water and associated resources, thus with the resources being a key link, the stakeholders depend on each other. Yet, the stakeholders often act independently by sector and in areas defined according to administrative boundaries. Because these resources transcend sector and administrative boundaries, their management is, often, beyond the jurisdiction of a single stakeholder.

Figure 2: A typical catchment



As the relative abundance of the water resources reduces following population growth and climate change, overuse of –and often conflicts over– the few remaining resources increase. Uganda’s growing population and its rising need for food, water and energy are likely to increase water demand almost ten-fold by 2050 while an increasing incidence of drought will reduce water availability, expected to result in severe water shortages during most months of the year.¹⁷ In the energy sector, most energy is currently provided by biomass in unsustainable ways through deforestation. Without action, by 2050, there will be a gaping deficit due to surplus demand – not to mention that climate change itself will reduce the availability of biomass. The need to manage the resources sustainably (i.e., for the present and future generations) while managing competition and conflicts between different uses/users becomes even more pressing. Therefore, it is necessary to form alliances among these many stakeholders, to coordinate better the management and allocation of the resources considering their availability and stakeholder prioritised needs.

CbiWRM presents a suite of climate change adaptation measures: Climate-related drivers combined with non-climate stressors are projected to increase water stress in localised pockets. Extreme increases in water extraction rates for large-scale surface water irrigation could have impacts in localised areas. The projected damage associated with climate change inaction for agriculture, water, road infrastructure and energy (2010-2050) is estimated to cost

¹⁷ CDKN (2015) Economic assessment of the impacts of climate change in Uganda: Key results

between US\$7-US\$11 billion per annum;¹⁸ therefore impacting negatively on employment, job creation and poverty alleviation.

2.2 Elements of the 2010 Strategy for Operationalisation of CbiWRM

The 2010 study for operationalisation of Catchment based Integrated Water Resources Management defined four strategic areas comprising the “2010 CbiWRM Strategy”.

i. Delineation and establishment of WMZs following hydrological boundaries

This element focussed on delineation and establishment of WMZs following hydrological boundaries to safeguard against the inherent risks of additional district fragmentation, or eventual regionalisation, resulting in additional boundary mismatches between the WMZs and administrative units.

ii. Establishing a framework for operationalizing CbiWRM

This element focussed on building long-term partnership arrangements with authorities, agencies and institutions with legal mandates over aspects of water and related resources management; encouraging stakeholder ownership of the CbiWRM approach; and ensuring widespread commitment to the approach’s strategic objectives in order to generate buy-in and cooperation. Structures identified to play coordination or technical advisory roles towards achieving this element include: the Policy Committee on Environment, the Water Policy Committee, the Water and Environment Sector Working Group, the Integrated Water Resources Management Thematic Team, Catchment Management Committees, Catchment Technical Committees, district level mandated committees, community-based committees, and parish and or village level structures.

iii. Stakeholder engagement and participation strategy

This element aimed at, among other goals: increasing awareness; assuring buy-in to objectives; and strengthening partnerships working through such mechanisms as formal and informal agreements (regarding implementation) and strengthening existing relationships with stakeholders at different levels including statutory bodies, NGOs, private sector, and research institutions.

iv. Capacity development.

Based on the principle that capacity development is not only about human resource development and acquisition of skills, but also developing the capacity to use the skills, this element emphasised developing policies, principles, strategies, standards, guidelines, methodologies and procedures for CbiWRM functions and plans; providing facilities and equipment to facilitate effective resource monitoring and assessment as well as data recording, analysis information management and exchange, and its dissemination and use; targeted competences and skills development for the WMZs; staffing of WMZ offices; and changing attitudes, imparting knowledge, and improving skills levels at community level.

2.3 Achievements registered and challenges met during implementation of the 2010 CbiWRM strategy

Below are the achievements realised and challenges met during the implementation of the 2010 strategy for operationalisation of Catchment based IWRM:

2.3.1 Key Achievements

2.3.1.1 Improved performance and delivery of water resources management functions

In 2011 the Ministry of Water and Environment (MWE) through the Directorate of Water Resources Management (DWRM) established the four WMZs namely Albert (office in Fort Portal), Kyoga (office in Mbale), Victoria (office in Mbarara) and Upper Nile (office in Lira), based on the major hydrological basins (Figure 3). The WMZs are currently headed by officials at Principal or Senior Officer level and staffed with:

¹⁸ MWE (2015) Economic Assessment of the Impacts of Climate Change in Uganda, Final Study Report. Available from: http://cdkn.org/wp-content/uploads/2015/12/Uganda_CC-economics_Final-Report2.pdf

- hydrogeologists, in charge of groundwater issues;
- hydrologists, in charge of surface water issues;
- sociologists, in charge of community management and awareness raising issues including a liaison role between the WMZ and CMOs (on behalf of the Team Leader);
- water quality analysts;
- officers in charge of water resources regulation issues; and
- economists in charge of resource mobilisation

Figure 3: Water Management Zones



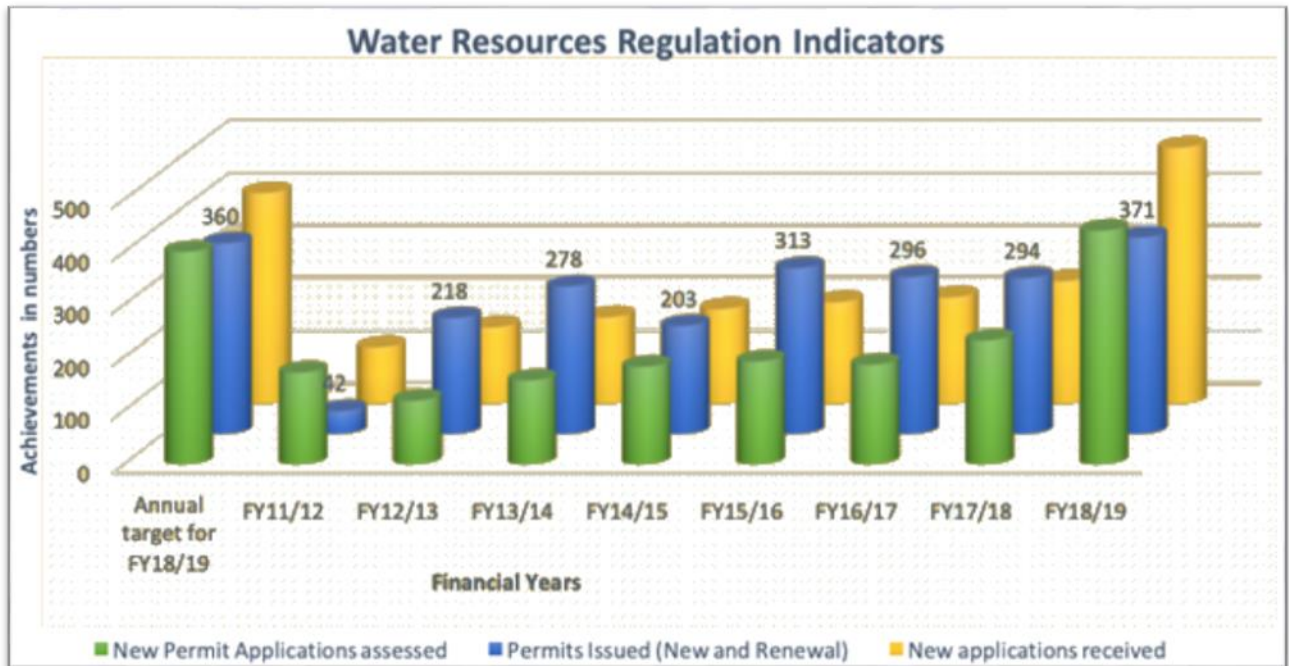
Source: Catchment Management Planning Guidelines, 2019

Consequently, a number of DWRM functions formerly performed at central level have been wholly or partly de-concentrated to the WMZs. The functions de-concentrated to the WMZs include water resources monitoring and assessment, water quality testing, water permits assessment, compliance and enforcement, review of environmental impact assessment reports and awareness raising. Policy and legislation, national water strategy development and implementation, national level coordination, transboundary waters and technical backstopping of the zonal offices remain core functions of DWRM at the central level.

This physical presence of DWRM in the regions, through the WMZs, has improved the timeliness of water resource management service provision. Performance of water resources planning, and regulation functions has continued to improve over the years as a result of improved enforcement and compliance monitoring most especially through the strengthened Water Management Zones. The de-concentration of water resources management functions through the four WMZs has brought services such as compliance monitoring, compliance assistance and awareness raising closer to the permit holders. This has ultimately improved performance in terms of water permits issuance and

compliance monitoring and enforcement. As shown in Figure 4, the number of water permit applications has been increasing. The increasing trend of water permits issuance will continue as the capacity of WMZs improves through additional staff, facilities and financial resources.

Figure 4: Water Permit applications and Issuance (2011/12 -2017/18)



Source: Water and Environment Sector Performance Report 2019

In addition, compliance to the provisions of the Water Act and permit conditions for wastewater discharge, drilling, groundwater and surface water abstraction permits has generally improved (79% in 2018). As part of CbiWRM engagement with large water users, a number of industries including cement, sugar processing and breweries have improved compliance levels by establishing effluent treatment plants, recruiting personnel for environment management, and improving house-keeping policies and other internal regulatory mechanisms.

The establishment of WMZ offices has led to an improvement in water quality monitoring. For instance, the frequency of sample collection from the national water quality monitoring stations (119 in number) has improved. Generally, presence of regional WMZ offices has also increased the demand for WMZ services (e.g. laboratory services, water resources technical guidance offered to local governments, water users and other stakeholders) as stakeholders do not have to travel to Kampala to receive these regular services.

2.3.1.2 Preparation of guidelines and manuals for CbiWRM implementation

Several documents to guide stakeholders in the implementation of CbiWRM have been developed by the MWE through the DWRM:

- i. Water source protection guidelines (2013) developed to guide stakeholders on preparation and implementation of source protection plans for water supply, water for production and hydroelectricity infrastructure projects. The guidelines “help the user identify the risk to their water source and to engage the people and organizations responsible for the problem in a positive way that lead to a mutually beneficial outcome.” While piloting the application of these Guidelines around various water infrastructures projects, useful information has been collected that will guide improvement of the Guidelines. Further, a strategy for operationalisation stakeholder financial contribution to source protection has been developed.
- ii. Uganda Catchment Management Planning Guidelines (2014 and 2019) developed to guide stakeholders on the preparation of catchment management plans. Based on the experiences gained in utilising the 2014 edition, the Guidelines were revised to mainstream climate change issues. In 2019 a professional review, editing and production of popular versions of the Guidelines was done.
- iii. Catchment Management Organization (CMO) Procedures Manual (2017) developed to guide stakeholders on: 1) the process of establishing a CMO, 2) the structure, roles and responsibilities of a CMO, and 3) its internal operations and relationship with stakeholders within and outside the catchment. Based on experiences

gained while using the Manual to establish CMOs across the country, the 2017 version was revised and launched in 2019 for use by stakeholders.

- iv. A DWRM Capacity Development Strategy and plan (2017/21) was developed to provide for a holistic approach to capacity development, at the individual level, organizational level and also taking into account the enabling environment. The strategy has been the basis for the trainings conducted for WMZ staff, CMPs and other stakeholders (refer to section 2.3.1.6 below).
- v. Other guiding documents include WMZ level strategies and Action plans, for instance for Upper Nile WMZ and KWMZ.

In addition to the guiding documents, a National level Water Information System (WIS) at central level as well as WMZ level databases have been developed for Kyoga and Upper Nile WMZs. The WIS provides *a central access point for water information, transforming the current scenario of fragmented data across sectors and agencies, to a new paradigm of effective data collection, integrated and harmonized data warehouse and dissemination to all users*¹⁹. The next step is the full operationalisation of WIS and the two WMZ level databases as well as developing databases for the other two WMZs based on lessons learned. Further, the process of upgrading the Water Resources Monitoring Network from manual to telemetric data collection has been started; this is supported by central government's focus on ICT.

2.3.1.3 Improved planning and implementation of Water Resources Management

Planning and implementation of WRM at the catchment level has been enhanced through implementation of the CbiWRM framework.

The source protection guidelines have guided stakeholders in preparation of water source protection plans, for instance for water supply schemes for the towns of Arua, Bushenyi, Mbale, and selected hospitals in the Karamoja region, among others. The planning process involves the establishment of a multi-stakeholder Water Source Protection Committee to oversee and coordination of implementation of the plan. The implementation of interventions from these source protection plans is at different stages. For example, for Arua town the restoration of sections of Enyau river by the NWSC and the Enyau Source Protection Committee is on-going. It involved the implementation of biological and structural measures for instance tree planting to reduce soil erosion and construction of gabions to stabilise the riverbanks. In addition, groups of youths who had been previously engaged in the business of washing cars in the river to earn an income were provided grants to start alternative income generating activities.

Following the Guidelines for Catchment Management Planning, Catchment Management Plans, SCMP, MCMPs (Annex 3), have been developed in a participatory stakeholder-driven process to guide stakeholders on the key issues in the respective catchments that need immediate, medium term and long-term response. The plans provide priority measures needed to manage water and related resources in a manner that considers, among other aspects, the needs and aspirations of relevant stakeholders. Stakeholder interest in implementing the CMPs is increasing. Several development partners, CSOs, and private sector players are implementing or financing the implementation of CbiWRM related interventions²⁰. Government agencies are also either deriving projects from the CMPs or aligning their programs to the CbiWRM approach in general. For example, from the Awoja CMP, the MWE developed the Sipi Integrated Water Resources Management and Development Project implemented during 2018. In addition, the third Northern Uganda Social Action Fund (NUSAF 3) is aligned to the CbiWRM approach. Efforts to mainstream the developed CMPs into planning and budgeting processes have started at district level and will be rolled out across the country.

CMO structures (especially the CSFs, CMCs, SCMCs, and in some catchments MCMCs) have been established in accordance with the CMO procedures Manual developed by DWRM. A CMO is a multi-stakeholder body that facilitates collaborative water resources management, playing a pivotal role in developing and coordinating implementation and monitoring of the CMP.²¹

¹⁹ <https://wis.mwe.go.ug/>

²⁰ As of June 2020, the main partners in CbiWRM included 6 Development Partners (FAO, GIZ, EU, World Bank, DFID, DANIDA, Austria Aid, African Development Bank), 15 Civil Society Organisations (IUCN, RAIN, Welthungerhilfe, CARE, CRS, ACF, IRR, WWF, PROTOS, JESE, TBG, Kabarole Research Center, ACODE, ECOTRUST, ACORD), and 4 companies (Coca Cola, Kinyara Sugar Limited, Total, Nile Breweries)

²¹ MWE (2019) Catchment Management Organisations Procedure Manual

2.3.1.4 Improved stakeholder participation in and awareness of Water Resources Management

CbiWRM efforts have also increased the level of awareness of catchment restoration issues at all levels (national, regional, catchment and community). Interactions between WMZ officers and stakeholders have improved awareness about water resources management among stakeholders including district local governments, water users in the private and public sectors, and in communities. Some of these stakeholders have become advocates for water resources management as well as stewards for conservation of natural resources.

In addition to the participation in catchment management planning, this process has greatly improved stakeholder awareness about the need for rehabilitation of the degraded catchment areas has greatly increased among stakeholders. Several platforms have been used for awareness creation, including printed, audio and visual material

Some communities are now using integrated land management practices like climate smart agriculture including mulching, terracing, trenching, and other soil and water conservation practices. Implementation of CbiWRM has facilitated several restoration interventions especially in degraded hotspot areas, for instance in the catchments of the following rivers: Nyamwamba, Mubuku and Sebwe (Kasese district), Tokwe and Humya (Bundibugyo district), Semuliki (Ntoroko district), Mpanga (Kabarole District), Sipi (Kapchorwa district), and Rwizi (Mbarara district). Further, it has also enhanced the participation and contribution of women in water management and restoration activities. Currently, the percentage of Water Source Committees (WSC) with women holding key positions is at 85% while 53% of Catchment Management Committees (CMCs) had women holding key positions in FY 2017/18. CbiWRM initiatives have also increased the implementation of water source protection measures within communities. This is also as a result of increased awareness and feedback from communities. There is greater awareness about the Water Source Protection guidelines as local stakeholders regularly updated on these and other emerging reforms in water resource management.

2.3.1.5 Improved collaboration among stakeholders

CbiWRM has also strengthened and improved the level of collaboration among stakeholders at the different levels:

- i. CbiWRM has strengthened transboundary collaborative efforts for joint restorative projects between Uganda and other riparian states. The multinational lakes Edward and Albert Integrated Fisheries and Water Resources Management Project (LEAF II) is being implemented jointly with the Democratic Republic of Congo (DRC) through the platform of NBI/Nile Equatorial Lakes Subsidiary Action Program; Nyimur Multi-Purpose Water Resources Development and Management Project is being implemented with South Sudan in the River Aswa Basin; Sio-Malaba-Malakisi Basin Management Project in which CMPs have been developed for the shared catchments of Sio and Malaba/Malakisi. This has increased knowledge sharing and human capacity development.
- ii. CbiWRM has also strengthened the level of collaboration between GOU, CSOs and the private sector in tackling issues of water resource sustainability. Several Public-Private Partnerships have been established in different catchments. Some companies (e.g. Coca Cola, Nile Breweries Limited, Kinyara Sugar etc.) whose production processes are affected by the status of water and related resources have started committing resources to CbiWRM. Other companies have invested in novel technologies for treatment of their waste products and adopted cleaner production processes. DWRM also entered into Memoranda of Understanding with CSOs (e.g. IUCN, RAIN foundation, ACODE, JESE, Uganda Red cross, Kigezi Diocese water and sanitation program, among others) regarding the implementation of CbiWRM.
- iii. Collaboration and coordination among the MWE de-concentrated structures (Including RWRCs, WSDF, UOs) has improved. Co-location of all de-concentrated entities has enhanced information sharing.
- iv. The formation of CMOs, preparation and implementation of CMPs have strengthened interactions and dialogue among catchment stakeholders for instance local governments, civil society organisations, private sector, academia, among others, towards developing a common vision for their catchment. Further, the preparation and implementation of water source protection plans has strengthened the collaboration among water users.
- v. The early success of CbiWRM efforts has also led to the establishment of new partnerships with academia, Members of Parliament, cultural institutions, faith-based institutions, media as well as collaboration with prominent individuals like music artists and sports personalities. This has enhanced visibility of CbiWRM efforts as these non-traditional champions are also galvanising communities for water resource management.

2.3.1.6 Enhanced capacity for Water Resources Management

Implementation of CbiWRM has also enhanced the capacity of stakeholders at various levels in Water Resources Management:

- i. The Water Resources Institute was established to offer integrated capacity building courses for officers joining the water and environment sector in the country, conduct basic and applied research, implement outreach activities related to research and human resources development, and promote policy dialogue on water related issues. The WRI has partnerships with several institutions²² with whom it has collaborated to deliver short courses,²³ seminars and conferences²⁴ aimed at knowledge and information sharing among stakeholders. As part of the outreach activities, the WRI organises the annual Uganda Water and Environment Week (UWEWK) since 2018. UWEWK comprises national and regional level activities such as sensitisation campaigns, applied trainings, exhibitions, talk shows, policy dialogues, and workshops targeting national and international participants.
- ii. The Water Management Zones carry out capacity building interventions for CMO structures such as trainings²⁵ and learning exchange visits. Through the exchange visits committee members learn from and share experiences with their counterparts in other parts of the country.
- iii. In collaboration with Makerere University, the Ministry developed a National Framework for Human Capacity Development for Junior, Senior and Technician professionals in the Water and Sanitation sector in Uganda. The framework provides operational guidelines and procedures for capacity development for sector professionals at different levels, with the overall objective of improving the quality of human resources and service delivery in the sector.²⁶

In terms of institutional capacity, the following achievements are notable:

- i. Regional offices of the DWRM have been established, have a basic number of staff and equipment to perform de-concentrated functions to a reasonable extent.
- ii. Regional water quality testing laboratories have been constructed at the WMZ offices. Of the four Regional Laboratories, three have basic laboratory infrastructure to perform water tests, these are: Mbale, Lira and Fort Portal.
- iii. The monitoring network is also being improved including providing advice and capacity development services related to investment in groundwater development. The upgrading of the surface and groundwater monitoring stations is on-going, to enable capturing of real time data but also reduce on the cost of operating the stations.

