



REPUBLIC OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT
DIRECTORATE OF WATER RESOURCES MANAGEMENT



CATCHMENT MANAGEMENT PLANNING GUIDELINES

POPULAR VERSION

2019



Overlooking River Nyamwamba from the hill slopes of the catchment close to the Mt. Rwenzori National Park

TABLE OF CONTENTS

1

INTRODUCTION.....1

1.1 Background to Catchment Management planning.....	1
1.2 Purpose of these Guidelines.....	4

2

INSTITUTIONAL ARRANGEMENTS.....6

3

CATCHMENT MANAGEMENT PLANNING PROCESSES.....8

STEP 1 - DESCRIBING THE CATCHMENT AND BUILDING THE KNOWLEDGE BASE.....	10
STEP 2 - WATER RESOURCES ASSESSMENTS AND STAKEHOLDER PARTICIPATION.....	12
STEP 2.1 - <i>Water Resources Planning Analysis</i>	12
STEP 2.2 - <i>Framework for Stakeholder Participation</i>	14
STEP 2.3 - <i>Strategic Social and Environmental Assessment (SSEA)</i>	16
STEP 3 - FRAMEWORK FOR CATCHMENT PLANNING.....	18
STEP 4 - OPTION AND SCENARIO ANALYSIS.....	20
STEP 5 - MOVING TO IMPLEMENTATION	21

ACKNOWLEDGMENTS.....23

CONTACT INFORMATION

1

INTRODUCTION

1.1 Background to Catchment Management Planning

Sustainable water resources management and development in an integrated manner is a mandate of the Ministry of Water and Environment through the Directorate of Water Resources Management. This Integrated Water Resource Management (IWRM) approach is well stipulated in the National Water Policy and provides an overall policy framework which defines the Government's policy objective as:

“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.”

To achieve this objective, the National Water Policy is based on the implementation of the objectives for water management within the IWRM framework. IWRM in a river basin context is defined as

“a process that enables the coordinated management of water, land and related resources within the limits of a basin so as to optimize and equitably share the resulting socio-economic well-being without compromising the long term health of vital ecosystems.”

For effective implementation of IWRM, Uganda provided for de-concentrated management of water resources to the local catchment level with the participation of all stakeholders. Following the recommendations of the National Water Policy,

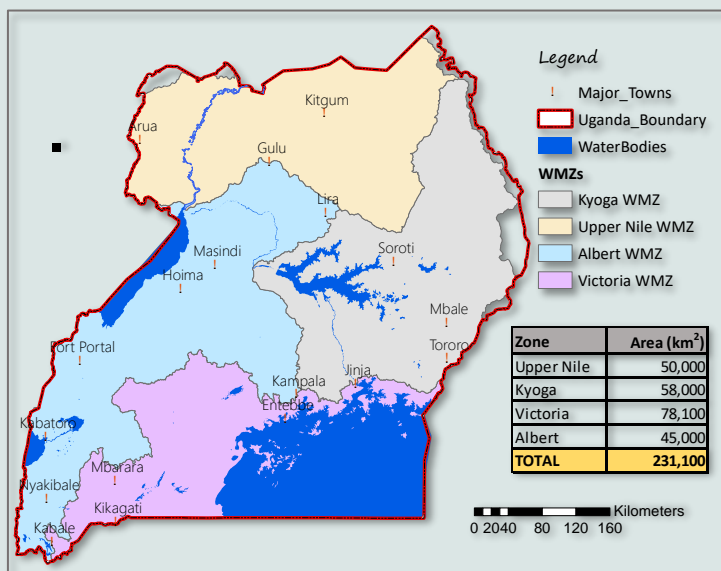


Figure 1: Water Management Zones

the Water Sector Reform Study (2005), the Joint Sector Review (2006) and other national and regional policies as well as steps already taken for implementation purposes, the country was delineated into four Water Management Zones (WMZs) aligned to hydrological boundaries. Thus, the northern parts of the country are covered by the Upper Nile Water Management Zone (UNWMZ), the western parts by the Albert Water Management Zone (AWMZ), the south by the

Victoria Water Management Zone (VWMZ) and the east by the Kyoga Water Management Zone (KWMZ) Figure 1. Within each Water Management Zone, there exists a number of smaller hydrological units called catchments, the appropriate level at which IWRM is being implemented, thus the need for catchment management planning, requiring catchment management planning guidelines for effective implementation across all the four WMZs.

This report presents the popular version of catchment management planning guidelines, the details of which can be found in the main report



1.1 Purpose of these Guidelines

To effectively implement the IWRM functions, the four Water Management Zone (WMZ) teams require a common framework that guides the catchment planning process, thus the guidelines are purposed to:

- Provide the WMZ planning teams and other stakeholders an overview of the catchment management planning process and the outcomes being sought.
- Help to create awareness and understanding of the catchment management planning process and its value in supporting sustainable, equitable and more rapid economic growth and livelihoods.
- Inform the WMZ planning team and other stakeholders on the scope of the catchment management planning process.
- To provide a common policy and institutional framework for catchment management planning.
- To provide a strategy and guidance on stakeholder participation.
- To provide a generalized step-by-step process that can be applied flexibly to take into account realities on the ground, yet would yield a plan that is technically and economically sound where stakeholders in the catchment have been substantially involved in its preparation.
- To provide guidance on different approaches that can be used to implement various steps and activities in the planning process.
- To help the planning team design its work plan and schedule its activities.

