



THE REPUBLIC OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT

DIRECTORATE OF WATER RESOURCES MANAGEMENT

UPPER NILE WATER MANAGEMENT ZONE

# ASWA CATCHMENT MANAGEMENT PLAN

POPULAR VERSION







# Contents

<b>1</b>	<b>1 Introduction</b> _____	<b>2</b>
	1.1 Catchment Planning (CBWRM in Uganda) _____	2
	1.2 Purpose and Objective of the Cmp _____	3
	1.3 Approach to Catchment Management Planning _____	4

<b>2</b>	<b>2 Status of the Catchment</b> _____	<b>5</b>
	2.1 Catchment Description _____	5
	2.2 Water Resources Potential _____	5
	2.3 Water Demand And Water Balance _____	6
	2.4 Key Stakeholders _____	7
	2.5 Key Catchment Issues _____	9

<b>3</b>	<b>3 Vision and Objectives</b> _____	<b>10</b>
----------	--------------------------------------	-----------

<b>4</b>	<b>4 Analysis of Options</b> _____	<b>11</b>
	4.1 Potential Options _____	11

<b>5</b>	<b>5 Catchment Action Plan</b> _____	<b>12</b>
	5.1 Implementation Plan _____	12
	5.2 Funding Requirements _____	14
	5.3 Sources of Funds for implementing the Cmp _____	15
	5.4 Roles and Responsibilities _____	15

<b>6</b>	<b>Acknowledgement</b> _____	<b>16</b>
----------	------------------------------	-----------

# 1. INTRODUCTION

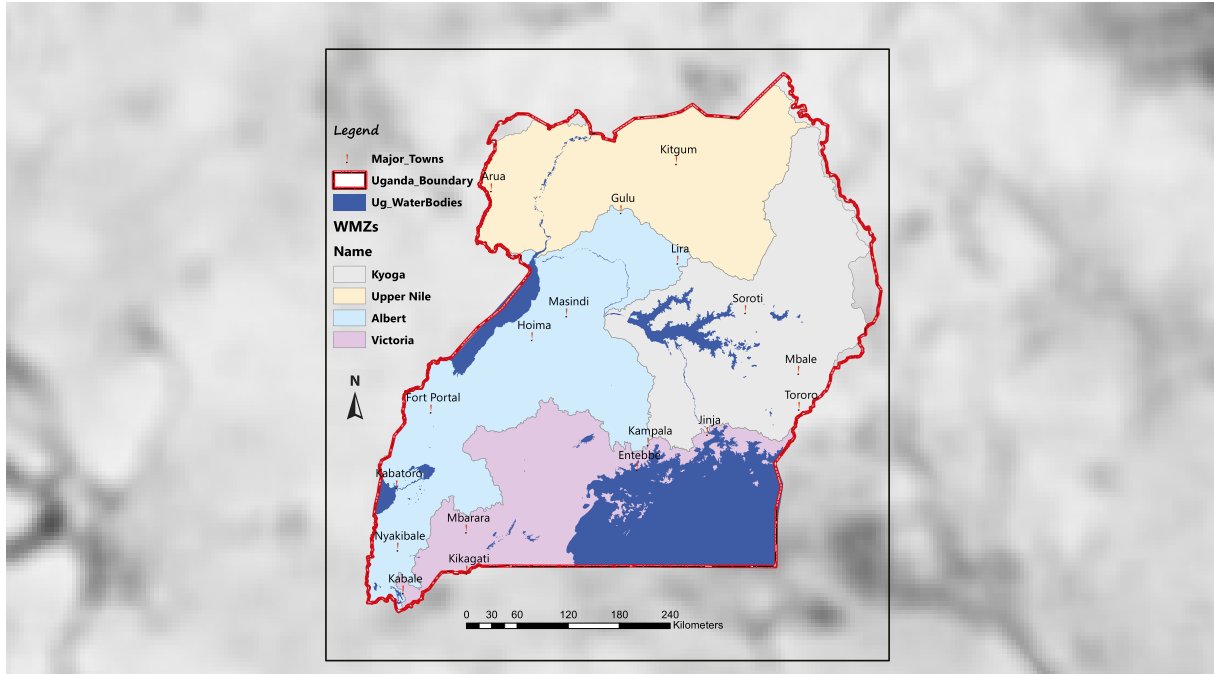


Figure 1: Water Management Zones

Sustainable water resources management and development needs to be informed by the current and projected water demands, challenges, risks, threats, and opportunities in a particular catchment as well as management issues and environmental pressures. This information provides guidance in formulation of development and management activities meant to resolve conflict, conserve and protect the catchment and its natural resources, and ensure equitable access to and sustainable use of water resources; a Catchment Management Plan (CMP). This popular version of the CMP for the Albert Nile Catchment provides a summary of the main CMP and has been prepared for use by various stakeholders.

## 1.1 Catchment Planning (CbWRM in Uganda)

The Directorate of Water Resources Management (DWRM) is implementing Catchment based Water Resources Management (CbWRM) as part of its water resources management reforms. This process deconcentrates management of water resources along hydrological units called catchments; areas that contribute water to a common outlet and are, therefore, independent of administrative boundaries. The CbWRM links

the management of land, water, ecosystems, and socio-economic systems, and allows to plan towards using water resources effectively and efficiently to achieve long-term sustainable development by balancing growing water demands with limited water resources amidst the unique challenges, risks, and threats within the catchment. As part of the CbWRM framework, Uganda has been divided into four Water Management Zones (WMZs): Upper Nile, Albert, Victoria, and Kyoga as shown in Figure 1.

Each of the WMZs contains a number of catchments and the Aswa lies with the Upper Nile Water Management Zone. The CbWRM recognises that many water use and management issues are interrelated, and is founded on early, open and inclusive stakeholder involvement. DWRM is the institutional lead for all CbWRM aspects, including stakeholder involvement, at national level. The WMZs coordinate CbWRM at regional level, but most important is the Catchment Management Organisation (CMO) that promotes coordination and integrated planning among stakeholders in the catchment. Thus, the CMO is a platform that brings together stakeholders in the catchment for

planning and coordination of the development and implementation the CMP as shown in Figure 2.