2.3.2 Key Challenges

The achievements notwithstanding, several challenges have been encountered during the implementation of CblWRM in Uganda. Refer to Annex 2 for details. These relate to:

2.3.2.1 Inadequate financing

The operationalisation of CblWRM requires considerable financial resources. Activities such as: developing and implementing CMPs, facilitating CMO meetings, conducting stakeholder engagement, coordinating of WMZs etc. all require steady funding. Currently, CblWRM operationalisation relies heavily on GOU through the MWE budgetary allocation, supported by external donors and development partners. Currently, donor-allocations to the water and environment sector are on a decline and thereby affecting projects/programs that are central to implementing CblWRM. While the sector budget share to the National budget respectively increased from 2.9% to 5.0% between the FY 2017/18 and FY 2018/19, such funding is often unsteady and inadequate financing remains a challenge to the sector.

Generally, investments in maintaining hydrological services have not been given the same priority as investments with more direct economic benefits to investors. This notwithstanding, several CSOs have come in to directly support IWRM activities. For instance, in 2019 investment in IWRM by CSOs amounted to UGX 4.55 Billion which represented 67% increase from 2018. Several flagship donor-funded projects like the LEAF II, EURECCA, IWMDP etc. are providing

²² such as WaterAid, Global Water Partnership, World Bank, UNHCR, GIZ, IUCN, Lake Victoria Basin Commission, Uganda Drillers' Association, and Makerere University

²³ for example, on IWRM as a tool for adaptation to climate change; Implementation of SDG 6 indicators; implementation of Water Source Guidelines; Catchment management approach and procedures; Water governance and international water law

²⁴ for example in 2019, MWE and Makerere University jointly held the First Great Lakes and Catchment Management (1st GLACAM) Conference at the Water Resource Institute with the aim of providing a platform to water and land use researchers, practitioners, and policy makers to evaluate the inextricable link between water and environment resources as well as reflect on strategic options for achieving SDG 6

²⁵ on various topics including role and responsibilities of the different committees; natural resources related laws and policies; group dynamics and conflict resolution; and technical aspects of water resources management.

²⁶ MWE (2019) Water and Environment Sector Performance Report 2019

critical support and are part of an emerging consensus around the importance of financing towards a catchment-based planning approach to water resources planning and development.

Limited funding available for operationalisation of CbiWRM is a consequence of several factors:

- CbiWRM as a concept is relatively new in the country, its added value is not yet fully appreciated by stakeholders outside MWE. This is largely because CbiWRM does not offer immediate and direct benefits but rather offers sustainable solutions to an emerging water resources crisis. Generally, WRM does not enjoy as much attention as “hardware infrastructure” interventions during budgetary allocation by government (at central and district level) attributed largely to the difficulty to prove the contribution of WRM to livelihoods or generally the economy. Further, for private sector players, the linkage between their production (and therefore profitability) and the status of water and related resources is not obvious. For communities (or generally, water users) and developers of water supply infrastructure, the impact of the status of natural resources (e.g. forests, wetlands, grasslands) on water quality and quantity is still fuzzy. This challenge is compounded by inadequate empirical evidence on the impact of the implementation of the concept for example on livelihoods and the economy (which is a fundamental basis for budget allocation at central government level) or impact on a private company’s profitability (which is a key decision-making criterion for resource allocation). In general, the limited appreciation of the CbiWRM also stems from the limited capacity to implement infrastructure or land management programs that address WRM issues at catchment level. At present, the scale of implementation is too small for results to become sufficiently visible: for example, soil erosion, sedimentation of waterways and reduced stream flows still prevail even where WRM interventions have been implemented. Thereby the impact of CbiWRM remains difficult to assess by outsiders.
- another limitation for funding for CbiWRM efforts has been the prevailing reality that all non-tax revenue collected from permit application processing fees, annual water use fees, annual wastewater discharge fees etc. is remitted back to the Consolidated Fund or the National Treasury and is not ploughed back to directly support CbiWRM activities. According to the Public Financial Management Act 2015, all government agencies/parastatals are required to declare their annual internally generated funds for approval by parliament as appropriation in aid. This indirectly affects the collection of such revenue and limits the on-the-ground implementation of CbiWRM activities.
- poor compliance and enforcement remain twin challenges that limit collection of revenues for CbiWRM activities. This challenge has both a demand side and supply side imperatives. Some WMZs have limited human resource capacity to undertake regular enforcement of guidelines while several companies have inadequate and inefficient wastewater treatment plants due to financial and human resource capacity in addition to operational efficiency.
- revenues generated from Water and related resources (for instance taxes and fees from permits) are collected on the consolidated fund and not earmarked for use in water resources management close to its point of origin. This leads to low acceptance of this taxation instrument by the persons and companies contributing and makes the intended steering functions for sustainable water resource use difficult to implement. It also provides little incentives for the collecting government bodies to enforce and monitor the permits as the funds will most likely not benefit the activities in their area of jurisdiction.
- one of the roles of CMOs is mobilisation of resources for their operations and implementation of CMPs. However, their current status limits their reach. The CMOs are currently voluntary bodies without the legal status that funding agencies (including government) would require as prerequisite for collaboration.

2.3.2.2 Inadequate coordination and collaboration at all levels

Certain roles and responsibilities related to the implementation of CbiWRM need to be carried out across a variety of institutions²⁷. This emphasises the need for collaboration and coordination among these institutions. However, with a few exceptions, these institutions still plan and implement their work in silos with no apparent synergies between them for effective Water Resources Management. Whereas the Water Policy Committee provides a platform for high-level policy collaboration, there is limited inter-ministerial engagement especially with regards to project development and implementation. At regional level, there is no established mechanism for collaboration between the different de-concentrated units of the Ministry of Water and Environment.

²⁷ this description includes MDAs of central governments as well as committees at District Local Government Level

Largely because it is a relatively new concept, CbiWRM is so far not well understood by stakeholders beyond the water and environment sector especially how it relates to concepts that those stakeholders are familiar with. This limits collaboration and engagement in CbiWRM by these sectors. For example, stakeholders within the agricultural sector, and other government programs such as third Northern Uganda Social Action Fund (NUSAF 3), uses the “watershed” concept; where the term “watershed” is hydrologically defined in a similar way to a “catchment”. However, since soil management -not water resources management- is their primary focus, the holistic concept of CbiWRM may not generate immediate interest among such sectors.

Coordination between different committees at district level regarding implementation of CbiWRM is also still challenging as the different committees plan and implement their activities in isolation. Further, the CbiWRM related activities of stakeholders (e.g. NGOs, private sector) are not yet well coordinated by the CMOs.

2.3.2.3 Inadequate human and institutional capacity and management instruments

The sectors still face capacity constraints, in terms of technical skills at different levels, for implementation of CbiWRM. In some cases, staff capacity is inadequate in terms of numbers and seniority to effectively undertake CbiWRM activities at national, regional and catchment levels. In addition, CMO structures are not yet fully operationalised, for example Catchment Management Secretariats and Catchment Technical Committees are not yet established. This presents an immediate challenge to the effective implementation of the CbiWRM.

At WMZ level, current staffing levels are inadequate. The 2010 Strategy recommended for each WMZ to be staffed with 21 technical staff headed by a Coordinator (at Assistant Commissioner level) and having staff at Principal Officer level, Senior Officer level, Officer level, and lower levels. However, as of May 2020, KWWZ had 15 technical staff (representing 71% of 2010 proposed level), VWMZ had 15 (representing 71%), UNWMZ had 8 (representing 38%), while AWMZ had 9 (representing 43%) (Annex 5). The 2010 proposal for a WMZ to be headed by a Coordinator at Assistant Commissioner (AC) level was not implemented, largely because MWE officials at AC level are more involved in tasks of policy and strategic nature performed at the centre than the operations-related tasks that were de-concentrated to the WMZs. Thus, one of the WMZ officials at Principal or Senior Officer level is assigned to head the WMZ as Team Leader; this has proved sufficient however it reduced the availability of this official for the technical functions.

While several capacity building interventions have been implemented in line with the DWRM capacity development strategy, for instance staff on-job-trainings, exchange visits, tailored training programs, among others, several gaps still remain. Such gaps are in terms of technical skills; leadership and management; information and knowledge management; performance management; catchment management; communication and multi stakeholder coordination; and resource mobilisation. For instance, reporting lines for WMZ staff are not streamlined, resulting in reduced staff performance and efficiency. Further, there is no established mechanism for collaboration between the de-concentrated units in the different regional centres.

Some of the management instruments for operationalisation of CbiWRM are not yet developed or fully operationalised. For instance, some CMPs, SCMPs, MCMPs are not yet developed or finalised (refer to Annex 3 for details) or not disseminated. In addition, there are concerns among stakeholders that investments within the CMPs are prepared to mainly pre-feasibility level which renders them weak in generating the bankable projects that stakeholders can directly implement. Further, there is no manual or guideline on stakeholder engagement for CbiWRM; the existing manuals are too narrow for application to the holistic concept of CbiWRM.

There is lack of systematic and reliable data collection and management to support evidence-based decision making and planning. Data and information management procedures are not streamlined; this hinders access, usage and dissemination of data and information for decision making and resource allocation. For instance, existing databases are not easily accessible to stakeholders and are not sufficiently integrated to provide a complete picture of the status of water and related resources. Further, large spatial and historical gaps in hydro-meteorological monitoring exist that make it difficult to assess water availability and make forecasts.

Since the beginning of adoption of the IWRM principles, several policy and institutional reforms have occurred (refer to section 1.3). However, several challenges still persist. These include conflicting sectoral policies and overlaps in mandates of different institutions (refer to section 1.4.5). Further, weak enforcement of water regulations combined with low stakeholder awareness about the regulations is also challenge. In some cases, the inadequacy of some policy provisions hinders their effectiveness; for instance, there is a mismatch 1) between permit fees and the cost of issuing a permit and 2) the severity of penalties vis a vis the cost of corrective action needed. For example, in 2015 value for

money audit report on regulation of the abstraction and discharge of water (...)²⁸, the Auditor General notes that the fees DWRM charges for wastewater discharge do not deter pollution of the water resources by the permit holders. *“The fees levied are based only on Biochemical Oxygen Demand and do not take into consideration the other characteristics and components of the wastewater such as heavy metals, oil effluent and other chemicals which are toxic and equally expensive to treat.”* Therefore, the polluter does not bear the true and total costs of environmental pollution, which could fuel deliberate non-compliance.

While it is globally understood that the water use permit system is a useful tool for balancing water demands with available water resources, water allocation in the country is, at present, not sufficiently aligned with water balances thus threatening sustainable use and management of water resources.

The legal status of the CMOs is not yet defined pending the review of the Water Act. This limits their resource mobilization efforts.

2.4 Emerging issues for Water Resources Management

Uganda faces several challenges in securing sustainable access to water resources to meet the increasing demands of a growing population and socio-economic development.

2.4.1 Climate variability/change

An assessment report by IPCC in 2007 revealed that in Uganda, the average temperature increases by 2020 would range between 0.7-1.5 °C and with an impact of increased variability of rainfall. The increased uncertainty of rainfall poses a challenge for water resources management. Also increases in temperature result in changes in vegetation cover which in turn affects runoff and groundwater recharge. As well as the hydrological cycle leading to variations in distribution and availability. This affects all water users and increase risk for floods, drought and water borne diseases²⁹.

It is further apparent that the widespread deforestation and bush clearances as well as reclaiming wetlands for farming are root causes for changing microclimates including unreliable rainfall patterns and rising temperatures. These locally induced changes are overlain by global and regional climate changes as a result of global warming.

2.4.2 Population growth and urbanisation

At annual rates of about 3% and 5%, Uganda’s population growth rate and urban growth rate respectively are among the highest in the world; with an expected population of 100 million by 2050 of which 22 million will live in urban areas by 2040. For a country where the livelihoods of majority of the population depend on subsistence agriculture and natural resources, with this level of growth comes a substantial increase in competition for land and associated natural resources.

According to the 2016/17 National State of Environment Report, 72% of the labour force is employed in agriculture and forestry, making the Environment and Natural Resources sector largest source of employment and livelihoods in Uganda. Further, more than 96 per cent of the households in Uganda derive their energy (for cooking and heating) from biomass; this expected to continue in the foreseeable future. In addition, the demand for basic services including housing, energy and safe water is on the increase thereby leading to increased deforestation for firewood and charcoal and conversion of virgin land into settlements. Encroachment of marginal areas including wetlands and forests is likely to increase. Therefore, the need to manage water resources in the context of such rapidly changing pressures cannot be overemphasised.

2.4.3 Oil and gas development

The exploration of petroleum products in Uganda began in the 1920s, in the Albertine Graben, when locals began reporting seepages, or discharges, of oil in the region. Its heavy exploration, however, began in 2003 and boomed in

²⁸ <http://www.oag.go.ug/wp-content/uploads/2016/07/OAG-Regulationabstraction-of-water-Booklet.pdf>

²⁹ IPCC AR4 SYR (2007), Climate Change 2007: Synthesis Report

2006 when the National Environmental Management Authority (NEMA) confirmed the presence of commercially viable amounts of oil in the Graben.

Due to oil spills and leakages, pollution of water sources, gas flaring, destruction of forested and protected areas, and rapid mass physical developments which encroach upon natural areas, petroleum development is often connected with environmental degradation. Thus, exploitation and utilisation of the available oil and gas resources could have diverse effects on the environment and natural resources. Whilst consequently bottled gas may be introduced as an intermediate alternative to the use of charcoal as major household energy and thus reducing the pressure on forest and bush resources, it will add uncontrolled methane gas emissions to the growing climate gas amounts in Uganda causing overall to climate change.

2.4.4 Migration and refugees

Hosting a total of 1,394,678 refugees and asylum seekers by January 31, 2020,³⁰ Uganda is the largest refugee-hosting country in Africa and the third largest in the world.³¹ In some refugee-hosting districts, the population of refugees is higher than that of nationals. The high refugee population in Uganda is a result of wars, violence and persecution in the Horn of Africa and Great Lakes Region, notably South Sudan's conflict, insecurity and ethnic violence in the Democratic Republic of the Congo (DRC), and political instability and human rights violations in Burundi.³² The large population of people in the refugee-hosting areas puts enormous pressure of extraction on natural resources, notably grass for thatching the dwellings and trees used as both building materials and as wood fuel.

2.5 Conclusions, Lessons learned and Recommendations

From a review of Water Resources Management in Uganda including the legal and institutional framework, current status of water resources in Uganda, the achievements and challenges of implementing CbIWRM in Uganda, and the emerging opportunities, the following emerges:

2.5.1 Conclusions

- There are several achievements noted like the establishment of the water management zones and their realignment in accordance with hydrological principles. Also, the CbIWRM framework was established as planned; a number of catchment management organisations have been established and several guidelines and subsequent catchment management plans successfully developed. The broad involvement of stakeholders in the overall catchment management process is seen as a key to success; in selected cases catchment management interventions have been initiated. Furthermore, the general concepts of integrated water resources management have been widely accepted by professionals and stakeholders alike, especially those within the water and environment sector.
- While commendable progress has been made, several challenges prevail which should be addressed in order to strengthen implementation of CbIWRM. It is widely noted by stakeholders that the non-existence of sustainable funding for the CMOs and inadequate funding in general is broadly limiting the successes. Specifically, the unclear legal status of the CMOs limits their access to funding. Inadequate human and institutional capacity remains a key bottleneck, while coordination and collaboration at all levels needs strengthening. Weakness in enforcement of existing legislations also exist, some of which stem from the inadequacies in the legislations themselves while others are a result of low awareness about the legislations. Also, some sectoral policies conflict and mandates of different institutions overlap.
- The existing policy and legal framework provide the legal basis for IWRM. It promotes the management of water resources from the lowest possible level, while considering and specifying roles to be played by different stakeholders at different levels. However, targeted provisions are needed to strengthen Catchment based IWRM. Both the Constitution and Local Government Act provide for the cooperation among District Local Governments, however the operationalisation of the specific provisions of these legal instruments is not yet

³⁰ <https://data2.unhcr.org/en/documents/download/74074>, accessed on February 29, 2020

³¹ National Development Plan 3

³² <https://data2.unhcr.org/en/documents/download/69674>, accessed on February 29, 2020

elaborated. The on-going review of the Water Act and Water Policy could address this gap by including targeted provisions that use water as entry for operationalising the collaboration among district local governments.

- From the analysis of the institutional framework for WRM it can be concluded that no single institution has the full mandate (and, ultimately, resources) to implement CbIWRM. Sectoral responsibilities overlap, and as new initiatives related to WRM take place, they are either difficult to place or are somewhat duplicated with differentiated emphasis across ministries, departments or agencies. These overlaps could result in duplication and inefficiencies in resource utilization, unless coordination and communication mechanisms are strengthened at all levels.

2.5.2 Lessons learned and recommendations

- The globally and regionally agreed direction provides a strong foundation for national legislations, policies and strategies. For instance, the 1992 Dublin principles shaped the policy and institutional reforms for Water Resources Management in Uganda. Similarly, the internationally agreed Sustainable Development Goals, as well as other international and regional frameworks, conventions and protocols will continue to influence policy and institutional discourse for water resources management in the country. Therefore, effort should be invested in supporting the ratification and adoption of such instruments as and when need arises.
- Operationalising the concept of CbIWRM is costly in terms of both time and financial resources. In addition, the impacts of the implemented Water Resources Management interventions take time before they become visible. Therefore, Sustainable financing mechanisms are needed for securing long-term investment in WRM. With the change of donor priorities, traditional funding streams will be constrained even further. This calls for targeted and deliberate efforts to explore and exploit new sources.
- Water Resources Management is better embraced by stakeholders who are experiencing serious water resources problems. Therefore, the consideration of “hotspot restoration” as an entry point for WRM is key for quick buy in. However, this does not negate the strong need to prevent deterioration of water and related resources.
- The acceptability and sustainability of the restoration measures is highly influenced by economic realities at household level; humans degrade resources in the process of searching for survival. Therefore, CbIWRM implementation should be premised on a strong focus on providing or promoting environmentally conscious alternative livelihood support options.
- For effective participation in CbIWRM planning and implementation, stakeholders need sufficient guidance for instance in form of guidelines, manuals, and agreed plans. The guidance needs to be reviewed and adjusted based on lessons and emerging insights.
- The CMPs specify priority measures needed to manage water and related resources. However, because the CMPs are prepared to pre-feasibility level, the measures are often not presented to the detail needed for immediate implementation of the measures. It is therefore necessary to cascade the CMPs into bankable projects at sub and micro catchment level.
- A number of catchment rehabilitation measures have been initiated from the CMPs in place. However, the anticipated positive impacts e.g. on groundwater recharge or flow regimes are only minimally visible at micro/sub catchment scale since the measures are currently implemented at small scale and on pilot basis. It is therefore necessary to upscale the interventions.
- Because the impact of CbIWRM implementation is not adequately monitored, documented and communicated, stakeholders’ interest to invest in upscaling the approach is not fully stimulated. Therefore, data collection and management at catchment, WMZ and national level should become an integral component of CbIWRM planning and implementation. When the contribution of CbIWRM to the physical natural environment (water, forests, wetlands, etc), to socio-economic aspects, and importantly to livelihood sustenance is proved with empirical evidence, it could become easier for stakeholders to commit and invest resources in upscaling implementation of the concept. The process of upgrading the Water Resources Monitoring Network from manual to telemetric data collection has been started which could augment efforts towards impact monitoring.
- Because CbIWRM is a relatively new concept in Uganda, its added value is not yet fully understood by stakeholders especially those beyond the water and environment sector; notwithstanding the commendable progress made since 2010. Therefore, evidence-based awareness creation and marketing efforts are needed to secure the full involvement of such stakeholders in CbIWRM planning and implementation of the concept.