It is important to note that these guidelines describe processes for guiding planning at catchment, sub-catchment and micro-catchment scales.

These guidelines are a “living document” which require continued refinement and strengthening based on experiences and lessons learnt from ongoing catchment management planning activities. The current guidelines assume a close working relationship between the central level DWRM departments and the WMZ teams and may therefore require review and/or updating once this assumption no longer holds



2

INSTITUTIONAL ARRANGEMENTS

The Ministry of Water and Environment (MWE), through its directorates, plans and coordinates all water and environmental sector activities and is the ultimate authority responsible for water resources and environmental management in Uganda. At the regional level, WMZs coordinate Catchment based Water Resources Management, but they also establish Catchment Management Organizations (CMO) which promote

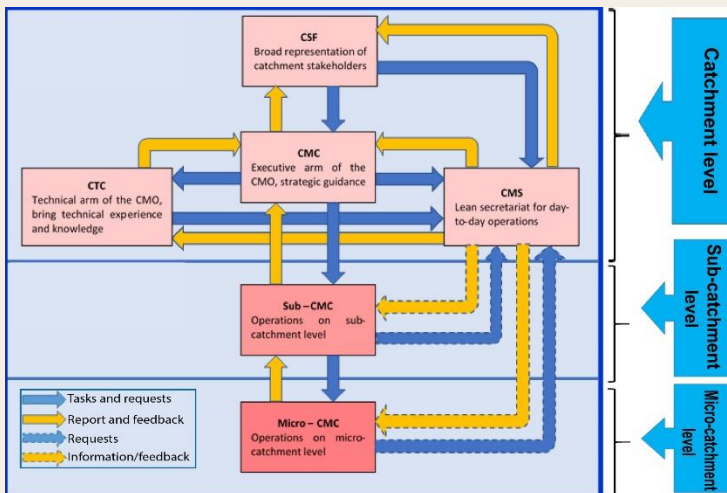


Figure 2: Catchment Management Organisation Structure (DWRM 2017)

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 of the Catchment Management Plan. The CMOs are established building on, and utilizing to the maximum practicable extent, existing structures and relationships. The structure of the CMO, Figure 2, provides for a Catchment Stakeholder Forum (CSF), Catchment Management Committee (CMC), Catchment Management Secretariat (CMS), and Catchment Technical Committee (CTC).

For support and sustainable implementation of catchment management plans, the CMO has linkages to the WMZ, Directorate of Water Resources Management (DWRM), WMZ Advisory Committee, the Water Policy Committee, District councils and Administrative structures, the District technical planning committees, as well as any other formal resource user groups, NGOs, CBOs, and any other stakeholder groups. The details of these linkages, roles and responsibilities of each of these is well stipulated in the CMO Procedures manual| 2017.



3

CATCHMENT MANAGEMENT PLANNING POLICY

The Catchment management planning process is a series of steps, Figure 3 each of which contains varying numbers of tasks. The steps and tasks are sometimes iterative and often interdependent. It is important to note that these steps provide a framework within which the WMZ team and other stakeholders will refine and develop, in detail, their approach according to the needs and conditions in a specific catchment. They are not meant to be followed mechanically, but rather to provide guidance on the catchment management planning process.