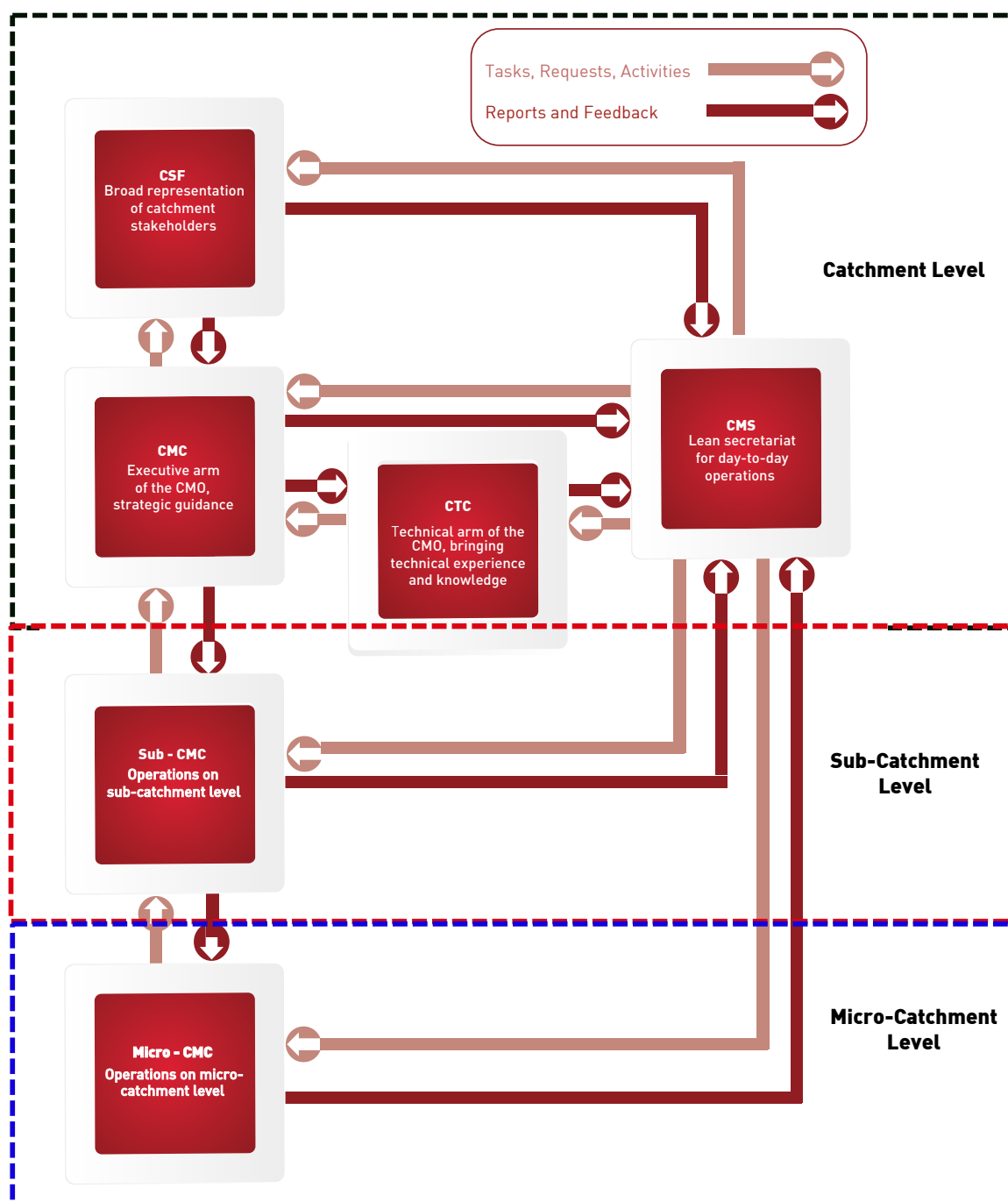


Figure 2: Relation between the different elements of the Catchment Management Organisation

## 1.2 Purpose and Objective of the CMP

The purpose of this CMP is to provide guidance for the sustainable development and management of the water resources in the catchment by the stakeholders in an integrated manner.

The objective of the CMP is to provide information and shared motivation that will initiate interventions and/or investments, which can be implemented to realise sustainable management and development of water resources within the catchment.

### 1.3 Approach to Catchment Management Planning

The development of this CMP was based on the guidelines for Uganda's Catchment-based Water Resources Planning (MWE 2014). The process stipulated in these guidelines provides for various steps including development of a knowledge base, water resources planning analysis, stakeholders' participation, and social and environmental context as indicated in Figure 3. From these thematic assessments, major issues/challenges within the catchment, the available opportunities,

potential threats and risks are identified, options for managing the identified issues also identified, and this forms the basis for strategic analysis in order to meet the catchment vision and objective. A set of agreed interventions are then mapped and an implementation plan laid, constituting of the associated timing and costs, to form the main body of a Catchment Management Plan and the Implementation Plan.