3 CATCHMENT BASED WATER RESOURCES MANAGEMENT (CbiWRM) STRATEGY 2020 - 2030

3.1 Introduction

The 2010 Strategy focused on operationalisation of the concept of Catchment based Integrated Water Resources Management (CbiWRM). The 2020 CbiWRM Strategy focuses on strengthening implementation of CbiWRM; building on the achievements realized and challenges/issues hindering implementation of the 2010 Strategy; positioning implementation to take advantage of emerging opportunities at regional and national level; and considering international best practices. This 2020 CbiWRM strategy, including its targets and indicators, aim to contribute to the achievement of commitments/provisions of the SDG framework, Africa agenda 2063, the EAC Vision 2050, Uganda’s Vision 2040, and NDP III such that its implementation can contribute to meeting the country’s international obligations and national aspirations. *Refer to sections 1.4.1 and 1.4.4 for details about the relevant commitments and provisions.*

3.2 Vision, Goal and Overarching Objective of the 2020 CbiWRM Strategy

The CbiWRM strategy envisions

“Sustainably managed Water Resources that support livelihoods and development by 2030”

The Goal of the CbiWRM Strategy is

“By 2030, ensure the availability and sustainable management of water and related resources for Uganda’s socioeconomic transformation”

Achievement of this goal assumes that effective governance and steady resourcing of CbiWRM efforts will prevail. The CbiWRM Strategy aims to pursue achievement of this goal guided by the following overall objective.

“Protect and manage the quality and quantity of water and related resources following a catchment based integrated approach to optimise benefits for all sectors of the society whilst protecting vital ecosystems”

3.3 Strategic Objectives of the 2020 CbiWRM Strategy

In pursuit of effective and efficient water resources management in Uganda, the following strategic objectives of the 2020 CbiWRM Strategy, were formulated.

1. Enhance the enabling environment for CbiWRM implementation
2. Strengthen human and institutional capacity to implement CbiWRM
3. Enhance the instruments and tools to guide CbiWRM implementation
4. Catalyse investments in CbiWRM implementation

These strategic objectives are informed by the main dimensions for IWRM according to the SDG framework (Table 1). The main actions and strategic interventions per strategic objective (Table 2, details in section 3.4) are targeted to address the main challenges faced during implementation of the 2010 CbiWRM strategy, keeping in mind the conditions for implementation of IWRM (Box 4) as specified in the third UN World Water Development Report. These conditions render impetus to the successful implementation of CbiWRM.

Table 1: SDG 6 Dimensions for Integrated Water Resources Management

Dimension	Definition
Enabling environment	<i>The conditions that help to support the implementation of IWRM, which includes policy, legal and strategic planning tools</i>
Institutions and participation	<i>The range and roles of political, social, economic and administrative institutions and other stakeholder groups that help to support implementation</i>
Management instruments	<i>The tools and activities that enable decision makers and users to make rational and informed choices between alternative actions</i>
Financing	<i>The budgeting and financing made available and used for water resources development and management from various sources</i>

Box 4: Conditions for implementing IWRM

Political will and commitment: Political will at all levels can help unite all stakeholders and move the process forward. It is especially needed if the resulting plan or arrangement would create or require changes in legal and institutional structures, or if controversies and conflicts among stakeholders exist.

Basin management plan and clear vision: Water resources development coordinated among various sectors and users is facilitated by the preparation of a master plan that reflects the individual sector plans and offers the most effective and efficient utilization of the resource.

Participation and coordination mechanisms, fostering information-sharing and exchange: The identification of key stakeholders can be facilitated through interviews and meetings. Stakeholder involvement can be defined appropriately for local conditions and improved gradually. Initial sharing of general basin-wide data and information, and further sharing of more specific information, will assist the self-sustaining system.

Capacity development: Capacity development and training priorities should be expressed at all levels, including that of decentralized local government.

Well-defined flexible and enforceable legal frameworks and regulation: It is necessary to assemble and review the full range of existing laws and regulations that apply to water-related activities and determine how existing legislation adapts or can be better adapted to accommodate sustainability and integration with regard to WRM.

Water allocation plans: As water is a shared resource, water rights should be flexible in terms of allocation in order to accommodate changes. Preparing a master plan that reflects individual sector plans facilitates the coordination among various sectors and advocates the most appropriate utilization of a basin's resource.

Adequate investment, financial stability and sustainable cost recovery: Coordination for IWRM implementation needs financial sustainability – such as the promotion of cost recovery – and must consider long-term management. Various combinations and roles of international financing and donors such as government grants, public resources, user charges and taxes, donor funds, basin environmental trust funds can be considered as funding options.

Good knowledge of the natural resources in the basin: Adequate knowledge and information on the water resources inventory and human resources of the basin is desirable. Including scientists as water resource managers can help maintain and accrue sound knowledge of the natural resources.

Comprehensive monitoring and evaluation: Monitoring and evaluation are essential for ensuring that the current management of water resources is properly implemented, and to identify the needs for adjusting management strategies. Upgrading new technologies is vital for effective performance both of local and central water management.

<https://www.iwapublishing.com/news/integrated-water-resources-management-basic-concepts>

Table 2: Strategic objectives, Main actions and Interventions

<p><u>Vision:</u> Sustainably managed water resources that support livelihoods and development by 2030</p> <p><u>Goal:</u> By 2030, ensure the availability and sustainable management of water and related resources for Uganda’s socioeconomic transformation</p> <p><u>Overall objective:</u> Protect and manage the quality and quantity of water and related resources following a catchment based integrated approach to optimise benefits for all sectors of the society whilst protecting vital ecosystems</p>				
Strategic issues	Enabling environment	Institutions and participation	Management Instruments	Financing
Strategic objective	1. Enhance the enabling environment for CbiWRM implementation	2. Strengthen human and institutional capacity to implement CbiWRM	3. Enhance the instruments and tools to guide CbiWRM implementation	4. Catalyse investments in CbiWRM implementation
Actions and Interventions	<p>Action 1: Strengthen water resources regulatory framework</p> <ul style="list-style-type: none"> ▪ Support to the review and amendment of the National Water Policy and Water Act, and development of targeted regulations <p>Action 2: Support the mainstreaming of CbiWRM in legislations, policies and strategies of other sectors</p> <ul style="list-style-type: none"> ▪ Explore opportunities for (and, where needed, develop a guideline for) mainstreaming CbiWRM in policies, strategies and regulations of other sectors <p>Action 3: Support the ratification and adoption of international conventions, protocols, and frameworks</p> <ul style="list-style-type: none"> ▪ Support the ratification, adoption and domestication of international conventions, protocols and frameworks as needed 	<p>Action 4: Improve coordination and collaboration at all levels (National, Regional, Catchment)</p> <ul style="list-style-type: none"> ▪ Initiate the development of joint strategies, policy and technical briefs on themes where mandates of government MDAs overlap ▪ Support relevant coordination committees at national level to enable them to provide policy advice on integrated and sustainable development of water resources. ▪ Strengthen coordination among Directorates and departments of the MWE at central level ▪ Institutionalise collaboration at regional level, among MWE deconcentrated units ▪ Fully operationalise CMO structures ▪ Strengthen awareness creation about CbiWRM ▪ Identify model catchments, prepare and implement joint projects especially focussing on government MDA to demonstrate CbWRM in operation <p>Action 5: Improve technical capacity at all levels for CbiWRM implementation</p> <ul style="list-style-type: none"> ▪ Enhance staffing of WMZs ▪ Support WRI to undertake and implement its four core functions of applied training, applied research, outreach and dialogue ▪ Support the mainstreaming of CbiWRM education <p>Action 6: Formalise and legalise CbiWRM implementation among DLGs</p> <ul style="list-style-type: none"> ▪ Support DLGs to formalise their CMO partnership ▪ Liaise with NEMA to have CMOs designated as environmental inspectors and to have CMCs play a strong role in the approval process of EIAs of projects 	<p>Action 7: Strengthen stakeholder involvement in CbiWRM</p> <ul style="list-style-type: none"> ▪ Develop and regularly update CMPs for all delineated catchments ▪ Popularise CMPs and support their mainstreaming in DDPs ▪ Revise issued guidelines and manuals regularly <p>Action 8: Strengthen impact monitoring, monitoring networks and assessment tools, and data management</p> <ul style="list-style-type: none"> ▪ Expand and automate surface water and groundwater and surface water monitoring stations ▪ Regularly monitor the impact of CbiWRM implementation ▪ Operationalise and maintain a national-level and WMZ-level databases <p>Action 9: Establish annual catchment-level water budgets</p> <ul style="list-style-type: none"> ▪ Establish annual water budgets for each catchment 	<p>Action 10: Enhance funding mechanisms for CbiWRM implementation</p> <ul style="list-style-type: none"> ▪ Establish a Catchments Management Fund ▪ Lobby MFPED for tax regulations that enhance direct investment into CbiWRM by companies <p>Action 11: Institutionalise resource mobilization at DWRM, WMZ and CMO level</p> <ul style="list-style-type: none"> ▪ Recruit resource mobilisation experts at DWRM and WMZ level

3.4 Strategic Actions

3.4.1 Strategic Objective 1: Enhance the enabling environment for CbIWRM implementation

A proper enabling environment establishes the rights and assets of all stakeholders (individuals as well as private sector organisations and companies, women, men, youth etc.) while ensuring environmental quality. The enabling environment essentially consists of the balance between the social, economic and environmental needs for water resources. These can be defined by the use of: (1) policies; (2) Legislative frameworks; and (3) financing and investment structures³³. Below are the priority strategic actions for enhancing the enabling environment for CbIWRM implementation.

Action 1: Strengthen water resources regulatory framework

a) Finalise review of the Water Act and National Water Policy Support to the review and amendment of the National Water Policy and Water Act, and development of targeted regulations

The water resources regulatory framework will be strengthened through further support to the review and amendment of the National Water Policy and Water Act, and development of targeted regulations; on 1) permitting, and 2) operationalisation of CbIWRM including functioning of WMZs as well as operationalisation and legal status of CMOs.

Action 2: Support the mainstreaming of CbIWRM in legislations, policies and strategies of other sectors

a) Mainstream CbIWRM in policies, strategies and regulations of other sectors

Water resources support key sectors of Uganda's economy, namely domestic water supply, hydropower generation, industry, agriculture, fisheries, and navigation. The status of Water Resources therefore affects and is affected by developments in these sectors. Opportunities will be explored for (and, where needed, a guideline developed) for mainstreaming CbIWRM into the legislations, policies and strategies of these sectors, to promote efficient and balanced use of the resources to meet various socio-economic needs.

Action 3: Complete the ratification of international conventions, protocols, and frameworks

a) Support the ratification and adoption of international frameworks

Uganda is a signatory to international conventions, protocols and frameworks that support CbIWRM but whose ratification or adoption is still pending, for example the African Convention on the Conservation of Nature and Natural Resources (2003). Effort will be invested in supporting and lobbying for the ratification, adoption and domestication of international and regional conventions, protocols and frameworks as needed.

3.4.2 Strategic Objective 2: Strengthen human and Institutional Capacity to implement CbIWRM

This objective aims at improving human and institutional capacity whilst harnessing the opportunities that could arise from joint and coordinated planning and implementation, such as improved quality of implementation, avoided duplication of services and wastage of financial resources, and sustained results.

Action 4: Improve coordination and collaboration at all levels (National, Regional and Catchment)

a) Initiate the development of joint strategies, policy and technical briefs/papers at national level

Joint strategies, policy and technical briefs will be developed on themes where mandates or interests of government Ministries, Departments and Agencies overlap, for instance on the nexus between water, energy and agriculture; water, energy and land use; water and tourism; water and transport; water, mining and industry, among others.

b) Support to relevant coordination committees at national level

Relevant coordination committee and structures at national level will be supported to enable them to provide policy advice to government agencies on integrated and sustainable management and development of water resources of Uganda. They include the Parliamentary Committee on Natural Resources, Water Policy Committee, Inter Ministerial Committee, Environment Policy Committee, Water and Environment Sector Working Group, and other relevant coordination platforms.

³³ The Enabling environment, Global Water Partnership, 2020. Available at www.gwp.org/en/learn/iwrm-toolbox/TheEnablingEnvironment

c) Strengthen coordination among Directorates and departments of the MWE at central level

Currently, WMZs report to the Director DWRM through one of the DWRM commissioners who performs an assigned role of coordinating the WMZs. This arrangement has proved effective; however, it has not sufficiently enhanced the full involvement of other DWRM departments in the strategic management of WMZs. Two CbiWRM Coordination Committees will be established:

- i. a DWRM level committee chaired by the Director DWRM and comprising all DWRM Commissioners; for operational supervision and support to the WMZs. The Commissioners will be Secretary to this committee on rotational basis.
- ii. a MWE-level committee chaired by the Permanent Secretary and comprising the Directors of all MWE Directorates; to provide overall oversight and enhancing the embedding of CbiWRM in MWE Directorates.

d) Institutionalise coordination among regional MWE de-concentrated units

At regional level, the growing interest among stakeholders, coupled with regional presence of various MWE departments with varying mandates and approaches, creates the need to improve coordination. To stimulate this coordination, collaboration between MWE de-concentrated units will be institutionalised through two committees:

- i. a Regional Management Committee, comprising the Team Leaders (or heads) of the regional de-concentrated units, for top level engagement and collaboration at regional level. The members will chair this committee on rotational basis; and
- ii. a Regional Technical Committee, comprising the officers of the deconcentrated units at Principal and Senior level, for operational level collaboration.

e) Fully operationalise CMO structures

At catchment level, coordination means knowing what is being done where (and when), how different activities complement each other, and systematically determining the extent to which different activities contribute to the common goal. The nature of the CMO (as a multi-stakeholder, and multi sector, and multidistrict body) positions it appropriately to coordinate and monitor the activities of catchment stakeholders. The structure, roles, linkages, and procedures of establishment of CMOs in Uganda are provided in the CMO Procedures Manual 2019. The legal status and mandate of the CMO as an institution will be defined through necessary legal instruments. Further, within the first five years of this 2020 strategy (i.e. until 2024), the full CMO will be piloted in at least one catchment per WMZ, based on provisions of the Manual. In 2025, lessons learned will be harvested based on which the rest of the CMOs will be fully operationalised.

f) Strengthen awareness creation about CbiWRM

Generally, there is a good level of understanding and appreciation of CbiWRM by stakeholders. However, because the concept is relatively new and promotes a management approach that is new to stakeholders (i.e. transcending sector and administrative boundaries) at least in Uganda, awareness creation about CbiWRM will be continued and further strengthened.

Information and knowledge products will be developed, which explain the linkage between water resources and other sectors, for example how the status of natural resources affects water quality and quantity, hydroelectricity generation or irrigation infrastructure, prevalence of diseases, among other aspects. Various approaches and means will be used to disseminate such information, for awareness creation and capacity building at catchment, sub-catchment and micro-catchment levels; these means include print media, visual tools, and performing arts, e-books, farmer-field schools by utilising the growing availability of ICT and internet-based tools. Prominent individuals, for example cultural leaders, athletes, and artists will be identified, capacitated, and supported to become “Catchment Ambassadors” with the prime role of promoting behavioural and attitudinal change towards better management of the environment.

g) Identify model catchments, prepare and implement joint projects especially focusing on government MDAs to demonstrate CbWRM in operation

Successful collaboration between sectors and professionals of different disciplines is only possible if actors appreciate the views of the others, jointly agree on the objectives for the catchment and appreciate the present mandates of the collaborators. This action is dependent on the level stakeholder involvement and collaboration at national and regional level.

For each WMZ, at least one “pilot” or “model” catchment will be selected in a collaborative process involving all MWE directorates and other relevant government MDAs. Model catchments will be those, which, given the issues and opportunities, combine potential for collaboration among government MDAs with the ease with which results can be achieved. Funding for selected priority interventions will be jointly sourced, and implementation will consider the

mandates and positioning of different institutions. For the proposed model catchments, main actors, their roles (derived from mandates) and potential sources of funding are given in Annex 4.

The model catchments would provide an opportunity to focus and intensify implementation of CbiWRM through strengthened collaboration among government MDAs with the view of; i) testing the proposed improvements, ii) learning lessons to improve the CbiWRM process and rollout factors of success to other catchments, and iii) demonstrate the added value and of collaboration. Therefore, understanding and documenting the implementation processes in each model catchment is critical for purposes of replication.

Action 5: Improve technical capacity at all levels

a) Enhance staffing of WMZs and streamline their management

In addition to performing the de-concentrated DWRM functions, the implementation of CbiWRM has created additional responsibilities for the WMZs related to stakeholders engagement, resource mobilisation, ICT and database management, communication and public relations management. The functions performed by WMZs and the technical competences needed are presented in Table 3.

Table 3: WMZ functions for CbiWRM Implementation

Function	Requisite skills and competencies
<p>1. Water Resources Assessment and Monitoring: Carry out holistic water resources assessments, estimate current water use and project future water demand, prepare water balances, and simulate and analyse integrated water use and infrastructure operations</p> <p>Design, install, and operate a modern zonal and catchment water monitoring system for hydrologic and meteorological data on groundwater and surface water including data collection, analysis, storage and dissemination.</p>	<p>Hydrology Hydrogeology data management</p>
<p>2. Water Quality Management: Design, install, and operate a modern zonal and catchment water quality monitoring system, and operate and maintain a regional water quality laboratory.</p>	<p>Water quality analysis Data management</p>
<p>3. Water Resources Regulation: Regulate water allocation, water use, and infrastructure operations in accordance with the agreed and adopted water management plan, administer the water permitting system, and monitor and enforce compliance with regulations including the implementation of environmental management plans and project plans.</p>	<p>Permit compliance monitoring Data management</p>
<p>4. Stakeholder engagement and awareness raising for CbiWRM: Promote awareness and understanding of integrated and sustainable water management and development among stakeholders in the zone and catchment, present Government water policy, water conservation and protection values, the role and importance of the CMOs in ensuring sustainable and equitable access to water.</p> <p>Coordinate, facilitate and support the activities of central sector departments and agencies, regional and district level officers, NGOs and donor partners within zone and catchment, including activities such as investment in water development at the zonal and catchment level, project planning and project preparation studies.</p> <p>Establish, support and facilitate an institutional framework for effective stakeholder participation in catchment management and development planning, and plan implementation including training and capacity building of stakeholders.</p> <p>Guide and facilitate the continuing role and function of the CMOs in the implementation of the catchment management and development plans.</p>	<p>Socio sciences, communication, IWRM planning and implementation, public relations management</p>
<p>5. Data and information management: Develop, maintain and expand the catchment and zonal knowledge database and information system, prepare knowledge products, and disseminate data and information including maps to support CMO and WMZ functions and facilitate catchment water management and development.</p>	<p>Database management GIS and remote sensing</p>
<p>6. Resource mobilisation: Mobilise (technical and financial) resources for implementation of plans for integrated management of water and related resources, as well as for operations of the WMZs and CMOs in the WMZ</p>	<p>Negotiation, networking, proposal development, marketing, public relations management,</p>
<p>7. Cross cutting Prepare catchment and zonal water development and management strategies and</p>	<p>Socio sciences, communication, IWRM planning and implementation, public</p>

Function	Requisite skills and competencies
plans. Review project proposals for water development and water use, water use permit applications, proposals for modification of regulations or prior permits, and environmental impact assessments (EIAs) in the zone and catchment. Contribute to and support the formulation of new and revised regulations and laws, and national water development and management plans and strategies, and support Uganda participation in trans-boundary water resource forums and implementation of agreements	relations management GIS and remote sensing Hydrology, Hydrogeology Water quality analysis, Database management
8. General Administration:	
Planning and budgeting	Planning, budgeting
Procurement and contract Management	Procurement, contract management
Financial Management	Budgeting, accounting
Human Resource Management	Personnel management, mentoring, leadership, coordination, supervision
9. Special Purpose Functions	
Oil gas	Oil and gas
Refugees	Disaster preparedness
Others (e.g. natural disasters)	To be defined

To effectively undertake these functions, WMZs should have suitably qualified staff of sufficient numbers and level of seniority to effectively engage with stakeholders and to support the CMO with secretariat functions. When each CMO is fully operationalised as envisaged in the CMO procedures manual, the functions of the WMZ will be majorly supervision and technical support to the CMOs. Therefore, staffing levels of the WMZ will be enhanced in terms of number and seniority of the experts. Because of the amplified need for stakeholder engagement resulting from the interest generated in CbiWRM among stakeholders, the number of Sociologists should be proportional to size of the WMZ as determined by the number of catchments such that a Socio scientist liaises with at most three CMOs. In the first two years of this strategy, a functional analysis of the WMZs and DWRM should be undertaken based on which the appropriate staffing levels shall be determined.