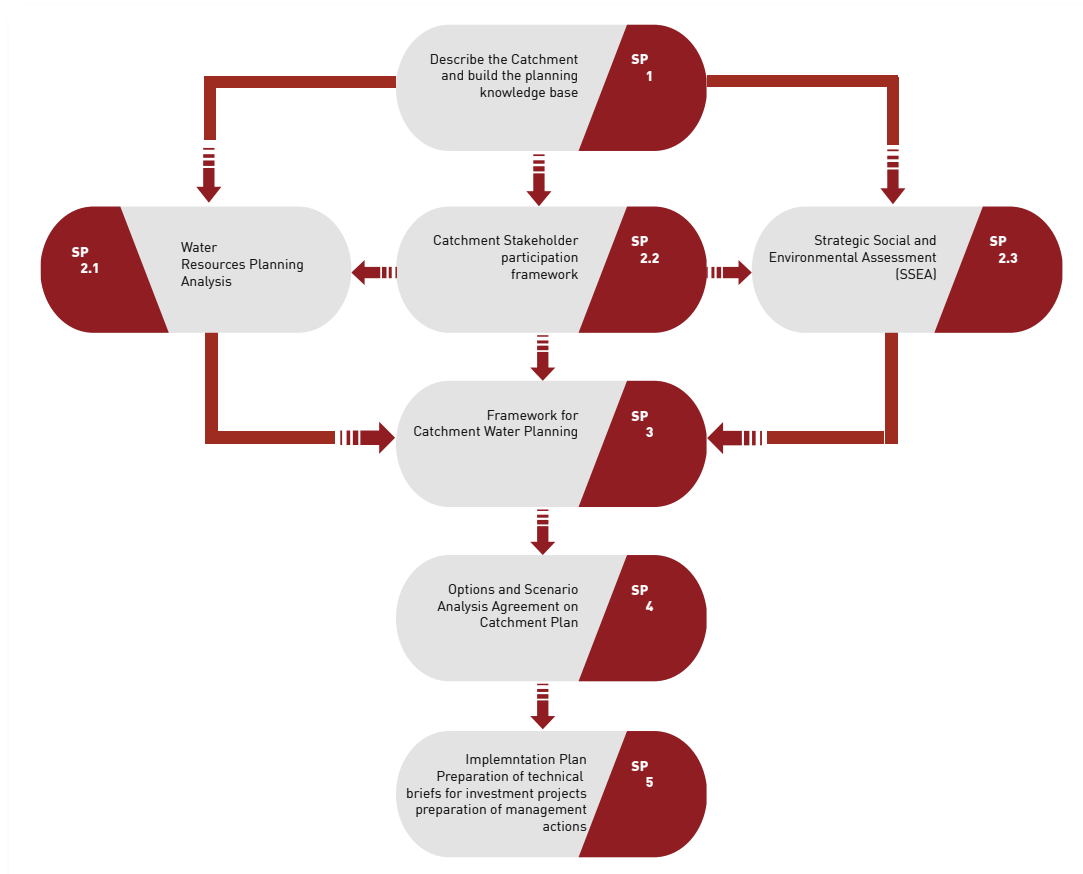


Figure 3: Catchment management planning process (MWE 2014).

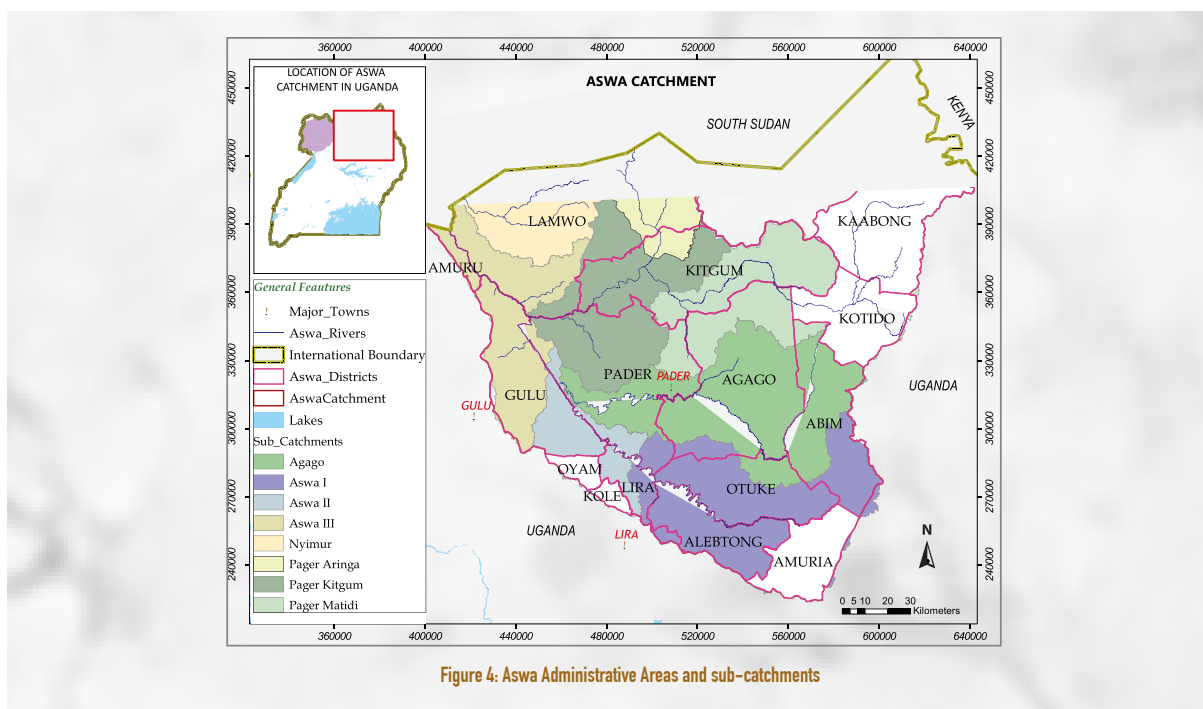


Degraded wetland



A community learning visit to a restored wetland in Agweng sub county.

## 2. STATUS OF THE CATCHMENT



### 2.1 Catchment Description

River Aswa is a major river in north-eastern Uganda, which originates from the hills in the north-western part of Katakwi District and flows through Lira District and becomes the border between Pader and Gulu districts where its two main tributaries; River Agago and then River Pager flow into it. The river forms most of the Uganda-South Sudan border between Atiak and Kitgum before crossing into South Sudan east of the border town of Nimule and joining the White Nile about 10 miles northwest of Nimule. The Aswa Catchment drains an area of 27,677km<sup>2</sup> covering 15 districts of Abim, Agago, Alebtong, Amuria, Amuru, Gulu, Kaabong, Kitgum, Kile, Kotido, Lamwo, Lira, Otuque, Oyam, and Pader in part or whole as shown in Figure 4.

Land cover in the Aswa Catchment is dominated by subsistence farmland, which constitutes over 33% of the land area. The catchment is characterised by subsistence agriculture activities and livestock grazing, with an estimated forest coverage (woodland, woodland temporarily wet and tropical high forest low stocked) of 5,125km<sup>2</sup> (18.62%) of the total catchment area.

The wetland surface in the Aswa Catchment (where the wetland category refers only to the swamp and papyrus vegetation) covers about

88km<sup>2</sup> and it represents, therefore, the 0.32% of the total catchment area while open water covers only about 0.1%.

The Aswa catchment registers an average annual rainfall of about 1,200mm, the highest single annual amount being slightly more than 1,420mm and the lowest being about 1,000mm.

The Aswa catchment registers an average annual rainfall of about 1,200mm, the highest single annual amount being slightly more than 1,420mm and the lowest being about 1,000mm.

Figure 5 below shows the mean monthly rainfall pattern for the entire catchment.

### 2.2 Water Resources Potential

The water resources assessment conducted provides the water resources availability under the current hydrological conditions, and that under climate change projections for the year 2040. The annual average overall surface water available is 2,060MCM/Yr while groundwater recharge is estimated to be 1,351MCM/Yr, as shown in Figure 6. Overall, there is general reduction in water resources available in 2040 (climate change projections) when compared with the current average hydrological conditions.

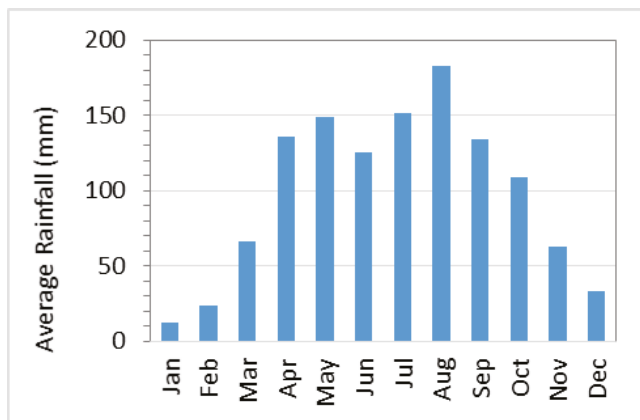


Figure 5: Mean Monthly Rainfall Distribution



Flooding along River Pager

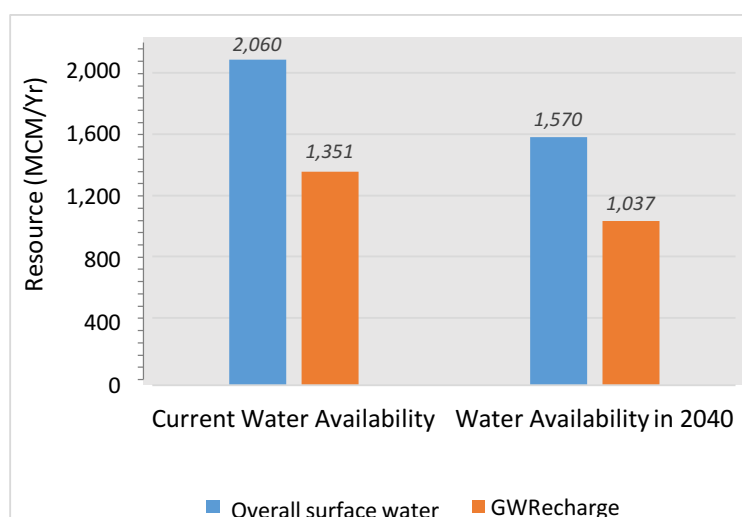


Figure 6: Available Water Resources in Aswa

### 2.3 Water Demand and Water Balance

The current and projected water demand within the Aswa catchment was categorised based on the user category, with the main categories considered being;

- Water for people/Domestic water
- Water for production, includes Water for Crops, Livestock, Industry, and Energy.

The gross water demand for each category from surface or groundwater shows that water for production is the highest with Water for Crops

and Water for Livestock registering the highest amounts, Figure 7.

Comparing the current annual average water availability (2,060MCM/Yr) with the total water demand (53MCM/Yr) depicts the fact there is sufficient water within the catchment. The projected water demand (2,002 MCM/yr) is more than the projected water availability (1570MCM/Yr), Figure 8, which calls for proper water resources management and development.