All the WMZ staff will continuously be trained in stakeholder engagement, public relations and communication, and data and information management in addition to targeted trainings relevant to particular functions. Depending on the conditions pertaining in each zone, additional competences will be hired on a case-by-case basis when needed; for example, a zone in the oil producing areas (AWMZ and UNWMZ) might need a specialist in Oil and Gas while a zone hosting refugees might need a specialist in Water Resources Management in emergency contexts.

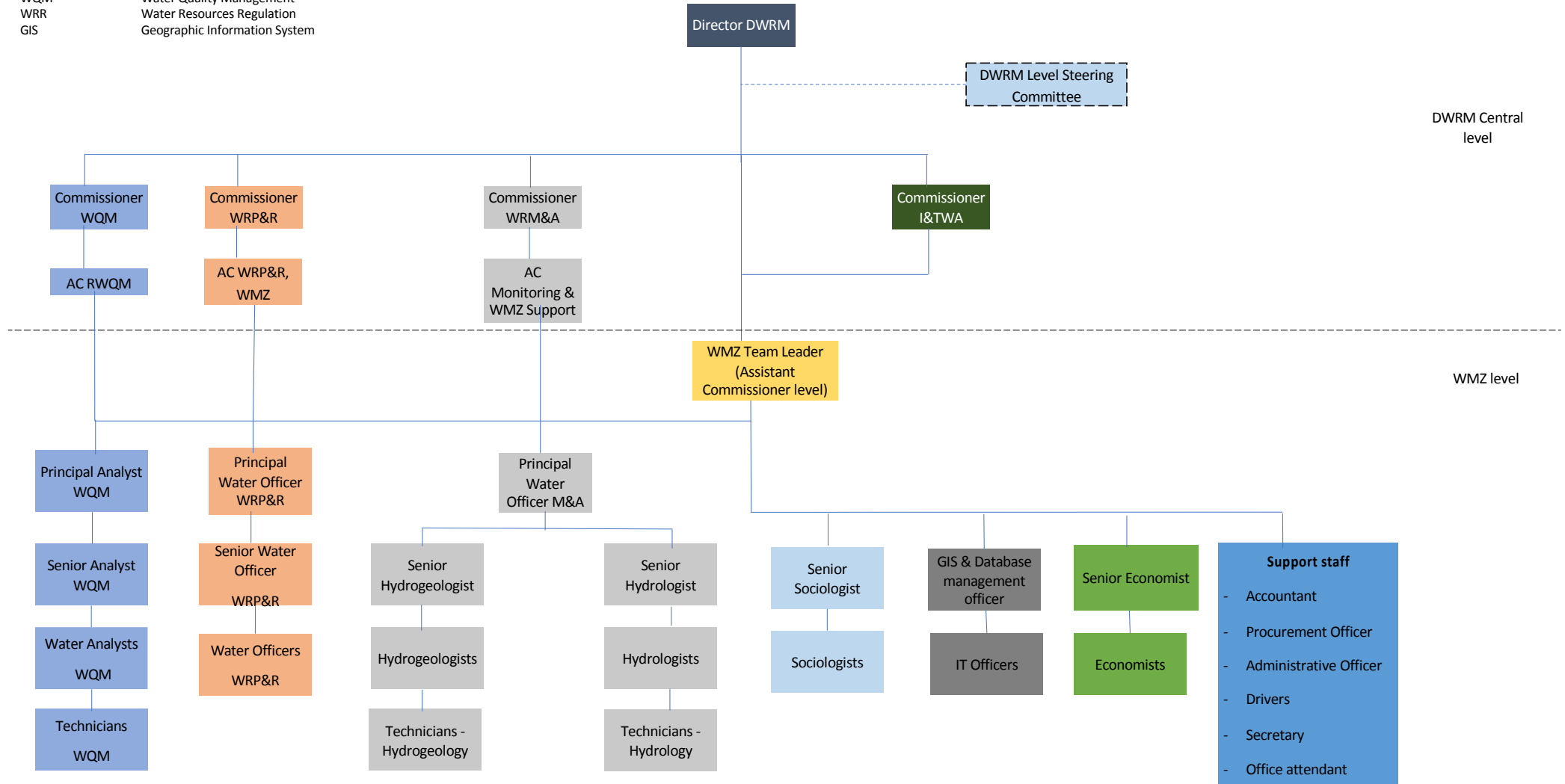
As the size of WMZ Team grows, and stakeholder interest in CbiWRM increases, the functions of the Team Leader have evolved to demand leadership and management as well as stakeholder relations. Therefore, the Team Leader should be an experienced person with good understanding of the operations of DWRM and a good communicator. He or she should be an expert combining technical competences in the integrated Water Resources Management with management and administrative skills. Consequently, the Team Leader should be a senior officer at minimum Principal Officer Level in the short term (until 5 years) and Assistant Commissioner thereafter.

The WMZ needs a management structure that maximizes their performance and effectiveness (Figure 5). Thus, the WMZ Team Leader should be supported by a Management Team comprising WMZ staff representing the three parent departments of DWRM at Senior level in the short term (until 5 years) and Principal level thereafter. Members of the Management Team are responsible for technical supervision and appraising the staff seconded to the WMZ by the respective departments. The Team Leader, on the other hand, is responsible for the technical supervision of the Experts who report directly to him/her. While the Team Leader will report to the Director DWRM, day today supervision and coordination of WMZs will be assigned to one of the Commissioners. However, the overall supervision and coordination of CbiWRM implementation will be undertaken through the DWRM – level CbiWRM coordination committee (refer to action 4c). The members of the WMZ Management Team will report to their parent departments for technical supervision and guidance.

Figure 5: Recommended structure of the WMZ

Abbreviations

M&A Monitoring and Assessment
 WQM Water Quality Management
 WRR Water Resources Regulation
 GIS Geographic Information System



b) Support the Water Resources Institute to undertake and implement its four core functions

The Water Resources Institute (WRI) should be supported to undertake and implement its four core functions of applied training, applied research, outreach and dialogue.

c) Support the mainstreaming of CbiWRM education

The WRI will be supported to pursue strategic partnerships with key research and capacity development institutions at national, regional and international level, with the view of integrating CbiWRM education in the mainstream education and research system.

Action 6: Formalize and legalize CbiWRM implementation among DLGs

a) Support DLGs to formalise their CMO partnership

Article 178 of the constitution of the republic of Uganda (1995) and Section 8 of Local Government Act (1997) provide for the collaboration between districts to form corporate bodies for the purpose of addressing matters of mutual interest. However, there is no further guidance on the nature of the corporate body or the process through which such a body should be established. The ongoing review of the Local Government Act presents an opportunity for promoting CMOs as mechanisms through which the collaboration among districts – provided for in article 178 of the 1995 constitution of Uganda and in the Local Government Act 1997 – can be operationalised. It is expected that the Water Act and Policy, currently under review, will specify, among others, the legal status and mandate of CMOs as well as the terms and conditions for individual members.

In the interim, for each catchment, the participating DLGs will be supported to formalise their partnership through partnership agreements or MoUs that spell out the rights, roles and responsibilities of each district (as recommended by MWE 2017³⁴); an action for which MWE will collaborate with the Ministry of Local Government and relevant Associations for instance the Uganda Local Governments Association (ULGA). Additionally, the participating DLGs will be supported to register their partnership agreements or MoUs with relevant authorities for example the Uganda Registration Services Bureau.

b) Liaise with NEMA to have CMOs designated as environmental inspectors and to have CMCs play a strong role in the approval process of EIAs of projects

DWRM will liaise with NEMA to: 1) have CMC members, who are public officers, designated as environmental inspectors in accordance with the National Environment Act 2019 and equipped with the necessary skills to perform their roles, 2) have the CMCs involved in the approval process for Environment Impact Assessments, Environment Audits and such related assessments. Generally, DWRM will, to the extent possible, involve all designated environmental inspectors in the implementation of CbiWRM.

3.4.3 Strategic Objective 3: Enhance instruments and tools to guide CbiWRM implementation

Since 2008, several achievements have been registered during the implementation of CbiWRM in Uganda. However, creating the necessary capacities in the de-concentrated WRM structures (WMZs, CMOs, etc.) to promote effective management of water resources continues to be a challenge. De-concentration remains an ongoing process whilst the limitations of CMOs remain apparent across the four WMZs. Under this objective, the CbiWRM Strategy will seek to establish and strengthen the CbiWRM management systems at national, regional and local level to ensure smooth implementation of CbiWRM in Uganda.

Action 7: Strengthen stakeholder involvement in Catchment-based IWRM

a) Develop and regularly update CMPs for all delineated catchments

For all delineated catchments, CMPs will be developed and CMOs fully established and operationalised in accordance with relevant guidelines and procedures. At sub and micro catchment level, the planning process should focus on elaborating priority bankable projects targeting hotspot areas.

b) Popularise CMPs and support their mainstreaming in DDPs

³⁴ MWE (2017) Lokere Catchment Management Plan

The CMPs will be popularised and district local governments provided the support needed to mainstream the CMPs into district planning processes; such support could include technical and financial resources. This intervention seeks to mainstream CbiWRM into the LGs and also proposes the establishment of a conditional grant for water resources management.

c) Revise issued guidelines and manuals regularly

The guidelines and manuals related to IWRM planning and implementation will be revised regularly, at least once every five years, to further enhance CbiWRM implementation.

Action 8: Strengthen impact monitoring, monitoring networks and assessment tools, and data management

Impact monitoring calls for collecting and updating information (about activities, and also conditions of the catchment e.g. hydrology, socio economics and status of natural resources), packaging it in forms usable (and relevant) to different stakeholders, and keeping that information in a form and medium accessible to the stakeholders. Generating and disseminating empirical evidence of the added value of the concept will be a key cornerstone of CbiWRM implementation.

a) Expand and automate surface water and groundwater monitoring stations

Data collection (hydro-meteorological, hydro-geological including water quality data, etc) and management will be strengthened as a basis for sustainable catchment-based water resources management and development. The existing monitoring stations will be expanded, and all stations will be upgraded (and automated to collect and transmit data in real time) and maintained. New surface water (quality and quantity) monitoring stations will be established, such that all rivers on the basis of which sub catchments are delineated are gauged. The number of groundwater (quantity and quality) monitoring stations will be increased by ensuring that all production boreholes are monitored.

b) Regularly monitor improvements resulting from CbiWRM implementation

For each catchment, there will be regular monitoring to track improvements (e.g. on biomass, ground water, surface water, biodiversity, livelihoods, etc.) resulting from CbiWRM implementation. The tools to be used are based on experiences gained by other MDAs like NFA by regularly monitoring forest and bush cover (e.g. utilising satellite imagery on biomass development computing the Normalised Difference Vegetation Index - NDVI) or MAAIF on monitoring crop development.

c) Operationalise and maintain a national and WMZ-level database

WMZ-level databases have been developed for Kyoga WMZ and Upper Nile WMZ, as well as a national-level Water Information Systems (WIS), however these are not yet operationalised. The next step will be to develop databases for Albert WMZ and Victoria WMZ and to fully operationalise WIS. Guidelines for data management will be developed, specifying, among others: data sources and data types; procedures for data collection, capture and transmission between the centre and WMZs, as well as conditions and procedures for data access by stakeholders considering, prevailing technological advancement and capacity.

Action 9: Establish annual catchment-level water budgets

a) Compute annual water budgets for each catchment

The growing requests for water allocations from various water users including agriculture, industry and mining, demands for improving regular monitoring of water use. On an annual basis, catchment water budgets will be computed showing the balance between available water resources and water volumes used/issued permits as basis for water demand management. For each catchment, a hydrological model will be developed and regularly updated, as the basis for visualisation, allocation and management of Water Resources. This information will be made to stakeholders for instance through the Annual WMZ Status reports.

3.4.4 Strategic Objective 4: Catalyse Investments in CbiWRM implementation

Underfunding of water resources management in Uganda has become a perennial mainstay. As such, the Environment and Natural Resources sub-sector, in general, has been seriously underfunded and understaffed for many years. Sustainable financing mechanisms are needed for securing long-term investment in Water Resources Management; these could include: targeted Funds (e.g. a Catchments Fund); mainstreaming Water Resources Management into “infrastructure-focussed” projects and initiatives; tapping into Water Investment by Water bottling companies which only pay permit/license fees; interesting the private sector players (banks, manufacturing companies, beverage companies etc) into Water Resources Management by amplifying the “profit-potential” of better Water Resources Management; advocating that a certain percentage of revenues from water-based products (for instance cattle, crops)

be directed to fund catchment management; among others. MWE is a National Implementing Agency for Adaptation Fund and Green Climate Fund; this is likely to attract more funding for CbIWRM activities. The potential funding sources are described in the Resource Mobilisation Strategy. Below, some priority actions and interventions are introduced.

Action 10: Enhance funding mechanisms for CbIWRM implementation

a) Establish a Catchment Management Fund

A Catchment Management Fund will be created, which will be accessible to mandated institutions to implement interventions prescribed in the CMPs. Through this Fund, MWE could provide the CMOs a continuous base-level funding from MWE, for example through performance contracts and conditional grants, to ensure their day-to-day operation until these structures are fully capacitated to become financially self-sustaining.

The Fund could be resourced from various sources including government, donors, CSOs, public utilities and contribution from other stakeholders including the private sector players e.g. banks and companies for which water resources are a key factor of production.

Such Funds have been established in more than 50 developing countries, mostly as independent grant making institutions that mobilise, blend and manage financial resources for environmental purposes, such as biodiversity conservation, protection of wildlife, forests, climate adaptation and mitigation. They often emerge from the need to guarantee continuous long-term economic resources to finance activities that promote conservation and maintain the provision of nature's benefits related to water resources.

Common practice is that the Fund is managed by a third party, usually a Trust, Authority or Corporation which provides guarantees and safeguards so that the resources are invested only for the purpose for which the Fund was created. Therefore, the establishment of this Fund necessitates the establishment of a Trust, Authority or Corporation for its administration. In neighbouring Kenya and Rwanda there exists similar Funds (Box 4) from which lessons can be drawn.

Box 4: Water Funds in the East African Region

The Kenya Water Trust Fund: The Water Sector Trust Fund (Water Fund) is a Kenyan State Corporation under the Ministry of Water and Sanitation and established under the Water Act, 2016, with the mandate to provide conditional and unconditional grants to the Counties and to assist in financing the development of and management of water services in the marginalised and underserved areas.

The Rwanda Green Fund: The Rwanda Green Fund (FONERWA) provides technical and financial support to the best private and public projects that align with Rwanda's commitment to a green economy. FONERWA facilitates direct access to international environment and climate finance, as well as to streamline and rationalise external aid and domestic finance. Access to the Fund is open to line ministries and districts, charitable and private entities, including businesses, civil society and research institutions. FONERWA receives contributions from both internal and external sources, including contributions from the private sector. Domestic capitalisation sources include: Environmental fines and fees and other environmental revenue and seed financing from domestic stakeholders (line ministries).

The Upper Tana Nairobi Water Fund: In Kenya, the Upper Tana Nairobi Water Fund which was established in 2015 and is currently engaging 19,000 farmers, reduced sedimentation by 15% and has so far gathered seed capital of \$1.35 Million.

b) Lobby MFPED for tax regulations that enhance direct investment into CbIWRM by companies

There is a general concern by large water users, for instance commercial agricultural farms and companies, that part of the taxes they pay should be ploughed back by the government to implement CbIWRM. Therefore, to encourage direct investment into CbIWRM by Large Water Users, deliberate efforts should be made to engage the Ministry of Finance, Planning and Economic Development to facilitate "at-source" expenditure towards CbIWRM efforts.

Action 11: Institutionalise resource mobilisation at DWRM, WMZ and CMO level

a) Recruit resource mobilisation experts at DWRM and WMZ level

Presently, resource mobilisation is not a core function of DWRM or the WMZs. Where targeted efforts have been observed, they are dependent on the discretion of the different staff at DWRM or WMZ level. Resource mobilisation will be added as a core function of DWRM and WMZs and targeted experts be hired for this function. Formalising and legalising the status of the CMO as envisaged in Action 1(a) will strengthen its contribution and locus for resource mobilisation, thereby augmenting the resource mobilisation efforts by DWRM and WMZs.

4 IMPLEMENTING THE 2020 CbIWRM STRATEGY

4.1 Overview

It is noteworthy that the CbIWRM Strategy is not independent of other planning/programming instruments and processes in the DWRM or the Water and Environment Sector in general. CbIWRM is an inclusive effort that requires the engagement and participation of stakeholders across sectors and administrative boundaries; from the national level, to regional level, to catchment level, to District and lower local government level, and to community and micro-catchment level. Therefore, different institutions and structures will be involved in implementing the 2020 CbIWRM Strategy.

4.2 Governance arrangements

Good governance is key to implementing catchment based IWRM which aims to coordinate between sectors to overcome a siloed approach. This 2020 CbIWRM Strategy utilises existing structures and institutional frameworks as much as appropriate, as presented in Figure 6.

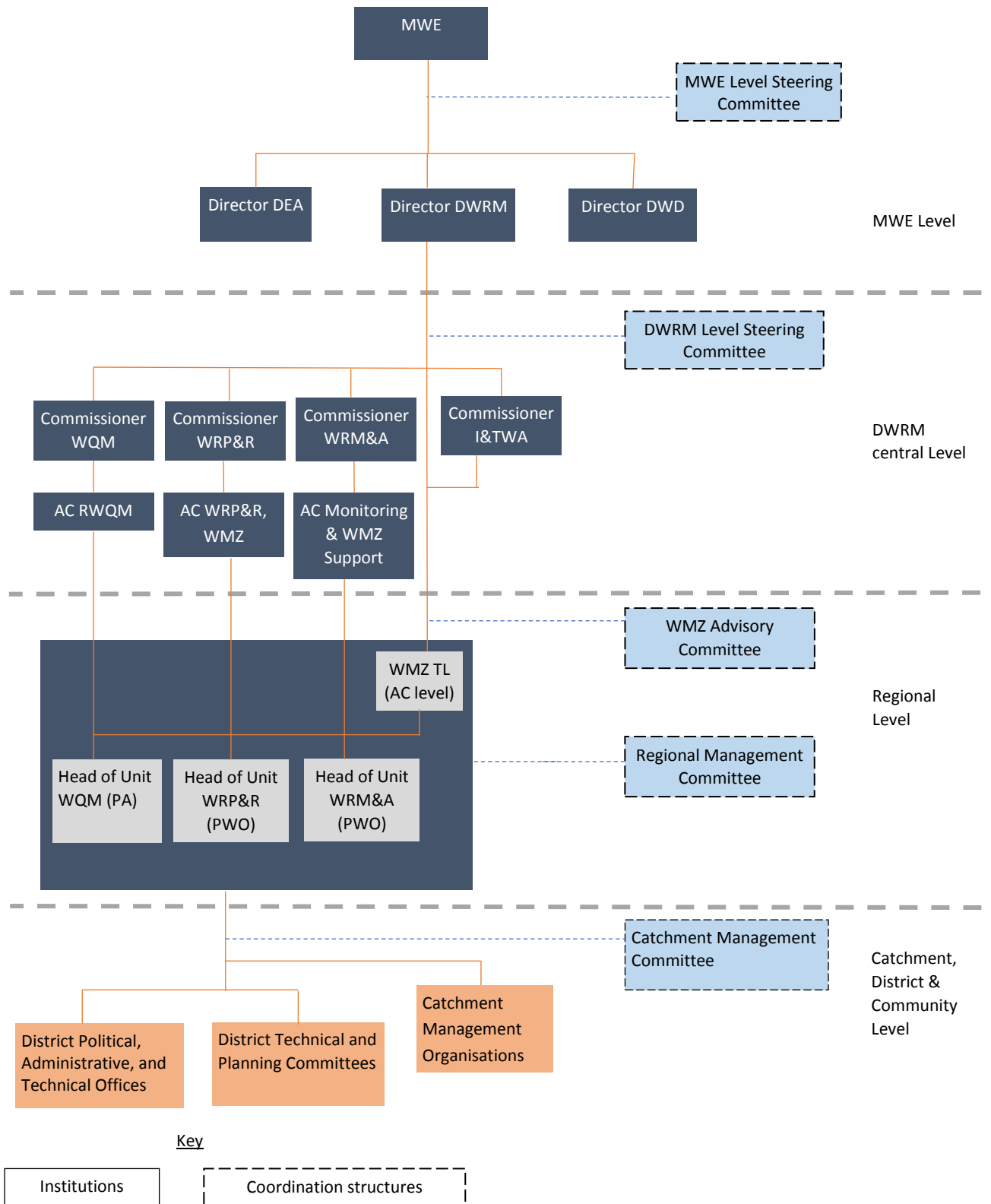


Figure 6: Proposed implementation structure for CbiWRM

4.2.1 Governance at the National Level

The Water Policy Committee will provide the overall visioning of CbiWRM implementation. A MWE-level committee chaired by the Permanent Secretary and comprising the Directors of all MWE Directorates and relevant agencies will provide overall oversight and enhance the embedding of CbiWRM in MWE Directorates and agencies. A DWRM-level

committee chaired by the Director DWRM and comprising all DWRM Commissioners will provide strategic guidance, support and supervision towards CbiWRM implementation.