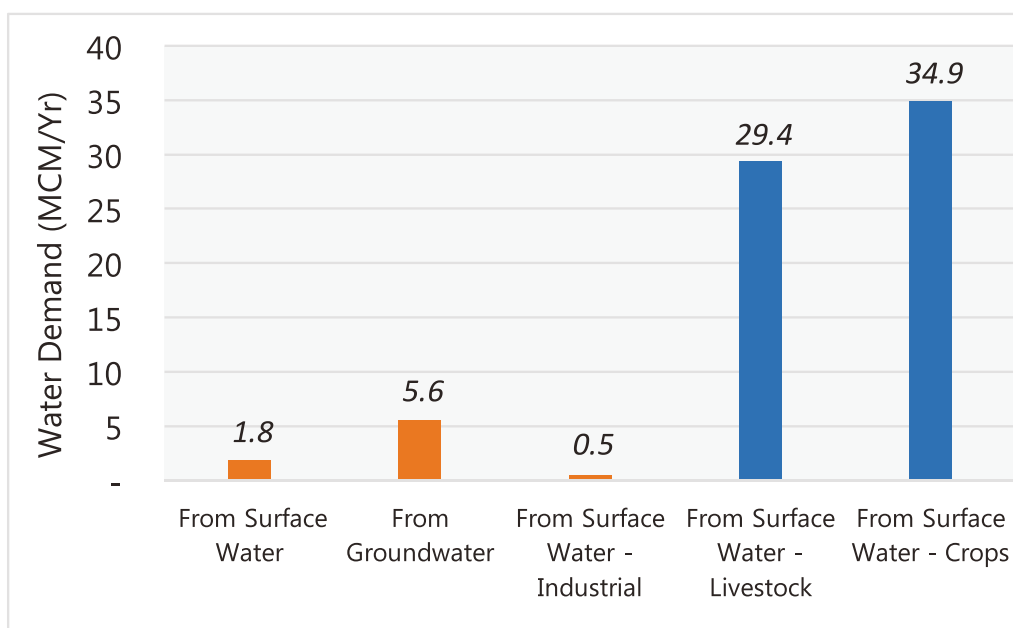


Figure 7: Gross Water Demand in Aswa catchment

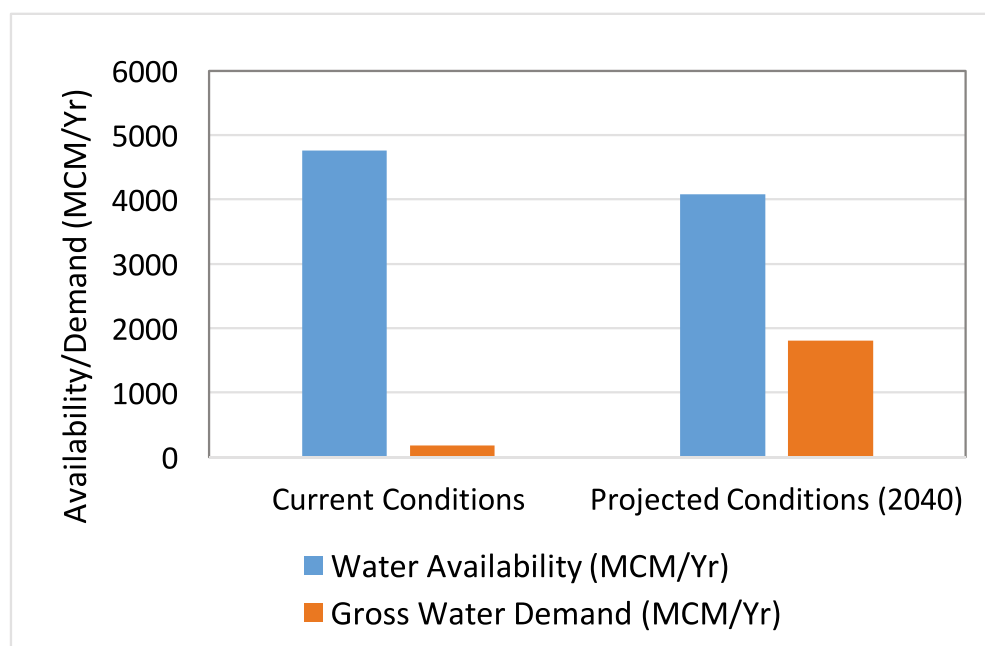


Figure 8: Average Annual Water Balance for all Scenarios

## 2.4 Key Stakeholders

During the development of the CMP, various stakeholders were involved through all the processes highlighted in Figure 3 mainly through

meetings and field visits. These stakeholders, categorised in Figure 9, will continue to be engaged during the implementation of the CMP.

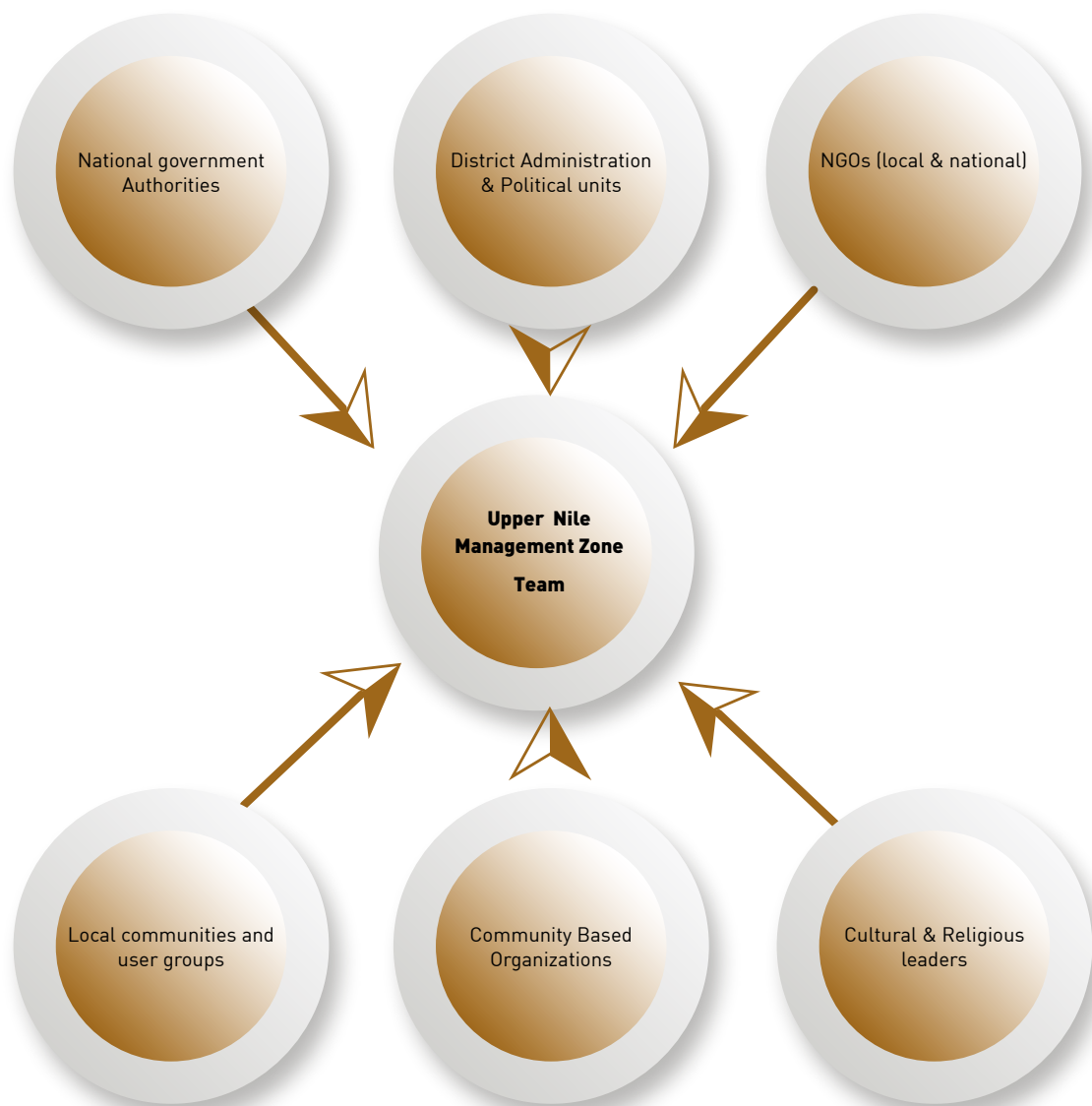


Figure 9: Stakeholder Categories



Community engagement



## 2.5 Key Catchment Issues

Issues within the Aswa Catchment have been grouped in the four main categories that are part of four strategic areas (in addition to the

governance issues) as shown in Table 1 namely; Water for People, Water for Production, Water for Energy, and Water for Environment

Table 1: Key Catchment Issues

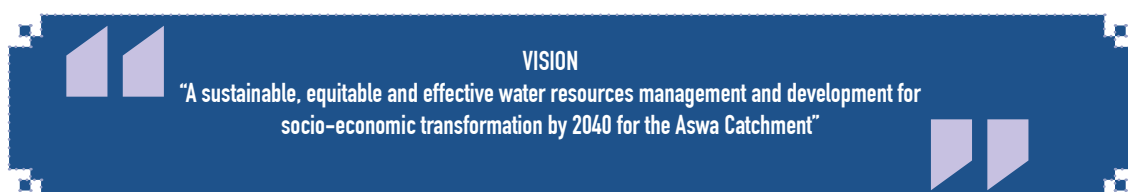
GOVERNANCE ISSUES	WATER RESOURCES ISSUES
<ul style="list-style-type: none"> <li>Limited enforcement of WRM regulation and lack of compliance with existing standards</li> <li>Weak operationalisation of IWRM at WMZ and catchment levels</li> <li>Limited integration of IWRM into sectoral and local planning frameworks</li> <li>Inadequate hydro-meteorological monitoring network</li> <li>Inadequate water quality monitoring network and laboratory facilities</li> <li>Inadequate groundwater monitoring network</li> <li>Inefficient WR/WQ information management system</li> <li>Limited harmonisation of institutional mandates between national and local government bodies and agencies</li> <li>Limited inter-agency cooperation and collaboration</li> <li>Weak stakeholder engagement</li> <li>Inadequate institutional capacity</li> <li>Inadequate technical capacity and lack of tools for water resources allocation</li> <li>Low level of awareness</li> <li>Insufficient funding for CBWRM</li> <li>Limited effective criteria for water resources allocation (high value water use).</li> </ul>	<p><b>WATER FOR PEOPLE</b>  <b>Water Supply and Sanitation</b></p> <ul style="list-style-type: none"> <li>Availability, Storage, Infrastructure, Contamination, Insecurity, Facilities, Sludge, WWTP.</li> </ul> <p><b>WATER FOR PRODUCTION</b>  <b>Agriculture and Industry</b></p> <ul style="list-style-type: none"> <li>Availability, Storage, Irrigation Infrastructure, Contamination, Insecurity.</li> </ul> <p><b>WATER FOR ENERGY</b></p> <ul style="list-style-type: none"> <li>Availability, Storage.</li> </ul> <p><b>WATER FOR ENVIRONMENT</b></p> <ul style="list-style-type: none"> <li>Ecosystem, Anthropical pollution, Land degradation, Floods, Droughts, Extreme events.</li> </ul>








Riverbed in Kaboong

### 3. VISION AND OBJECTIVES

A catchment vision is meant to present a collective, medium-to-long term desired future state of the catchment from which strategies that are realistic and locally attainable can be derived. The vision for the Aswa Catchment was adopted from the Upper Nile WMZ Water Resources Development and Management Strategy, which was developed with extensive stakeholder engagement and in response to the main issues and catchment driving factors.



In order to achieve this vision, nine strategic objectives, arranged in five categories as outlined below were formulated:

SUB-STRATEGY		STRATEGIC OBJECTIVE
Water Governance		1. Equitable, participatory and accountable water governance for sustainable and inclusive growth and development.
Water for People		2. Universal and sustainable access to safe water supply 3. Universal and sustainable access to improved sanitation and hygiene.
Water for Production		4. Sustainable use, development and management of water resources in Agriculture, Livestock, Fishery and Aquaculture, Forestry 5. Sustainable use, development and management of water resources for Agro-industry, Industrial production, Oil and Gas 6. Sustainable use, development and management of water resources for other Sectors (tourism, transportation, security).
Water for Energy		7. Sustainable use, development and management of water resources for renewable energy production.
Water for Environment		8. Conservation of ecosystem services and functions 9. Mitigation of effects of extreme climatic events.



# 4. ANALYSIS OF OPTIONS

## 4.1 Potential Options

Options are possible measures/interventions used to address (a) given issue(s) in a catchment, and they can be management and development in nature. Potential options were identified, primarily based on the type and criticality of issues identified and they were organised in three main categories

to solve/manage issues related to:

- Availability and access to water resources
- Environmental and social sustainability and resilience
- Water governance.

Table 2: Key Options

Category	Key options (others provided in the CMP report)
Availability and access to water resources	Water supply schemes, community water storage facilities; Large multipurpose water storage facilities; Sewage collection and wastewater treatment plants in urban areas, Constructed wetlands; Monitoring and control of WWTP discharge, Bulk water diversion for large scale irrigation water supply; Irrigation technologies for water conservation (sprinklers and drip irrigation), Afforestation & agroforestry, groundwater withdrawal; Renewable energy from hydropower.
Environmental and social sustainability and resilience	Atlas of Water Resources; River restoration, water use efficiency and water conservation; Flood/Drought preparedness and response; Reconstruction, rehabilitation and stabilisation of degraded waterways; Pollution prevention and control.
Water governance	Water Resources monitoring network; Water Resources Information System; Water use efficiency; Affordable technologies for CBWRM; Community based management schemes for small water supply schemes and point water sources; Community based management schemes for village water storage facilities (valley dams, valley tanks); Stakeholder engagement and involvement of community based organisations.



Stakeholders visiting a dry riverbed in Kabong



Community tree nursery

# 5. CATCHMENT ACTION PLAN

## 5.1 Implementation Plan

The implementation plan highlights the agreed investments in infrastructure and various water management interventions and actions meant to help resolve conflict, conserve and protect natural resources, and ensure equitable access to and use of water resources within the catchment. These management and investment actions were organised into 10 programme areas, “A programme being defined as a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programmes may include elements of related work outside of the scope of the discrete projects in the programme.”<sup>1</sup>

### Programme 1: Geo-database and GIS Atlas:

Create a GIS infrastructure to support data storage, exchange, and information management of Aswa Catchment. Develop technical guidelines, protocols and specifications for GIS-database population and management of spatial information.

### Programme 2: Information Management System:

Collect, access, analyse and share a wide range of information for the purposes of evaluating water resources and operational management.

### Programme 3: Water Resource Monitoring:

Collect, access, analyse and share a wide range of information for the purposes of monitoring water resources and operational management. Expand and upgrade the hydro-meteorological monitoring network, hydrogeological monitoring system and WQ monitoring system. Develop an environmental monitoring programme on water bodies (SW and GW) to determine their ecological state.

### Programme 4: Water Resource Knowledge Base:

Implement and maintain a comprehensive knowledge base on Water Resources and Water Resources management through the archival of reference documents and information (paper and digital document).

### Programme 5: Water Resource Planning and Regulation System:

Establish and maintain the Upper Nile WMZ Modelling Unit, improve and expand the water permit management system in the WMZ/Aswa Catchment. Develop water source protection plans and promote integrated pollution prevention and control in the Upper Nile WMZ.

### Programme 6: Water Sector Infrastructure and Facilities:

Expand the water supply infrastructure for full coverage of urban and rural population and increase water storage capacity for domestic water supply in areas with seasonal deficits. Rehabilitate and improve functionality of existing water for production storage facilities and develop

underground water storage for production in areas with water deficit. Expand irrigation schemes. Improve sanitation and hygiene facilities and implement WWTP or alternative wastewater treatment method. Develop water supply facilities using groundwater sources in areas with good potentialities for groundwater resources exploitation.

### Programme 7: Multipurpose Water Storage Facilities:

Define and operationalise a technical standard for design, implementation and management of multipurpose water for production storage facilities, storage facilities including recreational functions and including hydropower.