With de-concentration of Water Resources Management, the emphasis of DWRM at the central level is changing from implementer to that of setting policy, strategies, standards and guidelines and training and capacity building of WMZ and other stakeholders. Therefore, DWRM at National level will provide the policy and procedures to guide the implementation of CbiWRM as well as the operations of the DWRM de-concentrated structure; the WMZs. Consequently, DWRM at central level will monitor, supervise and quality assure the work being undertaken “on the ground” by the WMZ. The DWRM at National Level will continue to be responsible for key technical functions and related activities that are national and strategic in nature and which cannot be deconcentrated to the WMZ.

4.2.2 Governance at the Regional level

A Regional Management Committee comprising the Team Leaders (or heads) of the regional de-concentrated units will be responsible for the engagement and collaboration between the de-concentrated units. It will be supported by the technical officers of the deconcentrated units. The operations of this committees should be in accordance with procedures and guidelines provided by the MWE.

4.2.3 Governance at District Level

Local Governments (Districts, Town Councils, sub-Counties) are empowered by the Local Governments Act (2000) to provide water services and manage the Environment and Natural Resource base. Local Governments, in consultation with MWE appoint and manage private operators for urban piped water schemes that are outside the jurisdiction of NWSC. The District Water Offices manage water and sanitation development and oversee the operation and maintenance of existing water supplies in the District. The District Environment Office is responsible for the environment and natural resources. Through the different departments, technical and planning committees, Local Governments can mobilise technical and financial resources for water and environment related activities.

4.2.4 Governance at the Catchment Level

The CMP belongs to the stakeholders in the catchment and everything that will be done will be done on behalf of the stakeholders represented by the Catchment Management Committee. Implementation of the various investments will therefore be spearheaded by the relevant departments or ministries either through the local government offices or where they don't exist through the national offices. The WMZs and the CMC will remain responsible for efficient use of the investment funds, and ensuring that the investments projects are implemented in line with the CMP while the different departments will provide the technical services for their implementation and management

a) Stakeholder Engagement

Sustainable implementation of the CbiWRM Strategy will rely on how stakeholders perceive this approach to water resource management. This will allow for inclusive growth. So far, the CbiWRM concept has been well embraced by almost all stakeholders who have acted across both formal and informal platforms. The CMOs bring together most of the stakeholders although some key actors may not be currently represented on the CMOs

b) Private sector

Private Sector Firms undertake design and construction in water supply and sanitation under contract to local and central Government. Private hand pump mechanics and scheme attendants provide maintenance services to water users in rural and peri-urban areas. Private Operators manage piped water services in small towns and rural growth centres. Private Forest Owners including Local Communities with registered forests are legal forest management authorities. In addition, the private sector plays an important role in terms of commercial tree plantation development as well as promoting wood-based industries and trade.

c) Community level

Last, but by no means least, communities are responsible for demanding, planning, contributing a cash contribution to capital cost, and operating and maintaining rural water supply and sanitation facilities. A water user committee (WUC), which is sometimes referred to as a Water and Sanitation Committee (WSC) should ideally be established at each water point. With respect to the environment and natural resources, over the year's community members have been encouraged to form user groups at local level, i.e. Beach Management Units (BMUs), Forestry Resource User Group, Land Committees and Environment Committees. These structures are intended to enable oversight of the environment and natural resources at the lowest level.

4.2.5 Institutions, structures and their roles

The institutional arrangements defining roles and responsibilities are derived from existing institutional structures and mandates. Oversight, operational as well as implementation arrangements will draw from already existing internal arrangements. Table 4 shows the prospective roles of the different key stakeholders with respect to CbiWRM implementation, based on mandates and positioning.

Table 4: Institutions and their proposed roles

Institution /Structure	Responsibility for CbiWRM implementation
National Level	
Policy Committee on Environment Water Policy Committee	<ul style="list-style-type: none"> Policy support and coordination
Ministry of Water and Environment	<ul style="list-style-type: none"> Sector Policy coordination and compliance Coordination with other ministries and sectors on common CbiWRM initiatives Monitoring and supervising implementation of CbiWRM initiatives Mobilize resources internally and externally for CbiWRM implementation Facilitate capacity development and strengthen the governance framework
Directorate of Water Resources Management	<ul style="list-style-type: none"> Establishing the WMZs and providing to them guidance (in terms of policies, procedures and supervision) as well as human and financial resources to perform the de-concentrated functions Performing WRM functions and related activities that are national and strategic in nature and which cannot be deconcentrated to the WMZs National-level awareness creation and resource mobilisation for CbiWRM implementation Developing and revising Catchment Management Plans Document and profile best CbiWRM practices; develop a Community of Practise to enhance knowledge development and inform practice. Develop and disseminate manuals for the integration of CbiWRM in different sectors Developing and enforcing national water laws, policies and regulations; Coordinating Uganda's participation in joint management of transboundary waters resources and peaceful cooperation with Nile Basin riparian countries.
Ministry of Finance, Planning and Economic Development	<ul style="list-style-type: none"> Mobilise and allocate public financial resources for implementation of CbiWRM Coordinate foreign direct investment including aid for Water Resources Management Create an enabling environment for Public Private Partnerships in support of CbiWRM implementation
Ministry of Local Government	<ul style="list-style-type: none"> Coordinate and support Local Governments to include or mainstream CbiWRM in their Budgets. Build capacity of Local Governments for planning, budgeting, implementation and monitoring of CbiWRM activities.
National Planning Authority	<ul style="list-style-type: none"> Ensure CbiWRM issues are captured and integrated in the National Development Plans
Joint Water, Environment and Sanitation Working Group (JWESWG)	<ul style="list-style-type: none"> Monitor stakeholder contribution (through sector plans, budgets, reports) Mobilize resources nationally and from development partners for CbiWRM

Institution /Structure	Responsibility for CbiWRM implementation
	<ul style="list-style-type: none"> Ensure that CbiWRM is prioritised in the sector activities and budgets Mainstreaming initiatives, providing formal approval of annual work plans and budgets, ToR for contracted MWE officers and consultants, and receive and respond to quarterly and annual reports.
ENR Committee of Parliament	<ul style="list-style-type: none"> Awareness raising on CbiWRM in parliament Advocate for resource allocation towards catchment activities Fast track the review and approval of the Water Resources related bills before parliament
Water Resources Institute	<ul style="list-style-type: none"> Applied research on Water Resources Develop modules and training essentials for the capacity building in CbiWRM
Regional Level	
Water Management Zones	<ul style="list-style-type: none"> Performing de-concentrated DWRM functions Enhance regional level coordination and collaboration for CbiWRM implementation Disseminate guidelines and document best practices for learning and upscaling CbiWRM Technical support to CMO structures in the implementation of the CMP actions
Other regional deconcentrated structures <ul style="list-style-type: none"> RWRC WfP UAs WSDF 	<ul style="list-style-type: none"> Technical support Mobilizing stakeholder contribution Monitoring and reporting performance of the contributions Enforce and monitor compliance with the Strategy Collaborative arrangements for joint resource mobilisation (e.g. Joint proposal development)
Other MDAs within the sector <ul style="list-style-type: none"> NEMA NFA UNMA NWSC FSSD 	<ul style="list-style-type: none"> Technical support Mobilizing stakeholder contribution Monitoring and reporting institutional contributions and performance of the contribution Bring specialised donors on board Collaborative arrangements for joint resource mobilisation (e.g. Joint proposal development)
Catchment and District level	
Catchment Management Organisation	<ul style="list-style-type: none"> Mobilize resources for implementation Mobilise stakeholder contribution Oversee implementation of CMPs and supported activities Lobby local adoption and marshalling of local non-financial resources Coordinate with CSOs on joint implementation of CbiWRM initiatives
District and other lower Local governments	<ul style="list-style-type: none"> Mainstream CMP interventions into District Development Plans Popularise CMPs among their development partners Oversee implementation of CMPs and supported activities Participate in planning and development of CbiWRM at local government level Participate in data collection, validation, storage and use of CbiWRM information for planning and management.
Other Stakeholders	
Academic institutions	<ul style="list-style-type: none"> Research to fill knowledge gaps
Private Sector Institutions	<ul style="list-style-type: none"> Contribute to policy formulation, reviews, research and training;

Institution /Structure	Responsibility for CbiWRM implementation
	<ul style="list-style-type: none"> Co-finance activities or investments with government; Supply of inputs and other private sector services along commodity value chains; Perform self-regulation and control activities in catchment related activities. Offer professional services in sustainable planning, design, construction supervision, management and operation and maintenance of CbiWRM related projects
NGOs, CSOs	<ul style="list-style-type: none"> Participate in supporting CMP implementation and building capacity of CMOs Participate in common initiatives/activities with DWRM for capacity building, advocacy and awareness building Link communities to resource mobilisation opportunities
Media	<ul style="list-style-type: none"> Document and strengthen communication for CbiWRM Disseminate and popularise guidelines.
Resource Users	<ul style="list-style-type: none"> Embrace and actively participate in all planned interventions Ensure proper use and self-monitoring the proper use and maintenance of set up infrastructure stock within communities Engage in gainful and progressive CbiWRM activities

4.3 Assumptions, Risks and Mitigation

Implementing the CbiWRM Strategy will certainly face inherent risks and uncertainties that would hinder the timely achievement of the indicated outcomes. The risks may arise from inadequate coordination, inadequate stakeholder buy-in into the Strategy, inadequate funding of the proposed initiatives and human capacity gaps. As shown in Annex 6, the risks are categorised as “high”, “medium” or “low” depending on their propensity or ramifications when they occur.

4.4 Monitoring and evaluation for the 2020 CbiWRM Strategy

Table 5 presents the prioritisation of actions and interventions in the short, medium and long term. Monitoring of the Strategy shall be progressive throughout the ten-year implementation cycle. Periodic monitoring will be undertaken on a quarterly and annual basis, and related progress reports will be prepared and disseminated to the Joint Sector Working Group and the Water Policy Committee. The monitoring will be participatory at all levels. In 2025, a Mid-Term evaluation of the status of implementation of the strategy will be undertaken, to determine progress made, factors underpinning it, and areas of strengthening. A final evaluation will be undertaken in 2031. Ultimately, the CbiWRM Strategy will be aligned to MWE’s monitoring and evaluation (M&E) system, which is part and parcel of the Government’s M&E system. Annex 7 presents results framework for the 2020 CbiWRM strategy, providing the indicators of progress, their means of verification and targets.

Table 5: Prioritization of Actions and Interventions

STRATEGIC OBJECTIVE/ ACTIONS/ACTIVITIES	PERIORIZATION IN TIME			MAIN PARTNER INSTITUTIONS
	Immediate (2020-2023)	Medium Term (2024-2026)	Long Term (2027-2030)	
1. ENHANCE THE ENABLING ENVIRONMENT FOR CBIWRM IMPLEMENTATION				
Action 1: Strengthen water resources regulatory framework				
Support to the review and amendment of the National Water Policy and Water Act, and development of targeted regulations				MWE, Policy Committee on Environment (PCE), Water policy committee (WPC), ENR committee of Parliament, Water and Environment Sector Working group (WESWG)
Action 2: Support the mainstreaming of CbiWRM in legislations, policies and strategies of other sectors				
Explore opportunities and develop				MWE, WPC, Wetland Advisory

STRATEGIC OBJECTIVE/ ACTIONS/ACTIVITIES	PERIORIZATION IN TIME			MAIN PARTNER INSTITUTIONS
	Immediate (2020-2023)	Medium Term (2024-2026)	Long Term (2027-2030)	
guidelines for mainstreaming CbiWRM in policies, strategies and regulations of other sectors				Group (WAG), WESWG,
Action 3: Support the ratification and adoption of international conventions, protocols, and frameworks				
Support the ratification, adoption and domestication of international conventions, protocols and frameworks				MWE, ENR CSO Network, WESWG, National negotiators
2. STRENGTHEN HUMAN AND INSTITUTIONAL CAPACITY TO IMPLEMENT CBIWRM				
Action 4: Improve coordination and collaboration at all levels				
Initiate the development of joint strategies, policy and technical briefs on themes where mandates or interests of government MDAs overlap				MWE-DWRM, Joint Water, Environment and Sanitation Working Group (JWESWG)
Support relevant coordination committees at national level to enable them to provide policy advice on integrated and sustainable development of water resources.				MWE, WESWG, Inter-ministerial committee on water
Strengthen coordination among Directorates and departments of the MWE at central level				MWE, WESWG
Institutionalise collaboration at regional level, among MWE deconcentrated units				MWE-DWRM
Fully operationalise CMO structures				MWE-DWRM
Strengthen awareness creation about CbiWRM				MWE-DWRM-WMZs
Identify model catchments, prepare and implement joint projects especially focussing on government MDA to demonstrate CbWRM in operation				DWRM-WMZs
Action 5: Improve technical capacity at all levels for CbiWRM implementation				
Enhance staffing of WMZs				MWE, Ministry of Finance, Planning and Economic Development
Support WRI to undertake and implement its four core functions of applied training, applied research, outreach and dialogue				MWE-DWRM, DEA, WSDF, WFPFC, development partners
Support the mainstreaming of CbiWRM education				MWE-DWRM, Joint Water, Environment and Sanitation Working Group (JWESWG)
Action 6: Formalise and legalise CbiWRM implementation among District Local Governments				
Support DLGs to formalise their CMO partnership				MWE-DWRM, Ministry of Local Government (MoLG)
Liaise with NEMA to have CMOs designated as environmental inspectors and to have CMCs play a strong role in the approval process of EIAs of projects				MWE, DWRM, JWESWG
3. ENHANCE THE INSTRUMENTS AND TOOLS TO GUIDE CBIWRM IMPLEMENTATION				
Action 7: Strengthen stakeholder involvement in CbiWRM				
Develop and regularly update CMPs for all delineated catchments				MWE-DWRM-WMZ heads
Popularise the CMPs and support the				MWE-DWRM, MoLG, CMCs

STRATEGIC OBJECTIVE/ ACTIONS/ACTIVITIES	PERIORIZATION IN TIME			MAIN PARTNER INSTITUTIONS
	Immediate (2020-2023)	Medium Term (2024-2026)	Long Term (2027-2030)	
mainstreaming of CMPs into DDPs				
Revise issued guidelines and manuals regularly				MWE-DWRM
Action 8: Strengthen impact monitoring, monitoring networks and assessment tools, and data management				
Expand and automate surface water and groundwater and surface water monitoring stations				DWRM-WMZs
Regularly monitor the impact of CbiWRM implementation				DWRM-WMZs
Operationalise and maintain a national-level and WMZ-level databases				DWRM-WMZs
Action 9: Establish annual catchment-level water budgets				
Compute annual water budgets for each catchment				DWRM-WMZs
4. CATALYSE INVESTMENTS IN CBIWRM IMPLEMENTATION				
Action 10: Enhance funding mechanisms for CbiWRM implementation				
Establish a Catchments Management Fund				MWE, Policy Committee on Environment (PCE), Water policy committee (WPC), ENR committee of Parliament, Water and Environment Sector Working group (WESWG)
Lobby MFPEd for tax regulations that enhance direct investment into CbiWRM by companies				MWE, Policy Committee on Environment (PCE), Water policy committee (WPC), ENR committee of Parliament
Action 11: Institutionalise resource mobilization at DWRM, WMZ and CMO level				
Recruit resource mobilisation experts at DWRM and WMZ level				MWE, DWRM, JWESWG

4.5 CbiWRM Marketing Strategy

So far, MWE and the DWRM have undertaken several initiatives aimed at communicating CbiWRM to the public. Collaborations with mainstream print media (e.g. New Vision, Daily Monitor), the annual Water Week, and other platforms have ensured that CbiWRM remains in the public domain. The next step is the preparation of a marketing strategy to enhance stakeholder support for CbiWRM. The marketing strategy will aim at having the following main outcomes: well understood and supported CbiWRM strategy; enhanced stakeholder understanding of the economic, social and environmental benefits of CbiWRM; strengthened multi-stakeholder and multi-sectoral partnerships through enhanced communications capacity.

5 FINANCING THE 2020 CbIWRM STRATEGY

5.1 Introduction

The Water and Environment Sector currently receives about UGX 800 billion per year for investment in activities modelled in the Sector Strategic Investment Plan (SSIP). The sector has produced a set of targets and indicators to be met by 2030, many of which align with the United Nation's SDGs. With the current funding, the Sector has managed to make progress across a number of indicators that track the Sector's performance across its major areas of intervention³⁵. However, the SSIP estimates that the Sector will need an average annual budget of about UGX 7.6 Trillion until 2030 if the sector is to achieve sufficiently the water and environment related national targets under the Vision 2040 and the Sustainable Development Goals (SDGs); this is about nine times the current funding allocated to SSIP investments.

This chapter considers the range of integrative functions and water services which require funding and examines which financial sources could potentially be available to support implementation of the 2020 CbIWRM strategy. These are elaborated in a Resource Mobilisation Strategy that has been developed as a complementary document to this 2020 CbIWRM strategy.

5.2 Financing for CbIWRM

Implementing this 2020 CbIWRM strategy requires concerted efforts to mobilize both financial and non-financial resources. Therefore, resource mobilization and sustainable funding for CbIWRM should form part of national discussion at regional, district and catchment levels. The Water Policy Committee, the MWE and its deconcentrated structures should catalyse inter-sectoral coordination of CbIWRM efforts and strengthen engagement with stakeholders involved in sustainable water resources management.

5.2.1 Traditional Financing Mechanisms

Traditional financing mechanisms include financial disbursement from the central government, and budget support from development partners. CbIWRM stakeholders should aim at working with the government and donors to ensure that the funds currently allocated and/or proposed in medium term and long-term expenditure frameworks are maintained.

a) Government of Uganda funding

This remains a critical source of CbIWRM funding. Whereas government allocations to the water sector have increased from 2.9% in 2017/18 to 5.3% in 2020/21, there has not been a proportionate increase in government funding towards CbIWRM. The projections are that government allocations will continue to grow at similar current rates and that more funding will be allocated to Water Resources Management. The collective government efforts and awareness towards climate vulnerability, the increased advocacy within the civil society and the drive towards achievement of SDG Goal 6.5 should further increase allocations towards CbIWRM. It is anticipated that annual allocations from government for catchment based water resources management will increase substantially by 2030. This will generally derive from reviews in the water tariff, contributions towards transboundary water resource management and conditional grants to Local governments intended to spur CbIWRM initiatives and reforms in use of revenues collected to directly support CbIWRM initiatives.

The NDP III has enumerated several core projects to be implemented over the 2020-2025 period consistent with the CbIWRM Strategy. Some of these core projects have underlying CbIWRM activities and objectives. Some of the projects are either ongoing or in their feasibility stage which provides an entry point for funding towards CbIWRM. Provided in Annex 8 are some of the referenced projects.

b) Local Government Revenue and Conditional Grants

In 2020, the districts of Arua, Gulu, Jinja, Mbarara, Fort Portal, Mbale, and Masaka were granted city status. Over the next four years, more cities will be created in Hoima (2021), Entebbe and Lira (2022), Moroto, Nakasongola, Soroti, Kabale and Wakiso (2023). This progression to city status has implications for the demand for and management of

³⁵ MWE (2018), Sector Strategic Investment Plan, Ministry of Water and Environment, 2018

water and related resources. Whereas Local Governments are constitutionally empowered and mandated by the Local Government Act (CAP 243) to control, regulate and also raise revenues from activities in their jurisdiction³⁶, there are several missed opportunities for resource mobilisation arising from poor administration and inadequate capacity. In South Africa, a “Water Resource Management Fee” is charged by some municipalities to offset some costs related to Water Resources Management. This CbiWRM strategy proposes to have a 1% levy on total Locally Generated revenue in the new cities. Current estimates show that revenues from this initiative can increase from USD 680,000 in 2020 to just over USD 2 Million annually by 2030.

Additionally, there are already on-going government projects that could support CbiWRM efforts. Operation Wealth Creation, Youth Livelihood Program (YLP), Uganda Women Empowerment Program (UWEP), Operation Wealth Creation (OWC), Northern Uganda Social Action Fund (NUSAF), Northern Uganda Reconstruction Program (NUREP), among others. Most of these projects/programs can support activities which have CbiWRM components.

c) Non-Tax Revenue (NTR)

Uganda charges fees for applications for permits for water abstraction and discharge and for the laboratory analyses of water quality. In FY2018/19, NTR amounting to UGX 545 Million was collected from permit application processing fees, annual water use fees. This is slightly more than the UGX 473.1 million in the previous year. The application of various types of permits is defined in the Water (Resources) and (Waste Discharge) Regulations of 1998 as outlined as shown in Table 6 below. It is envisaged that the non-tax revenue will substantially increase during the next reporting period due to the regulation campaign that has identified many new water users without permits and has also improved compliance to permit conditions by existing permit holders³⁷.

Table 6: Categories of Permit fees

Type of permit	Initial application [UGX]	Renewal [UGX]
Surface-water abstraction permits	450,000	50,000
Groundwater abstraction permits	450,000	50,000
Drilling permits	500,000	500,000
Construction permits	500,000	500,000
Waste-water discharge permits	650,000	650,000

NTR are also collected from offering laboratory services by MWE. Currently, laboratories receive and analyse client samples at a fee. As shown below, a total of 4,233 water samples were received and analysed during 2019 (Table 7); this generated UGX 203 million.

Table 7: Performance of the NWQRL and Regional Laboratories

Regional Laboratory	Planned	Ambient	Operational	Clients	Total	Performance
Fort Portal	400	37	16	121	174	44%
Mbale	400	108	269	136	513	128%
Lira	400	58	169	234	461	115%
Mbarara	400	67	68	0	135	34%
NWQRL	2,400	161	1,888	901	2,950	123%
TOTAL	4,000	431	2,410	1,392	4,233	106%

In addition, MWE gets numerous requests for data from research organizations, prospectors, investors etc. The sale of such data could generate revenue that can support specific CbiWRM initiatives. A total of USD 7,800 was realized from the sale of this data in 2019. In addition, an average of USD 170,000 is projected to be collected annually from the national and regional laboratories, reaching to USD 264,000 by 2030 from current trends. Over the 2020 - 2030 period, collection of NTR should be enhanced through better compliance and enforcement, capacity building, regular

³⁶ MFPED (2019), Financing Local Governments: Exploiting the potential of Local Revenue., Budget Monitoring and Accountability Unit Briefing Paper (15/19), May 2019

³⁷ MWE (2019), Sector Performance Report, 2019. Ministry of Water and Environment

reporting and review of rates to reflect contemporary challenges (including CbIWRM), better targeting, wider stakeholder engagement and coordination between the different MWE directorates. The MWE also provides short trainings in water related courses and has made partnerships with universities and other research institutions. This is both an avenue for capacity building and resource mobilization towards CbIWRM.

d) Development Partners' Support

The Water and Environment sector has benefitted from sustained support from bilateral and multilateral development partners. Under the Joint Partnership Fund (JPF) basket funding approach, development partners were able to channel funding to support targeted interventions, including CbIWRM. Even with the closure of the Joint Partnership Fund basket funding, development partners are expected to continue supporting different initiatives highlighted in Uganda's CbIWRM strategy. Specifically, multilateral institutions, such as the World Bank, the Global Environment Facility (GEF), and regional development banks like the East African Development Bank (EADB) and the African Development Bank (ADB) have specific climate funds, some of which are accessible to trans-boundary institutions. Funding for CbIWRM from development partners is projected to rise up to almost USD 6 Million annually by 2030. The downscale of the JPF calls for exploring alternative support from new partners; provided in Annex 9 is a list of potential partners.

e) Climate Financing (Adaptation Fund and GCF)

The Adaptation Fund (AF) supports developing countries that are parties to the Kyoto Protocol which are particularly vulnerable to the adverse effects of climate change. An innovative feature of the AF is the option for countries to have "direct access" to funds. Uganda (through MWE as the accredited national implementing entity) can receive funds directly without the involvement of an external implementing agency. In addition, parties to the UNFCCC have agreed to establish direct access for climate funds and have carried the practice over to the Green Climate Fund (GCF). The average cost per project is USD 6.7 million. Uganda has had opportunity to access AF and GCF funds under various projects with multiple other beneficiaries. Only one project has exclusively been awarded to Uganda out of a possible total GCF funding of USD 76 Million.³⁸ The USD 24.1 Million project is jointly financed by GCF with joint financing of USD 18.1 Million from GOU and USD 2 Million from UNDP. One project has also received funding from the AF amounting to US\$7.76m to enhance resilience of communities to climate change through catchment based integrated management of water and related resources. Another project has received funding from the AF to enhance resilience of farmers and pastoralists to drought in 4 countries (Djibouti, Kenya, Sudan and Uganda) in the horn of Africa. Out of the grant of US\$13m for the regional project, Uganda will receive US\$2.45m for the national level activities. Similar other projects are under preparation and are expected to receive funding soon. As such, grants from such multilateral funds can also attract funding from government through joint-financing arrangements. CMOs and WMZs can prepare bankable proposals to access this financing and implement initiatives captured in the CMPs. The grants also offer an opportunity for strategic collaborations between the CMOs and academia to undertake tailored research and development on local CbIWRM initiatives.

f) Civil Society Organisations (CSOs)

CSOs remain committed to contributing to Uganda's SDG 6.5.1 target and continue to support sustainable Water Resources Management. Financial resources from CSOs supporting the Environment and Natural Resources subsector increased by 57% from USD 2,755,750 to USD 4,317,560 between FY 2017/2018 and FY 2018/2019 respectively. CSOs have also supported different CbIWRM initiatives and facilitated some functional aspects of the Catchment Management Organisations. Based on historical trends and projection, funding from CSOs is generally projected to remain on average be USD 3,393,840 per annum but dip slightly by 2030.

5.2.2 Innovative Financing Mechanisms

a) Payment of Ecosystem Services (PES)

In line with Uganda's Constitution 1995, the country's environmental legislations including National Environment Act Cap 153, the Uganda Wildlife Act Cap 200, the National Forestry and Tree Planting Act 2003, the Investment Code 1991, among others are generally supportive of PES mechanisms. Several PES Programs have been undertaken in the country, by stakeholders including the World Bank, UNDP, ECOTRUST, UWA, FACE Forest Certification and other institutions, mostly related to carbon sequestration. Implementing a PES program in the Mount Elgon region using compensation methods and a client-targeting strategy had an annual cost of up to UGX 2,966,541,000 for a catchment

³⁸ <https://www.greenclimate.fund/countries/uganda>

of 2,333 farmers³⁹. During the implementation of CbiWRM Strategy, localities with particular PES issues will be identified and the concept introduced through elaborate stakeholder engagement. The potential benefits of PES however will be shaped by the unique challenges facing a particular catchment, the willingness of stakeholders and, as seen in some countries, specific legal reforms.

b) Payment for Water Source Protection

The Joint Technical Review (JTR) 2010 and subsequent Water Sector Working Group (WESWG) agreed that 3% infrastructure budgets should be allocated to catchment and source protection. All forms of water infrastructure defined in the Water Source Protection Guidelines 2013,⁴⁰ namely, Piped Water, Point Source, Multipurpose Reservoirs, and Hydroelectric Power are eligible to contribute to water source protection. The infrastructure value should be above UGX 100 million. The contribution to water source protection constitutes the monetary value of the contribution made by a water infrastructure developer towards the cost of preparing and implementing activities described in Water Sources Protection Plans⁴¹. Currently, there are several Hydro Electricity Power projects that are highlighted in the NDPIII. These projects are likely to provide resources through the observance of water source protection guidelines. In addition, major water users like the NWSC, breweries and beverage companies can provide allocations towards water source protection. Developing mechanisms for collecting, managing and accounting for stakeholder contributions and supported activities should be a critical action of this CbiWRM strategy.

c) Funding from other Sectors

The status of water and related resources affects, and is affected by, activities in other sectors of Uganda's economy. The existing legal framework within some of these sectors already provides for opportunities for resource mobilisation for CbiWRM.

- **Energy Sector:** The main goal of the Energy Policy for Uganda, 2002 is to meet the energy needs of the Uganda's population for social and economic development in an environmentally sustainable manner. The policy also recognises linkages between the energy sector and the water sector in terms of its demand for adequate quantities of water for hydropower generation. Under this Strategy, a proposal for a review of tariffs to include water resource management charges can be explored. Charges for electricity generation have a very significant revenue potential. In Spain, a levy of 22% is charged on the economic value of electricity while in Brazil a 6.75% charge on hydropower generation and distribution is levied. However, only around 10% of the resources generated end up financing water resources management; most of the revenues are not earmarked for the water sector. In France, the charge is modulated by the height of the dam, the generated electricity and the performance of the power plant. Under this proposal, resources for CbiWRM can be generated by charging UGX 5 on the total electricity bill paid by a customer.
- **Tourism Sector:** The Wild Life Policy, 1999 recognises management of water bodies within wildlife protected areas as wildlife/biodiversity habitat and tourism attraction. Inevitably, tourism activities are affected by the status of water and related resources. Currently, 20% of all gate entrance fees to all Wildlife Protected Areas flow directly to communities neighbouring the respective Protected Areas. Engagement with the Ministry of Tourism can provide a new avenue for resourcing of CbiWRM. For instance, a USD 0.5 surcharge on gate fees for international tourists to national parks can raise up to USD 2,958,450 by 2030. In addition, a USD 20 surcharge on the gorilla permits can raise up to USD 13 Million by 2030.
- **Mining Sector:** Uganda's Minerals Policy (2000), the Mining Act (2003) and the Mining Regulations (2004) have cohesive actions for biodiversity management such as a requirement for EIA and public engagement in the process, the use of exploration licenses and mining leases which provide for community participation. Even so, the royalties and taxes paid are either not ploughed back to support water resources management or even used in improving the welfare of affected communities. A number of strategic studies and guidelines have been developed for integrating environmental considerations in oil and gas and mineral planning and development. This can provide a nexus for cross engagement between the MWE and the Oil and Gas sector for joint resource mobilisation for CbiWRM.

³⁹ Katrien, G., Goedele, B., Koen, V., Verbist, B, and Miet, M (2018), Farmers' perspectives on payments for watershed services in Uganda, *Bioeconomics* Working Paper Series Working Paper 2018/6

⁴⁰ The guidelines for water source protection can be found at <https://www.mwe.go.ug/sites/default/files/library/Vol.%203%20-%20Guidelines%20for%20Point%20Water%20Sources-%20FINAL.pdf>

⁴¹ MWE (2015), Strategy for Operationalizing Stakeholder Contribution towards Water Source Protection, Ministry of Water and Environment, 2015

- **Works and Transport Sector:** The works and transport sector receives about one fifth of Uganda’s annual budget. The development of infrastructure represents conversion of other land uses into built up areas. However, there are concerns that some of the on-going developments in the sector target natural resources like wetlands and forests and often inadequate environmental compliance is undertaken given the public good nature of the investments. Moreover, runoff from roads can often contain oils from vehicles and litter which is then transferred to watercourses causing pollution. By 2030, the paved road network in Uganda will be 35,250 kilometres and is expected to reach 65,700 kilometres by 2050.⁴² MWE can engage the Ministry of Works and Transport to include a charge on the road toll or introduce a water resource management surcharge on newly registered vehicles. Based on current vehicle registration estimates, this has a potential of raising USD 11 Million by 2030.
- **Agricultural Sector:** This sector remains one of the major users of water resources. Some countries have used fertilizer and pesticide fees to raise money for agriculture related environmental protection initiatives⁴³. Currently, the main fertilizers imported to Uganda are NPK and Urea which accounted for 83% of all official imports in 2017. The National Fertilizer Policy 2016 identifies MWE as being responsible for the formulation and review of appropriate water and environment policies, standards and regulatory frameworks to help in increasing the water supply for agricultural production and thereby increase fertiliser use efficiency. Moreover, the National Irrigation Policy underlines GOU support for implementation of comprehensive catchment management plans, as well as best practices to minimize unsustainable exploitation of water resources using an IWRM approach to irrigation planning, development and management. The MWE can develop synergies with MAAIF for sustainable irrigation practices and funding modalities.

d) Private Sector Financing and Corporate Social Responsibility (CSR)

Recent signals from large institutional investors suggest that further capital could be raised specifically for adaptation activities, provided the right investment products are available. Already the private sector, especially large water users, has demonstrated a willingness to support CbiWRM initiatives in the various catchments. The private sector companies (e.g Coca Cola, Nile Breweries, Kinyara Sugar, GWK Dairy etc.) are actively supporting CbiWRM efforts. The CbiWRM Strategy will actively engage more large water users, and also target many small and medium industrial water users including water bottling companies and juice makers among others.

The ISO 26000:2010 Standard Guidance on Social Responsibility has been developed by the International Organisation for Standardisation (ISO) to help businesses and organisations with translating CSR principles into effective actions. The ISO 26000 identifies seven core aspects that need to be addressed among which is the Environment (prevention of pollution, sustainable resource use, climate change mitigation and adaptation, protection of the environment, biodiversity and restoration of natural habitats). Already several corporate companies have enjoined in various CbiWRM efforts and also contributed to the National Water Week through different CSR actions. Actions in the CbiWRM Strategy should provide entry points for corporate actors to support specific CbiWRM efforts either on a short, medium- or long-term basis.

e) Direct or in-kind funding for activities from various sources

Since the commencement of operationalisation of CbiWRM started in 2008, several stakeholders have shown interest in supporting CbiWRM initiatives. Philanthropists, cultural institutions, private sector actors, banks etc. have shown collective interest in supporting CbiWRM. A deliberate effort to tap into this good will is part of the resource mobilisation efforts under this CbiWRM Strategy.

5.2.3 Non-Financial Resources

Several contributions are made by stakeholders within the catchments. Some of these contributions are non-financial but they provide the necessary impetus for CbiWRM efforts. For instance, free media coverage of CbiWRM efforts, religious leaders as champions of CbiWRM efforts, in-kind support from community organisations, free labour to conduct catchment activities etc. This resource is one of the lessons learned from implementing CbiWRM and a major pathway towards community ownership of the CbiWRM concept.

Non-financial resource mobilization for the CbiWRM may be conducted by strengthening advocacy for CbiWRM. These include rainwater harvesting (off-farm), built capacity for the usage of general water saving irrigation technology, riverbank stabilisation, construction of contour bunds/gully control, wetland restoration, reforestation

⁴² NPA (2020), National Development Plan III (2020-2021-2024/25), National Planning Authority

⁴³ OECD (2010), Notes on financing water resources management: Background report for the OECD Expert Meeting on Water, Economics and Financing, Paris, 15-17 March 2010

and afforestation, drain and waterway improvements, flood risk management / preparedness, drainage and waterway improvements, etc. These progressive initiatives should enhance mainstream traditional financing modalities.

5.3 Mechanisms for funding CbiWRM implementation

a) Integration of WRM activities at various levels into Medium Term Expenditure Framework (MTEF)

The MTEF is an annual, rolling three year-expenditure planning framework that sets out priorities and provides the basis for annual budget planning. Sustainable water resource management is underlined in the National Vision 2040, the NDP III and other planning frameworks. Some progress has been achieved in this regard. However, budgeting at national, district and local government level should further reflect allocations towards CbiWRM or WRM-related activities. The CbiWRM Strategy, through a multi-sectoral approach, seeks to engage stakeholders at these different levels to further integrate WRM in their budgets and plans.

b) Integration of WRM activities in various CMPs into District Development Plans

Some districts have already included CbiWRM activities into their district plans. This has largely been a result of the involvement of district leaders and technical officers in CMOs. Integrating catchment activities in district plans increases the financial and non-financial resources that are available for CbiWRM initiatives.

c) Funds for IWRM activities channelled as conditional grants to districts through CMOs

Currently, the CMOs have a funding gap that limits their ability to implement their mandate. As shown in Table 8, conditional grants to local governments amounted to UGX 58.72 Billion in 2019. Environment and Natural Resource management is governed under the National Constitution 1995, article 237 (2) b which provides that the Government or Local Government as determined by parliament by law shall “hold in trust for the people and protect natural lakes, rivers, wetlands, ground water, natural streams, forest reserves, game reserves, national parks and any other land reserves for ecological and touristic purposes for the common good of the citizens of Uganda”. The proposal is to have funds for activities related to water resources management channelled as conditional grants through CMOs. This will provide steady and predictable funding for CMOs and implementation of CMPs.

Table 8: Conditional Grants to Local Governments (2018/19)

Grant Type	UGX (bn)
District Water and Sanitation Development Conditional Grant for Rural Water	52.7
Urban Water Operation and Maintenance Grant	2.50
District Health and Sanitation Conditional Grant to selected districts	2.00
Natural Resources Grant, more specifically Wetlands Conditional Grant	1.29
TOTAL	58.73

d) Establishment of a Catchment Management Fund (CMF)

This is an alternative that has been explored in other countries. Such a Fund would provide pooled funds by various stakeholders such as the private sector and or funds from permits and charges (including the 3% water source protection funds). The CMF would specifically support catchment activities either on a competitive basis or on set allocation principles. During the implementation of this CbiWRM Strategy, establishing such a Fund is prioritised.

5.4 Financing arrangements

There are actions/interventions that are part of the basic administrative or core functions of the MWE and other government MDAs and district LGs, preferably to be financed through the budgets of such entities. However, there are actions that need external funding. Table 9 presents a summary of the costs needed to implement the 2020 strategy; refer to Annex 10 for details. The financial resources needed for implementation of the 2020 Strategy for the 2020 - 2030 period amount to a conservative estimate of about \$120,810,000.