### Programme 8: Integrated Water and Land Management:

Promote water efficiency practices (water conservation, reuse, recycling); promote irrigation water efficiency and water conservation agricultural practices; and promote optimisation of water for production uses and reuse of treated wastewater for landscaping, green areas and other uses. Ensure appropriate environmental flows in water bodies, establish and maintain a water demand management system, promote integrated land and water management and enforce riverbanks protection zones. Increase preparedness to severe climate events (flood/drought).

### Programme 9: Stakeholder engagement and participatory IWRM:

Stakeholder engagement mechanism developed and established at the WMZ/catchment level. Raising awareness on wise use of water resource and on waste management.

### Programme 10: Technical Capacity Building:

Training activities of catchment/WMZ technical staff, organizations and stakeholder engagement at local/community.

The description of each programme shows the general activities for implementation common to the catchment, while Table 3 shows the specific activities specific to areas within the catchment.

<sup>1</sup> Source: Project Management Institute Glossary <http://www.pmgloss.com/about/>



Table 4: Specific interventions

SUB-PROGRAM	ACTIONS TO BE IMPLEMENTED	PRIORITISED AREA
Water Supply Infrastructure and Service	Develop a programme for design, construction and operationalisation of new piped water supply schemes to cover 100% of urban population	Sub-catchments to the eastern part of Aswa (Aswa I, Agago, Pager Matidi, Pager Kitgum)
	Develop a pre-feasibility Study for design, construction and operationalisation of new water storage facilities for drinking water supply in sub-catchments with water deficit	Pager Kitgum sub-catchment (main town Kitgum)
	Develop a detailed hydrogeological study for assessment of potential capacity for water supply from groundwater.	Aswa I, Aswa II, Aswa III, Nyimur, dawnstream areas of Agago and Pager Kitgum sub-catchment.
Water for Production Facilities	Develop and implement a GIS based programme for rehabilitation and management of existing water for production storage facilities and infrastructure	Alebtong, Otuke, Abim, Kitgum and Lamwo District
	Based on the detailed hydrogeological assessment of the Aswa Catchment, develop a programme for WFP underground water storage and groundwater recharge	Higher part of Pager Matidi and Agagosubcatchment (Kaabong District)
	Develop a pre-feasibility study for design, construction and operationalisation of new irrigation schemes (Type A and B) in suitable areas.	Suitable areas Aswa I, Agago and Aswa II sub-catchments.
	Define and operationalise a set of technical standards for developing intensive and semi-intensive aquaculture facilities, including provisions for water efficiency, water quality and protection of biodiversity	Aswa I, Agago and Aswa II sub-catchments
	Develop study for detail design, construction and operationalisation of new water for large production storage facilities (multipurpose) in in sub-catchments with seasonal deficit	Aswa I, Aswa II, Pager-Aringa and Nyimur sub-catchment
	Multi-year programme for operationalisation small WFP facilities: small control dam/sand dam and valley tanks	Aswa II, Aswa III, Pager Aringa and Pager Matidi sub-catchment.
	Develop and operationalise a technical standard for installation and operation of rainwater harvesting installations at village and household level.	
Sanitation Infrastructure and Service	Improve sanitation and hygiene facilities in rural and urban areas, mainly in the areas with highest population density in Aswa Catchment	Kigum TC, Pader TC, the most populated areas of Agago district (including Patongo TC, Kalongo TC and Agago TC), Kole and Lira districts and most populated areas of Alebtong and Amuria districts
	Implementation of WWTP or alternative wastewater treatment method (e.g. lagoon).	Kitgum, Agago, Abim and Pader town
Multipurpose Water Storage Facilities	Define and operationalise a set of Technical Standards for developing eco-tourism facilities.	Protected area and forest in Kitgum, Kaabong, Abim and Agago Districts
Water Efficiency	Define and operationalise a set of technical standards for water efficiency (conservation, reuse, recycling) for recreation and other uses based on best practices	Protected wetland area of Pager Matidi and Aswa I sub-catchment
Integrated Water and Land Management	Based on the updated land cover of NFA, develop and implement a programme for creating a green infrastructure system to protect ecosystems, ecologic corridors and natural landscapes in the water bodies	Protected wetland area (Land Cover of NFA) of Pager Matidi and Aswa I sub-catchment
	Based on the updated Land Cover of NFA, develop and implement a programme for creating a green infrastructure system to protect ecosystems, ecologic corridors and natural landscapes and support livelihoods in the cattle corridor.	Areas of cattle corridor (Land Cover of NFA) i.e.in Aswa I, Pager Matidi and Agago sub-catchment
Technical Capacity Building	Develop a multi-year capacity building programme for wetlands and aquatic ecosystems assessment, based on best practices and standards, including preparation of training manuals.	Protected wetland area (Land Cover of NFA) of Pager Matidi and Aswa I sub-catchment
Technical Capacity Building	Develop a multi-year capacity building programme for sustainable development and management of wetlands and aquatic ecosystems, based on best practices and standards, including preparation of training manuals.	Protected wetland area (Land Cover of NFA) of Pager Matidi and Aswa I sub-catchment

## 5.2 Funding Requirements

A summary budget for implementation of the Aswa CMP is presented in the Table below:

Table 5: CMP Funding requirements

Programme/ Sub-programme	2017-2020 US\$ '000	2020-2025 US\$ '000	2025-2040 US\$ '000	Total cost US\$ '000
Programme 1: Geo-database and GIS	228	14	43	285
Programme 2: Information Management System on WR	448	28	84	560
<i>Sub-Programme 1: Information Management System on Water Bodies</i>	90	6	17	113
<i>Sub-Programme 2: Information Management System on Water Supply and Sanitation Facilities</i>	177	11	33	222
<i>Sub-Programme 2.03: Information Management System on Water for Production Facilities</i>	180	11	34	225
Programme 3: Water Resources Monitoring	4,976	311	933	6,220
Programme 4: Water Resources Knowledge Base	3,029	189	568	3,786
<i>Sub-Programme 1: Improve and Expand the Knowledge Base on Water Resources</i>	1,073	67	201	1,342
<i>Sub-Programme 2: Improve and Expand the Knowledge Base on Water Infrastructures and Facilities</i>	1,423	89	267	1,779
<i>Sub-Programme 3: Integrated Knowledge for Management of Water Resources</i>	451	28	85	564
<i>Sub-Programme 4: Knowledge Management and Exchange</i>	81	5	15	101
Programme 5: Water Resources Planning and Regulation System	1,007	63	189	1,259
Programme 6: Water Sector Infrastructure and Facilities	61,416	374,183	1,122,548	1,558,146
<i>Sub-Programme 1: Water Supply Infrastructure and Service</i>	13,617	81,703	245,110	340,431
<i>Sub-Programme 2: Sanitation Infrastructure and Service</i>	23,511	141,066	423,199	587,777
<i>Sub-Programme 3: Water for Production Facilities</i>	24,288	151,413	454,238	629,939
Programme 7: Multipurpose Water Storage Facilities	1,608	19,695	59,084	80,387
Programme 8: Integrated Water and Land Management	2,264	13,582	40,747	56,593
<i>Sub-Programme 1: Water Efficiency</i>	14	81	243	338
<i>Sub-Programme 2: Environmental Flows and Reserve Management System</i>	23	136	408	567
<i>Sub-Programme 3: Integrated Water and Land Management</i>	2,213	13,281	39,842	55,336
<i>Sub-Programme 4: Resilience to Climate Variability and Change</i>	14	84	253	352
Programme 9: Stakeholder Engagement and Participatory IWRM	35	207	622	863
<i>Sub-Programme 9.01: Stakeholder Engagement and Participatory IWRM</i>	9	55	166	231
<i>Sub-Programme 9.02: Awareness Raising</i>	25	152	455	633
Programme 10: Technical Capacity Building	49	297	891	1,237



### 5.3 Sources of Funds for Implementing the CMP

The implementation of the CMP plan will require funding from different sources, according to the type of action/intervention and of the relevant sectors involved in the implementation. These include mainly five sources:

1. **Water and Environment Sector Budget:** with the Ministry of Water and Environment supporting implementation of the CMP programmes and sub-programmes as the lead agency. Other relevant line ministries may also support parts of the CMP.
2. **Joint Partnership Fund (JPF):** a pooled fund managed by Ministry of Water and Environment that includes both non-earmarked funding and earmarked funding based on the different bilateral agreements between the GoU and sector development partners.
3. **Sector Budget Support (SBS):** is used to channel funds to the local governments for activities to be implemented at the de-concentrated level, through conditional grants, directly from the treasury/MoFPED to the local governments, in line with Uganda's fiscal de-concentration policy.
4. **Off budget operations:** forms of government operations that are not fully reconciled with the national budget and sector budget. The main forms of off-budget expenditures are off-budget funds, direct loans, guarantees, and public-private partnerships (PPPs).

5. **Private sector investments:** Private actors might include either international or national, regional and local operators, as well as joint ventures among private operators with public institutions or utilities are considered as an important tool in Uganda's plan to bridge the infrastructure financing gap. The PPP Act, passed in 2015, provides methods for procurement and the engagement of private partners in PPPs.

The vital role of not-for-profit organisations (CBOs and NGOs) shall be included in the private sector contribution to the implementation of the catchment WRDM plan

### 5.4 Roles and Responsibilities

The CMP is implemented by the Aswa Catchment Management Organisation (CMO) in close collaboration with UN-WMZ. The UN-WMZ and/or Aswa CMC shall take the initiative and provide guidance to CMP implementation. However, project implementation can be done by any stakeholder willing to contribute funding, knowledge, skills or other resources. Hence, stakeholders ranging from water users to development partners and corporate sector, can collaborate or contribute to the implementation of the CMP. Table 5 summarises some of the roles and responsibilities of stakeholder groups in the implementation of the CMP.

Table 6: Roles and Responsibilities

Stakeholder	Roles and Responsibilities
<b>MWE/DWRM/U WMZ</b>	Coordinate in terms of planning, link national and catchment levels, mobilise funds, supervise CMP implementation, build capacity of the CMOs, and provide institutional and technical assistance to the CMOs.
<b>Aswa CMO/CMC</b>	Promote and coordinate CMP implementation, review the CMP on a regular basis; mobilise resources, monitor and evaluate implementation of the CMP, including impact monitoring.
<b>District local councils</b>	Facilitate and support CMP implementation, e.g. through incorporation of prioritised interventions in District Development Plans, actively participate in CMO activities, plan/prepare/implement interventions of the CMP, ensure compliance with the CMP, and support mobilisation of funds.
<b>CBOs, CSOs, NBOs</b>	Raise awareness on the CMP implementation activities, mobilise communities, mobilise resources, and implement parts of the CMP.
<b>Development partners</b>	Mobilise resources, conduct research, prepare proposals, build technical and institutional capacity, support stakeholder involvement, link government with primary users.
<b>Private sector</b>	Establish CMP proof businesses, invest in CMP proof interventions, support mobilisation of funds.
<b>Water users</b>	Align user and management practices with the CMP, and implement CMP projects.

## 6. ACKNOWLEDGEMENT

The Aswa Catchment Management Plan was developed by Upper Nile Water Management Zone of the Directorate of Water Resources Management, Ministry of Water and Environment of the Republic of Uganda, with financial support from the World Bank under the Water Management

and Development (WMDP) Project.

Valuable contributions were made by the stakeholders of Aswa Catchment during fieldwork and workshops.







This popular version of the Aswa Catchment Management Plan (CMP) summarises the main findings and the key messages. For more details on the approach, the results of the assessments, the interventions to be implemented, where and when how that implementation will take place, please refer to the main Catchment Management Plan, its corresponding Implementation Plan and the technical reports (Stakeholder Engagement Report, Water Resources Assessment Report, Social and Environmental Assessment, and Options Evaluation Report).

#### **CONTACT INFORMATION:**

Upper Nile Water Management Zone  
Plot 14/16, Maruzi Road  
P.O Box 381, Lira - Uganda  
Email: [uppernilewmz@gmail.com](mailto:uppernilewmz@gmail.com)  
Attn. Team Leader Upper Nile Water Management Zone

Directorate of Water Resources Management  
Attn. Director DWRM, E: [floadongo@gmail.com](mailto:floadongo@gmail.com), T: +256 (0)414320914  
Attn. Coordinator Water Management Zones,  
E: [callist\\_tindimugaya@yahoo.co.uk](mailto:callist_tindimugaya@yahoo.co.uk) | [callist.tindimugaya@mwe.go.ug](mailto:callist.tindimugaya@mwe.go.ug)  
T: +256 (0)414323531, A: Plot 3-7 Kabalega Crescent, Luzira, Kampala