Table 9: Funding requirements for implementation of the 2020 strategy

Action 1: Strengthen water resources regulatory framework	60,000
Action 2: Support the mainstreaming of CbiWRM in legislations, policies and strategies of other sectors	60,000
Action 3: Support the ratification and adoption of international conventions, protocols, and frameworks	60,000

Action 4: Improve coordination and collaboration at all levels	54,540,000
Action 5: Improve technical capacity at all levels for CbiWRM implementation	20,900,000
Action 6: Formalise and legalise CbiWRM implementation among DLGs	220,000
Action 7: Strengthen stakeholder involvement in WRM	6,050,000
Action 8: Strengthen impact monitoring, monitoring networks and assessment tools, and data management	17,560,000
Action 9: Establish annual catchment-level water budgets	400,000
4.2 Enhance funding mechanisms for CbiWRM implementation	20,060,000
4.3 Institutionalise resource mobilization at DWRM, WMZ and CMO level	900,000

ANNEXES

ANNEX 1: SDG targets and indicators linked to WRM

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	2.4 Proportion of agricultural area under productive and sustainable agriculture
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	5.5.2 Proportion of women in managerial positions
6.3 By 2030, 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	6.3.2 Proportion of bodies of water with good ambient water quality
6.4 By 2030, 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	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management implementation (0-100) 6.5.1 Proportion of transboundary basin area with an operational arrangement for water cooperation
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	8.4.1 Material footprint, material footprint per capita, and material footprint per GDP
12.2 By 2030, achieve the sustainable management and efficient use of natural resources	12.2.1 Material footprint, material footprint per capita, and material footprint per GDP
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under	15.1.1 Forest area as a proportion of total land area 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

15.A Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

15.B Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

15.2.1 Progress towards sustainable forest management

15.3.1 Proportion of land that is degraded over total land area

15.A.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

15.B.1 Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems

ANNEX 2: SWOT analysis of implementation of CbIWRM since 2010

- Local presence through established Water Management Zones and physical offices
- Increased stakeholder participation in WRM planning and implementation at all levels
- Improved compliance to water discharge permit conditions: the biggest wastewater discharging entities such as NWSC facilities, sugar manufacturing companies, leather tanning industries have improved their compliance.
- Commitment of funds and donor support for actions to strengthen CbWRM
- CbWRM has facilitated alternative livelihoods. However, it has been appreciated that the sustainability of the restoration measures is highly influenced by economic realities at household level. Humans degrade resources in the process of searching for survival.
- Cross-sectorial coordination by ministries and departments involved in CbWRM – related activities is still weak
- Coordination and communication at all levels of government regarding CbWRM issues is still weak. Thus, participation in CbWRM implementation within MWE and its affiliated agencies, central and local government agencies is not maximized.
- Some de-concentrated functions cannot yet be fully performed at the WMZ level. This creates delays and inefficiencies in execution of some functions for instance permit issuance.
- The scale of implementation of CbWRM-related interventions is too small to sufficiently demonstrate the benefits of this approach at (micro, sub) catchment level level.
- the impact of CbWRM implementation is not adequately monitored, documented and communicated. This reduces stakeholders' interest to invest in upscaling the approach
- The involvement of stakeholders beyond the water and environment sector in CbWRM planning and implementation is not fully secured
- Investments within the CMPs are prepared to pre-feasibility level which renders them weak in generating bankable project
- CMO structures are not yet fully operationalised to support the full implementation of CbWRM
- CMPs no yet prepared for all identified catchments
- Existence of CMCs and CMPs to guide implementation of CbWRM initiatives
- Existence of a strong enabling environment (policies, legislations) for IWRM implementation
- Existence of transboundary agreements aimed at conflict resolution in the international river basins
- The regional and local government structures are empowered and have the mandate to implement IWRM
- The process of upgrading the Water Resources Monitoring Network from manual to telemetric data collection has been started which could augment efforts towards impact monitoring
- MWE is a National Implementing Agency for Adaptation Fund and Green Climate Fund. This is likely to attract more funding for CbWRM activities
- Currently, there is general political good-will for the effective implementation of CbWRM at all levels
- Development partners in the water sector are aligning their programs to the CbWRM approach
- A vibrant Civil Society in the water and environment sector for awareness creation, advocacy and resource mobilization
- Increased awareness of CbWRM imperatives among the private sector could incentivize investment in CbWRM implementation
- central government's focus on ICT justifies the need for
- Limited or unsteady funding, including the withdrawal of major development partners who have been funding the CbWRM efforts, e.g. DANIDA, GIZ
- Political interference has affected and could continue to affect the implementation of some activities leading to misunderstanding and misrepresentation of the intentions of CbWRM
- The legal status of the CMOs not yet defined, pending the review of the Water Act. This limits their resource mobilization efforts.
- Overlaps between mandates of different government agencies could result in duplication and inefficiencies in resource utilization.
- Inadequacy of some policy provisions hinders their enforcement. For instance, the mismatch between permit fees and the cost of issuing a permit and the severity of penalties *vis a vis* the cost of corrective action needed. The need to review such legislations is urgent.
- Inadequate human and institutional capacity for effective CbWRM implementation
- Water allocation is not sufficiently aligned with water balances thus threatening sustainable use and management of water resources
- Data and information management procedures are not streamlined. This hinders, access, usage and dissemination of data and information for decision making and resource allocation

strengthening WRM information systems

- The on-going higher education curriculum development process is an opportunity for embedding CbWRM in the education system

ANNEX 3: Status of Catchment Management Planning and establishment of CMOs as of August 2020

Mpanga	Finalised 2015	2014	22	6			
Semliki	Finalised 2016	2015	28	2			
Ruhenzamyenda	Finalised 2015	2014	17	2			
Muzizi	Under development	2019	21	3			
Nkusi	Under development	2019	10	1			
Albert	Not yet started	-	-	-	-	-	-
Kafu	Not yet started	-	-	-	-	1	-
Nyamugasani	Not yet started	-	-	-	-	-	-
Awoja	Finalised 2013	2013	22	4	1	3	
Mpologoma	Finalised 2016	2015	31	6	2		
Victoria Nile & Lumbuye	Finalised 2016	2015	20	2	0		
Lokok	Finalised 2017	2016	25	2	0		
Lokere	Finalised 2017	2016	31	5	0	3	
Ssezibwa	Not yet started	-	-	-	-	-	-
Kyoga	Not yet started	-	-	-	-	-	-
Akwenge	Not yet started	-	-	-	-	-	-
Obalanga	Not yet started	-	-	-	-	-	-
Lwere	Not yet started	-	-	-	-	-	-
Albert Nile	Finalised 2016	2015	30	4	0	0	3
Aswa	Finalised 2016	2015	33	3	1	3	0
Kidepo	Not yet started	-	-	-	-	-	-
Rwizi	Finalised 2015, reviewed 2020	2014	42	11	2		
Maziba	Finalised 2015		28	6	1	3	
Katonga	Finalised 2019	2016	26	6	1		
Victoria shore	Not yet started	-	-	-	-	-	-

ANNEX 4: Main actor and their potential roles in joint implementation of CbIWRM in model catchments

Level	Main roles	Potential sources of funding
Government Ministries (central level)	<ul style="list-style-type: none"> ▪ Policy and legislation ▪ Mobilising resources (both financial and non-financial) ▪ Capacity building of stakeholders ▪ Implementation of “high-cost” interventions ▪ Awareness creation, through national platforms 	Government budgets, Development partners
Regional deconcentrated structures	<ul style="list-style-type: none"> ▪ de-concentrated functions of the parent Ministries or directorates/departments ▪ Technical support to stakeholders ▪ Mobilising non-financial resources 	Government budgets, Development partners
Semi-autonomous authorities and agencies (e.g. NEMA, NFA, UWA, NWSC)	<ul style="list-style-type: none"> ▪ Implementation 	Collections from clients, donations, charges and levies
CMO structures	<ul style="list-style-type: none"> ▪ Coordination and supervision of implementation ▪ Mobilising resources (both financial and non-financial) ▪ Awareness creation through regional platforms 	Government budget Stakeholder contribution – CSOs, donors, private sector
Local governments (district and lower level)	<ul style="list-style-type: none"> ▪ Implementation ▪ Mobilising resources (both financial and non-financial) ▪ awareness creation at community level 	Government budgets, Development partners, local revenues
Non-state Actors (e.g. CSOs, private companies)	<ul style="list-style-type: none"> ▪ Mobilising resources (both financial and non-financial) ▪ Implementation ▪ Awareness creation at community level 	Donations, grants, owners’ equity, CSR

ANNEX 5: Current staff levels of WMZs compared to the 2010 proposal

2020 proposed Staff levels proposed	Established staff levels (May 2020)			
	VWMZ	UWMZ	AWMZ	KWMZ
Coordinator - AC	0	0	0	0
PA WQM	0	0	0	0
PWO WRR	0	2 (Team Leader, one is TL)	0	0
PWO WRMA	0	0	0	0
S Analyst	1 (Team Leader)	0	2	1
SWO WRR (2)	0	0	0	0
SWO WRMA	1	1	1 (Team Leader)	2 (one of them is the Team Leader)
S SS/CO	0	0	0	0
2 WQ Analysts	2	2	1	2
WO - Regulation	2	1	1	1
WO - M&A (Hydrologist)	0	0	0	0
WO - M&A (Hydrogeologist)	1	0	0	0
Systems Admin	0	0	0	0
SS/CO (2)	5	2	3	2
Snr Inspector/Technician (WRMA)	0	0	0	0
WQ Technician	0	0	0	0
Records Assistant/Data clerk (WRR)	0	0	0	0
Data clerk (WRMA)	0	0	0	0
	1 Economist	1 Economist	1 Economist	3 Socio-scientist trainees
		1 Engineer trainee		1 Agricultural engineer
	1 Hydrological Inspector	2 SS trainees	2 Hydrological inspectors	1 Hydrological technician
	1 Accountant		1 Accountant	1 Accountant
				1 Hydrogeologist trainee
				1 Environment management trainee
Totals	15	12	12	16

ANNEX 6: Risk and Mitigation Analysis

<ul style="list-style-type: none"> ▪ Smooth cooperation between the DWRM and other MWE directorates does not take place leading to inconsistent approaches and lack of progress in mainstreaming of CbiWRM into MWE plans and strategies ▪ Collaboration with other actors is constrained by competition for funds and mandate and by a lack of leadership in the different sectors. (actors include: the semi-autonomous agencies (NWSC, NEMA, and NFA), the Ministries of Agriculture and Health, local governments, NGOs and the private sector) 	low	<ul style="list-style-type: none"> ▪ The sector will actively promote the development of operational collaboration frameworks (technical commissions, committees or sub-working groups, as appropriate) with all these actors. (Top management leadership in MWE to ensure active directorate level cooperation) ▪ The sector will reach out to other stakeholders and make full use of already existing inter-sectoral coordination instruments (Top management leadership in MWE supported by policy dialogue by DPs working in other sectors). ▪ Participating in CbiWRM will be added to job descriptions of It will be considered to add cooperation and coordination within MWE and within the sector to the job appraisal and job description systems for senior staff (MWE top management and HRM section in MWE) 	<ul style="list-style-type: none"> ▪ Internal management and administrative constraints in the MWE/DWRM are resolved so the full capacity of DWRM can be made effective ▪ Technical staff can be recruited, and vacancies filled ▪ There is adequate stakeholders' involvement and political support for effective implementation of water resources planning, regulation and enforcement activities by DWRM are realised.
<ul style="list-style-type: none"> ▪ Powerful vested interests prevent reforms being implemented as some actors may gain from or prefer the status quo ▪ The de-concentrated structures are misunderstood and do not obtain the needed political support for their institutional establishment and the development of sustainable financing channels ▪ Political support is not provided for compliance with and enforcement of regulations, in particular in WRM and in the ENR sub-sector as well as in sanitation. ▪ Political messages against payment for water services continue to jeopardize the sector's policies in terms of cost recovery for infrastructure O&M cost. 	Medium	<ul style="list-style-type: none"> ▪ The sector ensures advocacy and explain the rationale for the necessary reforms at all political levels, including in particular the Office of the Prime Minister (OPM), the Ministry of Finance (MoFPED) and local governments (MWE top management, supported by DPs in policy dialogue that is broader than the sector) ▪ Sector plays an active role in the relevant coordination committees, such as the Water Policy Committee at the national level and the District Water and Sanitation Committees at the local level. (MWE departmental management) ▪ Communication strategies will be developed either for the sector as a whole for the major sub-sectors. (MWE top management, parliamentary committee on natural resources and DPs working on policy dialogue) 	<ul style="list-style-type: none"> ▪ The GoU recognises the value of WRM and allocates an increasing budget to this function and formalises the new institutional structures
<ul style="list-style-type: none"> ▪ Water and environment sector performance is not found to be effective by GoU and leads to reduced funding. Availability and reliability of DP support reduces – this is particularly critical for the support to <ul style="list-style-type: none"> ▪ Releases of GoU funding are not timely or reliable - this is important for further strengthening of the SBS component of JWESSP funding ▪ There is little additionally of Sector budget support meaning that DP funding is offset and does not lead to additional resources 	High	<ul style="list-style-type: none"> ▪ The sector will aim to demonstrate sector performance independently from the availability of funding, as this might attract additional support or budget allocations. (All sector actors under MWE leadership) the ENR sub-sector as support requirements and DP interest do not match. ▪ Support to the ENR sub-sector will be designed in a way that it can be adjusted to the availability of funding and new DPs approached (MWE and DPs) ▪ Releases and disbursements were satisfactory in recent years. Delayed reporting by local governments is one of the reasons for late disbursements 	
<ul style="list-style-type: none"> ▪ Lack of stakeholder participation 	Low	<ul style="list-style-type: none"> ▪ Undertake stakeholder analysis for all activities, per the Catchment Management Planning Guidelines, and make decisions based on level of participation 	

ANNEX 7: Results framework for the CbIWRM Strategy (2020 – 2030)

<p>Goal: By 2030, ensure the availability and sustainable management of water and related resources for Uganda’s socioeconomic transformation</p> <p>Overall objective: Protect and manage the quality and quantity of water and related resources following a catchment based integrated approach to optimise benefits for all sectors of the society whilst protecting vital ecosystems</p>					
Outcome 1		By 2030, CbIWRM is explicitly provided in the policy and legislative framework in Uganda			
Outcome Indicators	Source of Data	Baseline	Target 2030	Risk and Assumptions	
Number of laws, policies and regulations with specific provisions for the CbIWRM implementation	Sector Performance reports	Water act and Water Policy under review	<p>All legislations of the water and environment sector (WES) include provisions for CbIWRM</p> <p>Legislations of at least 3 other sectors include CbIWRM</p>	<p>Assumptions</p> <ul style="list-style-type: none"> Success in generating political support and public awareness for CbIWRM through advocacy and communication activities Smooth cooperation with the agencies (NEMA and NFA, UNMA) and other MWE directorates (DWRM, DEA, DWD) Clarification of overlapping roles and responsibilities, including revision of the related legal and regulatory arrangements Political support for addressing good governance issues Adequate staffing (staff numbers and qualifications) of DWRM and WMZs <p>Risks</p> <ul style="list-style-type: none"> Political interference Limited or unsteady funding Climate change relate disasters-Government diverting priorities to provide relief 	
Overall score on enabling environment (according to UN Water reporting framework)		63 (according to 2018 UN Water report ⁴⁴)	80		
Output 1.1		CbIWRM embedded in all Water and Environment Sector (WES) originated legislations, policies and strategies			
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of laws, policies and regulations in the WES with specific provisions on CbIWRM	WES Performance reports; Sector Ministerial Policy Statements	0	4	10	<p>Risks:</p> <ul style="list-style-type: none"> Limited capacity of the relevant MWE institutions to justify the contribution of CbIWRM approaches in the management of water resources Powerful vested interests (political) that prevent reforms from

⁴⁴ UN Environment (2018) Progress on integrated water resources management. Global baseline for SDG 6 Indicator 6.5.1: degree of IWRM implementation.

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					<p>being implemented as some actors may gain from or prefer the status quo.</p> <p><u>Assumptions:</u></p> <ul style="list-style-type: none"> Depends on the existence of guidelines/frameworks for mainstreaming or integrating provisions on CbIWRM in the WES laws, policies and regulations Priority laws and policies include: Water Policy & Act, National Environment Policy & Act, Climate change Policy & Act, Wetlands policy & Act, Forest Policy & Act
Output 1.2	CbIWRM mainstreamed in the legislations, policies and strategies of at least 3 sectors (Agriculture, Energy, local government)				
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of laws, policies and regulations in the 3 sectors (Agriculture, energy, local government) with specific provisions on CbIWRM	Sector Ministerial Policy Statements; Reports from CSOs and Development Partners; Sector performance reports	0	2	4	<p><u>Risks:</u></p> <ul style="list-style-type: none"> Powerful vested interests (political) that prevent reforms from being implemented as some actors may gain from or prefer the status quo. Weak evidence of the contribution of CbIWRM <p><u>Assumptions:</u></p> <ul style="list-style-type: none"> Relevant policies and laws include: Local government policy & Act, Energy policy & Act, Renewable energy policy, Fisheries policy, irrigation policy The added value of CbIWRM to these sectors is proved Other lead sector institutions appreciate the value of integrating CbIWRM approaches into their laws, policies and regulations
Output 1.3	Key international conventions, protocols, and frameworks that provide for catchment or basin based WRM are ratified				
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of IWRM-promoting conventions, protocols and frameworks ratified	Sector Ministerial Policy Statements; Reports from CSOs and Development Partners; Sector performance reports	8	9	ALL conventions, protocols and frameworks that will have been adopted by 2025	<p><u>Risks</u></p> <ul style="list-style-type: none"> limited funds to invest in the lead negotiating officials to lobby effectively <p><u>Assumptions</u></p> <ul style="list-style-type: none"> Already ratified: IWRM framework, Ramsar convention, UNFCCC, UNCCD, EAC protocol on ENR management, Nile basin CFA, Africa Agenda 2063, EAC Vision 2050

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- Not yet ratified: African Convention on the Conservation of Nature and Natural Resources (2003).

Outcome 2						By 2030, human and institutional capacity to implement CbIWRM is improved					
Outcome Indicators		Source of Data		Baseline		Target 2030		Risk and Assumptions			
Number of CbIWRM related project and programs developed and successfully implemented (both national and international)		Reports from CSOs and Development Partners; Sector performance reports; District Environment Reports; CMO performance reports		10		25 (At least 1 project per delineated catchment)		<u>Risks</u> <ul style="list-style-type: none"> Political interference Limited or unsteady funding from external partners given that currently most of the Primary funders of CbIWRM have withdrawn eg GIZ natural disasters like earthquakes and landslides causing government diverting priorities to provide relief services New and emerging challenges, like the CORVID-19 which are expected to have a direct negative effect on sustainable water resource management due to shifting government and donor priorities. 		<u>Assumptions</u> <ul style="list-style-type: none"> Existing and completed projects as of 2020 include: NUSAF, LEAF, IWMDP, EURECCA, among others. The required technical staff are recruited, and vacancies filled for effective implementation There is adequate stakeholders' involvement and political support for effective implementation of water resources planning, regulation and enforcement activities by DWRM are realised. The GoU recognises the value of WRM and allocates an increasing budget to this function and formalises the new institutional structures 	
Level of stakeholder participation in IWRM (according to UN Water reporting framework)				69 (according to 2018 UN Water report)		80					
Output 2.1						Improved coordination and collaboration among stakeholders at all levels for CbIWRM implementation					
Output Indicators		Source of Data		Baseline		Target 2025		Target 2030		Risk and Assumptions	
Number of strategies, policy briefs and technical briefs developed jointly between MWE and other government MDAs		Sector Performance Reports; Reports from different MWE directorates; Bilateral/Multilateral funding reports		1 (the irrigation policy was developed jointly by MWE and MAAIF)		3		6		<u>Risks</u> <ul style="list-style-type: none"> Limited or unsteady funding from external partners to invest in this process <u>Assumption</u> <ul style="list-style-type: none"> There is adequate stakeholders' involvement and political support for effective implementation of water resources planning, regulation and enforcement activities by DWRM. The GoU recognises the value of WRM and allocates an increasing budget to this function and formalises the new institutional structures 	
Number of meetings of WPC, IMC, EPC, WESWG (and other national level coordination committees) held per year		Minutes of meetings; Annual Sector Performance Report		Once a year		Twice a year		Twice a year			
% issued recommendations or resolutions implemented				Some recommendatio		At least half of the		ALL			

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per year		ns are implemented	recommendatio ns are implemented	recommendations are implemented	
Number of CbiWRM Coordination meetings held per year between MWE directorates and departments	Minutes of meetings; Annual Sector Performance Report	Once a year	Twice a year	Twice a year	
% issued recommendations or resolutions implemented per year		Some recommendatio ns are implemented	At least half of the recommendatio ns are implemented	ALL recommendations are implemented	
Number of meetings held per year between heads of MWE regional de-concentrated units	Minutes of meetings	Irregular meetings	Regular meetings at least quarterly	Regular meetings at least quarterly	
Proportion of fully operationalised CMOs compared delineated catchments in the country	Sector Reports; Sector Performance Reports; WMZ status reports	None	13 (all CMOs existing as of June 2020)	26 (CMOs for all delineated catchments)	
Number of catchments where CbiWRM related interventions are jointly financed and implemented between government MDAs	Reports from CSOs and Development Partners; Sector performance reports; reports from MDAs	0	2	5 (1 per WMZ, plus 1 additional for KWMZ)	
Number of information and knowledge products developed and disseminated on the linkages between WRM and other sectors		None at the moment (0)	6	12	
Number of CbiWRM related awareness raising events adverts and spot messages developed and issued per year	MWE/DWRM Central Reports; WMZ Performance Reports; Sector Performance Reports; Reports from CSOs and Development Partners	The annual Water Week at national and regional level is the main event	The annual Water Week (national and regional) will be supplemented with talk shows at national and regional level at least on quarterly basis	The annual Water Week (national and regional) will be supplemented with talk shows at national and regional level at least on quarterly basis	
Number of Catchment Ambassadors recruited, trained and are actively promoting CbiWRM imperatives		None	13 (corresponding to the number of catchments for which a CMP	At least 1 per catchment	

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			existed as of June 2020)		
Number of development partners, CSOs, private sector players implementing or financing the implementation of CbIWRM related interventions	Reports from CSOs and Development Partners; Sector performance reports	8 DPs 15 CSOs 4 Companies	At least 15 DPs, 30 CSOs, 10 companies	At least 15 DPs, 50 CSOs, 20 companies	<p><u>Risks</u></p> <ul style="list-style-type: none"> Changing priorities by developments affect the funding landscape <p><u>Assumption</u></p> <ul style="list-style-type: none"> As of June 2020, the main partners in CbIWRM included 6 DPs (FAO, GIZ, EU, World Bank, DFID, DANIDA, Austria Aid, African Development Bank), 15 CSOs (IUCN, RAIN, Welthungerhilfe, CARE, CRS, ACF, IRR, WWF, PROTOS, JESE, TBG, Kabarole Research Center, ACODE, ECOTRUST, ACORD), and 4 companies (Coca Cola, Kinyara Sugar Limited, Total, Nile Breweries)
Output 2.2					
Technical capacity building initiatives implemented that support CbIWRM implementation					
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
WMZ staff establishment, in terms of % positions filled as compared to the structure recommended by this strategy	WMZ Performance Reports; Sector Performance Reports	15%	50%	100%	
Number of regular training modules developed and delivered by the WRI targeting WMZ staff, CMO structures and other stakeholders	WRI performance reports; Sector Performance Reports	27 ad hoc Short courses were offered by the WRI by September 2019, most of them once.	At least 5 regular training modules offered to WMZ, CMOs and other Stakeholders		<p><u>Risks</u></p> <ul style="list-style-type: none"> Limited or unsteady funding from external partners to invest in this process <p><u>Assumption</u></p> <ul style="list-style-type: none"> There is adequate stakeholders' involvement and political support for effective implementation of water resources planning, regulation and enforcement activities by DWRM.
Number academic/technical institutions with CbIWRM integrated in their curricula	Sector Performance Reports; Reports from academic and technical institutions	IWRM Masters programme at Makerere University	One university per WMZ, in addition to Makerere university	All public universities and tertiary institutions in the country have	<ul style="list-style-type: none"> The GoU recognises the value of WRM and allocates an increasing budget to this function and formalises the new institutional structures The increased number of CMOs and stakeholder interest in CbIWRM call for matched capacity building efforts The knowledge and skills impacted on the recipients (stakeholders) translates to action on ground
Number of Research and Development (R&D) collaborations undertaken between WRI and academia or WR Organisations	Sector Performance Reports	None	One university per WMZ, in addition to Makerere university	All public universities and tertiary institutions in the country have	
Number of catchment-level capacity building initiatives undertaken	Sector Performance Reports; WMZ performance reports	Several exchange visits have been held	Regularised visits for and among CMOs,	All CMOs have at least one learning exchange visit per	

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		between CMO structures although not regularised	targeting at least the 13 CMOs established by June 2020	year	
Number of institutions reporting to have received specialized support (e.g. trainings, exchange visits, etc) for effective CbiWRM-related planning and management.	Stakeholder reports	Several trainings have been held for CMOs and WMZ	34 institutions (16 CMOs, 4 WMZs, 10 CSOs, 4 Companies)	60 institutions (26 CMOs, 4 WMZs, 20 CSOs, 10 Companies)	
Output 2.3					
Formalised collaboration and participation of DLGs for CbiWRM implementation					
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of MoUs or partnership agreements developed among DLGs regarding CbiWRM implementation	Annual Sector Performance Reports; MWE/DWRM Central Reports; NEMA reports; EIA and audit reports	None	15 MOUs	ALL	<u>Risks:</u> <ul style="list-style-type: none"> Powerful vested interests (political) that prevent reforms from being implemented as some actors may gain from or prefer the status quo. <u>Assumptions:</u> <ul style="list-style-type: none"> The Horizontal and Vertical Coordination at local government level, the catchment management roles and responsibilities are clear, with existent direct accountability to MWE. The CMOs have a legal mandate to take lead in the execution and coordination of the CbiWRM interventions.
Number of CMCs designated as environmental inspectors in accordance with the NEA 2019		None	At least one person per CMC existing as of June 2020 (15)	ALL	
Proportion of EIAs, environmental audits and related assessments approved by the CMC		None	At least 5 CMCs	ALL CMCs	
Outcome 3					
By 2030, CbiWRM implementation is sufficiently guided and progress is appraised through the use of targeted tools and instruments					
Outcome Indicators	Source of Data	Baseline	Target 2030	Risk and Assumptions	
Existence of tools and management instruments for CbiWRM implementation and appraisals	Annual Sector Performance Reports; MWE/DWRM Central Reports	Guidelines + 15 CMPs	All CMPs development	<u>Risks</u> <ul style="list-style-type: none"> Limited or unsteady funding from external partners to invest in this process <u>Assumption</u> <ul style="list-style-type: none"> There is adequate political support for effective implementation of water resources planning, regulation and enforcement activities by DWRM. The GoU recognises the value of WRM and allocates an increasing budget to enable action on ground for evidence building and stakeholder buy in 	
Level of existence of management instruments and tools (on a scale of 1 – 100) according to UN Water reporting framework		62 (according to 2018 UN Water report)	90		
Output 3.1					
Strengthened stakeholder involvement in WRM					
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Proportion of CMPs developed, with popular versions, as	Annual Sector	50% finalised	75%	100%	<u>Risks</u>

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a % of the number of delineated catchments in the country	Performance Reports; MWE/DWRM Central Reports	1 (Rwizi CMP has been revised in 2020)	At least 5 CMPs are revised	At least 10 CMPs are revised)	<ul style="list-style-type: none"> Limited or unsteady funding from external partners to invest in this process <p><u>Assumptions</u></p> <ul style="list-style-type: none"> There is adequate capacity built for DLGs to mainstream and implement the CbiWRM related interventions prioritised in their DDPs The GoU recognises the value of WRM and allocates an increasing budget to the DLGs to enable action on ground
Number of CMPs revised at least once in five years		3 (CPG, Source protection, CMO procedures)	5 (two additional ones: on stakeholder engagement +data access)	7	
Number of developed and popularised guidelines and manuals relevant to CbiWRM implementation	District Development Plans; District annual Budgets	Adjumani and Amuria districts have adopted measures in respective CMPs	At least 50% of DLG that are members of a CMC as of June 2020	ALL districts that are member of a CMC	
Proportion of DLGs that adopt and implement WRM measures in line with respective CMPs					

Output 3.2 Enhanced impact monitoring, assessment tools data management

Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of surface water and groundwater monitoring stations (including water quality and quantity) automated and functional	WMZ performance reports; Annual Sector Performance Reports; MWE/DWRM Central Reports; Reports from other MDAs	XX (out of 65) surface water monitoring stations are telemetric	For at least 50% of the delineated catchments, all sub catchments have automated stations	For ALL delineated catchments, all sub catchments have automated stations	<p><u>Risks</u></p> <ul style="list-style-type: none"> Vandalism of stations and monitoring equipment Poor phone and internet reception in some parts of the country hinders timely data transmission <p><u>Assumption</u></p> <ul style="list-style-type: none"> There are sufficient financial resources to invest in upgrading the data monitoring systems for more reliable data generation The DWRM team capacity is sufficiently built in terms of knowledge and staffing to match the demand
Frequency of data collection, and analysis and dissemination on biomass, livelihoods, agricultural productivity, among others, at catchment level		Data is scattered, and not analysed at catchment level	For all delineated catchments	For all delineated catchments	
Number of WMZs with an operational database that is regularly updated with catchment level data		KWMZ and UNMWZ have databased but not yet operationalised	The WMZs have databases and catchment level data	All WMZ	

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Operational status of the national level database (Water Information System) including frequency of monitoring report		WIS IS developed but not fully functional	WIS is fully functional and includes data from at least half of the catchments	WIS is fully functional and includes data from all catchments	
Developed guidelines or manual for data management		None	Guidelines are developed	Guidelines are fully implemented	
Output 3.3	Catchment-level water budgets computed on annual basis				
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of catchments for which an annual water balance is published and is the basis for allocation of water use	WMZ performance reports; Annual Sector Performance Reports	0	13	25 (ALL delineated catchments)	<u>Risks:</u> <ul style="list-style-type: none"> No risks <u>Assumptions:</u> <ul style="list-style-type: none"> All sub catchments should be gauged (both surface water and ground water) so that water balances can be easily determined
Outcome 4	By 2030, funding for CbiWRM implementation is increased and sources diversified				
Outcome Indicators	Source of Data	Baseline	Target 2030	Risk and Assumptions	
Funding allocation towards CbiWRM	Sector Budget Framework Papers	Funding is mostly from MWE	Other sectors are allocating funds to CbiWRM	<u>Risks</u> <ul style="list-style-type: none"> New and emerging challenges, like the CORVID-19 and other climate change related disasters which are expected to have a direct effect on sustainable water resource management due to shifting government and donor priorities. Limited or unsteady funding from external partners to invest in this process <u>Assumption</u> <ul style="list-style-type: none"> The GoU recognises the value of WRM and allocates an increasing budget to enable action on ground for evidence building and stakeholder buy in 	
Level of financing for IWRM (on a scale of 1 – 100) according to UN Water reporting framework		40 (according to 2018 UN Water report)	80		
Output 4.1	Enhanced funding mechanisms for CbiWRM implementation				
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Operationalisation status and size of a Catchments Management Fund (CMF)	MWE/DWRM Central Reports; Annual Sector Performance Reports	The Fund is none existent	The Fund is established	The Fund is sufficiently resourced	<u>Risk</u> <ul style="list-style-type: none"> The existing presidential directive on formation of new departments, directorates, authorities could slow the process of creation of an independent Authority, Trust or Corporation to operationalise and manage the Fund
Number of projects financed by the CMF		0	At least 1 project per WMZ	At least 1 project per delineated catchment	

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Progress of engagements with MFPED targeted to promoting direct investment in CbiWRM by stakeholders especially companies		No engagements so far	There are tax benefits for engagement of companies in CbiWRM	There are tax benefits for engagement of companies in CbiWRM	<u>Assumption</u> <ul style="list-style-type: none"> The generated funds are approved to be ploughed back into CbiWRM interventions by the MFPED
Output 4.2	By 2022, resource mobilisation is institutionalised at all levels (DWRM, WMZ and CMO level)				
Output Indicators	Source of Data	Baseline	Target 2025	Target 2030	Risk and Assumptions
Number of experts at DWRM central and WMZ level whose job description explicitly mentions resource mobilisation as a task and appraisal area	MWE/DWRM Central Reports; WMZ performance reports;	0	2 at the DWRM 1 for each WMZ	4 at DWRM 1 for each WMZ	<u>Risk</u> <ul style="list-style-type: none"> No risks
Number of project proposals generated by WMZs per annum	Annual Sector Performance Reports	0	At least 4 proposals (1 per quarter)	At least 8 proposals (2 per quarter)	<u>Assumption</u> <ul style="list-style-type: none"> There is shared recognition of the rationale for resource mobilisation

ANNEX 8: NDPIII Core Projects: Opportunities for CbiWORM Funding

Agriculture Storage and Post-harvest handling Infrastructure	NDPIII Project Idea
Regional Agricultural Processing and Marketing (cassava processing in Gulu; meat processing in Nakasongola; grains processing in Jinja; cotton processing in Lira; dairy processing in Mbarara; potatoes in Kisoro)	NDPIII Project Idea
Forest Conservation II	Ongoing
Markets & Agriculture Improvement Project	Ongoing
Establishment of steel industry (Muko)	Feasibility
Hoima Oil Refinery	Feasibility
East Africa Crude Oil Pipeline (EACOP)	Feasibility
Construction of the Gas Pipeline	Concept
Construction of bulk storage facilities	Feasibility
Albertine Region Airport (Kabaale international Airport Hoima)	Ongoing
Development of Source of the Nile	Feasibility
Solar Powered Mini-Piped Water schemes Project (East, Central, West, and North)	Feasibility
(Namanve, Bweyogerere, Luzira, Soroti, Moroto, Mbale, Masaka, Jinja, Mbarara, Kasese, Luwero-Nakaseke, Arua, Gulu, Fort-Portal, Kabale, Hoima, Oraba, Onaka)	Concept
Ayago Hydro Power Plant	Concept
Expansion and rehabilitation of the following transmission and distribution network	
Industrial Substations Upgrade (Lugogo; Mutundwe; Nkongge; Nkenda; Kawanda; Lira; Opuyo; Tororo; Mbarara North; Masaka West; Kawaala, Kampala North Substations; Luzira, Iganga, Mukono, Namanve Upgrade)	Ongoing
Masaka – Mwanza 220kV;	Feasibility
Nkenda – Mpondwe - Beni 220kV;	Ongoing
Olwiyo – Nimule – Juba 400kV;	Feasibility
Karuma – Tororo 400kV;	Ongoing
Kampala metropolitan transmission system improvement project	Ongoing
Isimba interconnection line	Feasibility
Karuma interconnection line	Ongoing
Grid Extension in North East, Lira and Buvuma Islands	Ongoing
Kabaale-Mirama Transmission Line	Ongoing
Masaka-Mbarara Transmission lines	Ongoing
Ayago-olwiyo	Feasibility
Karamoja 132Kv	
GKMA High density affordable housing	NDPIII project idea
Development of Incubators, and Technology Parks (Innovation-based Incubation Centers)	Concept

ANNEX 9: Potential funders of CbiWRM Strategy

The AfDB has a policy that encourages borrowers to adopt and implement an integrated approach to water resources management. The objectives of the policy are to rationalize and strengthen Bank Group interventions in the water sector

<http://www.afdb.org/>

CIDA has an active interest in IWRM Plans and has contributed \$10 million through the Global Water Partnership (GWP) to assist in the preparation of national IWRM frameworks and the integration of water issues into Poverty Reduction Strategy Papers (PRSPs) in a select number of African countries, and institutional development of existing and new GWP partnerships at the regional and country level in Africa.

<http://www.acdi-cida.gc.ca/index.htm>

Reducing poverty in developing countries is central to Danish development cooperation priorities. A number of crosscutting themes are built into DANIDA's development assistance: women's participation in development, the environment, promotion of democracy and observation of human rights. These crosscutting themes are integrated into DANIDA's development activities more generally.

<http://www.um.dk/english/>

The overall aim of this UK government department is to reduce global poverty and promote sustainable development.

www.dfid.gov.uk

The German development cooperation organization GTZ works worldwide with sustainable development issues. The aim is to improve the living conditions and perspectives of people in developing and transition countries.

www.gtz.de

The ultimate objective of the EU policy is to give disadvantaged people in the third world control over their own development. This means attacking the sources of their vulnerability, including poor access to food and clean water, or to education, health, employment, land, social services, infrastructure and a sound environment. It also means disease eradication and access to cheap medicines to combat scourges like HIV/Aids, as well as action to reduce debt burdens. Nearly half the money spent to help poor countries comes from the European Union and its member states, making it the world's biggest aid donor.

<http://europe.eu.int/>

According to Finland's Policy on Relations with Developing Countries, the development cooperation aims are: promotion of global security, reduction of widespread poverty, promotion of human rights and democracy, prevention of global environmental problems and promotion of economic dialogue.

<http://global.finland.fi>

The Global Environment Facility (GEF), established in 1991, helps developing countries fund projects and programs that protect the global environment. GEF grants support projects related to biodiversity,

<http://www.gefweb.org/>

climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

USAID supports economic growth, agriculture and trade, global health and, democracy, conflict prevention and humanitarian assistance. The preservation and environmentally sound development of the world's water resources is another top priority.

www.usaid.gov

The World Bank Group's mission is to fight poverty and improve the living standards of people in the developing world. It is a development bank that provides loans, policy advice, technical assistance and knowledge sharing services to low- and middle-income countries to reduce poverty.

<http://www.worldbank.org/>

In addition to the above, there are several bilateral funders for instance Austria, The Netherlands, Germany among others, as well as Climate Change financing agencies like the Green Climate Fund.

ANNEX 10: Cost of implementing the 2020 CbiWRM strategy

Action 1: Embed CbiWRM in all Water and Environment Sector originated legislations, policies and strategies	60,000
§ Support to the review and amendment of the National Water Policy and Water Act, and development of targeted regulations	60,000
Action 2: Support the mainstreaming of CbiWRM in legislations, policies and strategies of other sectors	60,000
§ Explore opportunities for (and, where needed, develop a guideline for) mainstreaming CbiWRM in policies, strategies and regulations of other sectors	60,000
Action 3: Support the ratification and adoption of international conventions, protocols, and frameworks	60,000
§ Support the ratification, adoption and domestication of international conventions, protocols and frameworks as needed	60,000
Action 4: Improve coordination and collaboration at all levels	54,540,000
§ Initiate the development of joint strategies, policy and technical briefs on themes where mandates or interests of government MDAs (or catchment stakeholders) overlap	240,000
§ Support relevant coordination committees at national level to enable them to provide policy advice on integrated and sustainable development of water resources	800,000
§ Strengthen coordination among Directorates and departments of the MWE at central level	60,000
§ Institutionalise collaboration at regional level, among MWE deconcentrated units	320,000
§ Fully operationalise CMO structures (<i>2 pilot catchments per WMZ; 1 extra for KWMZ</i>)	4,560,000
§ Strengthen awareness creation about CbiWRM	
- Develop information and knowledge products on the linkages between WR and other sectors	60,000
- Implement mass media campaigns about CbiWRM	2,000,000
- Identify and capacitate "Catchment Ambassadors"	1,500,000
§ Identify model catchments, develop and implement joint projects especially focussing on government MDAs (<i>2 catchments per WMZ; 1 extra for KWMZ</i>)	45,000,000
Action 5: Improve technical capacity at all levels	20,900,000
§ Enhance staffing of WMZs	19,800,000
§ Support WRI to undertake and implement its four core functions of applied training, applied research, outreach and dialogue	1,000,000
§ Support the mainstreaming of CbiWRM education	100,000
Action 6: Formalise and legalise CbiWRM implementation among DLGs	220,000

§ Support DLGs to formalise their CMO partnership	200,000
§ Liaise with NEMA to have CMOs designated as environmental inspectors and to have CMCs play a strong role in the approval process of EIAs of projects	20,000
 Action 7: Strengthen catchment-level stakeholder collaboration and involvement in WRM	 6,050,000
§ Develop and regularly update CMPs for all delineated catchments	4,600,000
§ Popularise CMPs and support their mainstreaming in DDPs	1,300,000
§ Revise issued guidelines and manuals regularly (CPG, Source protection, CMO procedures)	150,000
 Action 8: Strengthen impact monitoring, monitoring networks and assessment tools, and data management	 17,560,000
§ Expand and automate surface water and groundwater and surface water monitoring stations	13,000,000
§ Regularly monitor the impact of CbiWRM implementation	4,000,000
§ Operationalise and maintain a national-level and WMZ-level databases	500,000
§ Develop and implement guidelines for data management	60,000
 Action 9: Establish annual catchment-level water budgets	 400,000
§ Establish annual water budgets for each catchment	400,000
 Action 10: Enhance funding mechanisms for CbiWRM implementation	 20,060,000
§ Establish a Catchments Management Fund	20,000,000
§ Lobby MFPED for tax regulations that enhance direct investment into CbiWRM by companies	60,000
 Action 11: Institutionalise resource mobilization at DWRM, WMZ and CMO level	 900,000
§ Recruit resource mobilisation experts at DWRM and WMZ level (<i>1 expert per zone + 2 experts at DWRM</i>)	900,000

Action	Cost (USD)
Developing CMP	400,000
Reviewing CMP	100,000
Catchments Management Fund per WMZ	5,000,000
Annual cost of WR monitoring per zone	100,000
Reviewing guidelines or manuals	50,000
Average annual cost of WMZ staff	15,000
Lobby consultant - medium term (4 - 6 months)	60,000
Mass media campaign per WMZ per year	50,000
implementation in model catchment	5,000,000
Meeting of national level coordination platform	5,000
Annual operational costs for MWE Regional Office *	700,000
Annual start up support for CMO operations	100,000
Cost of groundwater, surface water monitoring stations per catchment	500,000
Quarterly meetings of heads of de-concentrated units per WMZ	2,000
annual costs of learning visits for CMOs per WMZ	50,000

**co-sharing with CMO members*