STEPS IN THE CATCHMENT MANAGEMENT PLANNING

BROAD

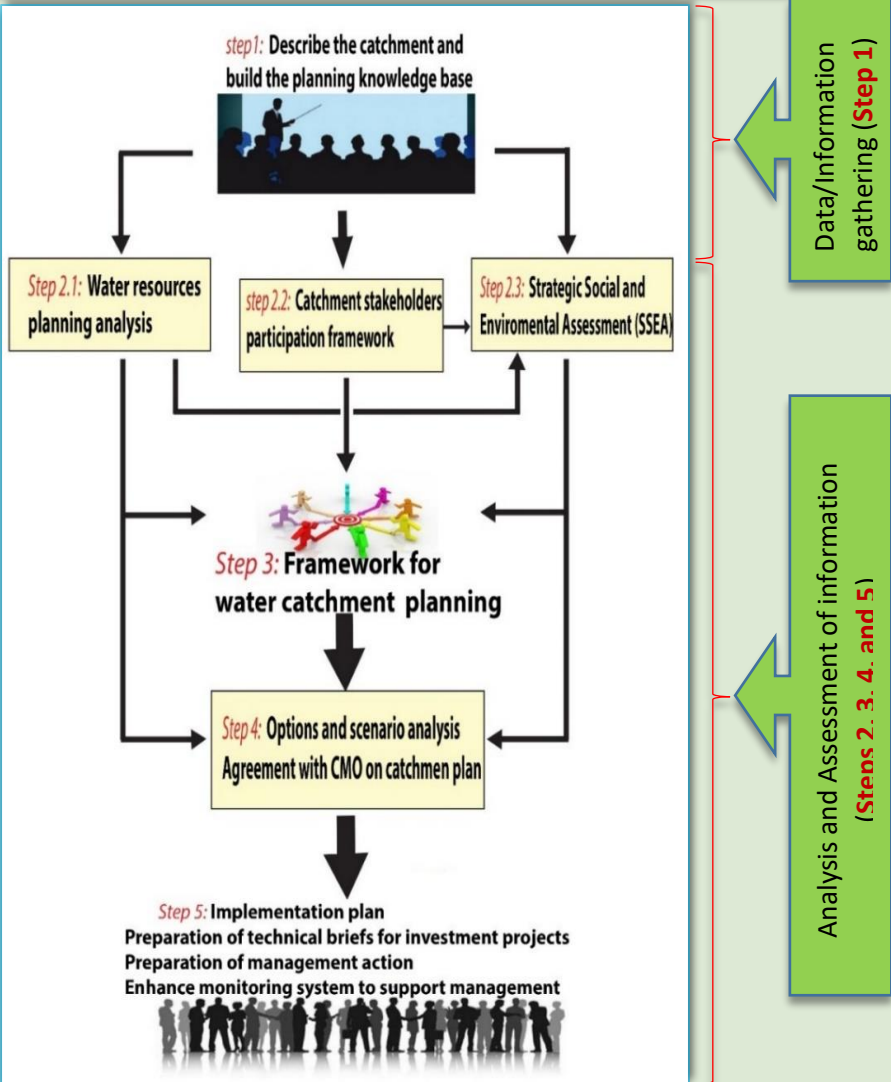


Figure 3: Overview of the catchment management planning process

STEP 1 - Describing the catchment and building the knowledge base

Context:

Attaining a good understanding regarding the status, functioning, and therefore sustainable management of a catchments' resources in the face of competing water demands, floods and droughts, climate variability and change, requires adequate data and information about the catchment.

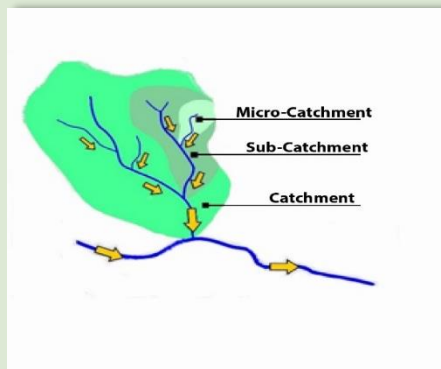


Figure 4: Catchments, sub-catchments and micro-catchments

Acquiring this information not only assists in understanding and describing the catchment but also provides a firm foundation for shaping solutions, or understanding progress towards outcomes sought and therefore helps the planning team to optimize the sustainable use of water and related resources, as well as managing risks related to water resources.

Purpose: The purpose is to delineate and describe the catchment, compile and organize all available data and information - the knowledge base that is needed to support the planning process



KEY TASKS

- 1.1 Delineating the Catchment and Sub-Catchment boundaries
- 1.2 Developing a Catchment Information Management System
- 1.3 Building the Catchment Knowledge Base
- 1.4 Prepare a schematic diagram of the catchment

KEY OUTPUTS

- 1) Delineated catchment and sub-catchments
- 2) A spatial database that can be used to support consultation and collaboration with stakeholders and planning analysis.
- 3) A collection of all data in all forms; digital and hard copy, temporal and spatial.
- 4) A schematic diagram which describes the stream network as a series of links and nodes (connections) and includes all existing and proposed water uses and water infrastructure of the catchment.



STEP 2 - Water Resources Assessments and Stakeholder Participation

STEP 2.1 - Water Resources Planning Analysis

Context:

Sustainable water resources management and development requires knowledge regarding the available quantity and quality of water both in time and space within the catchment. Intertwined with this is water use and demand both for the present and future cases while

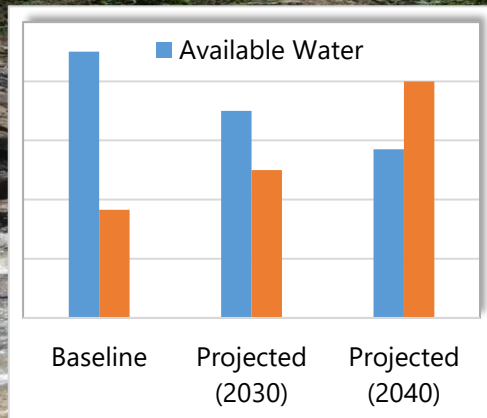
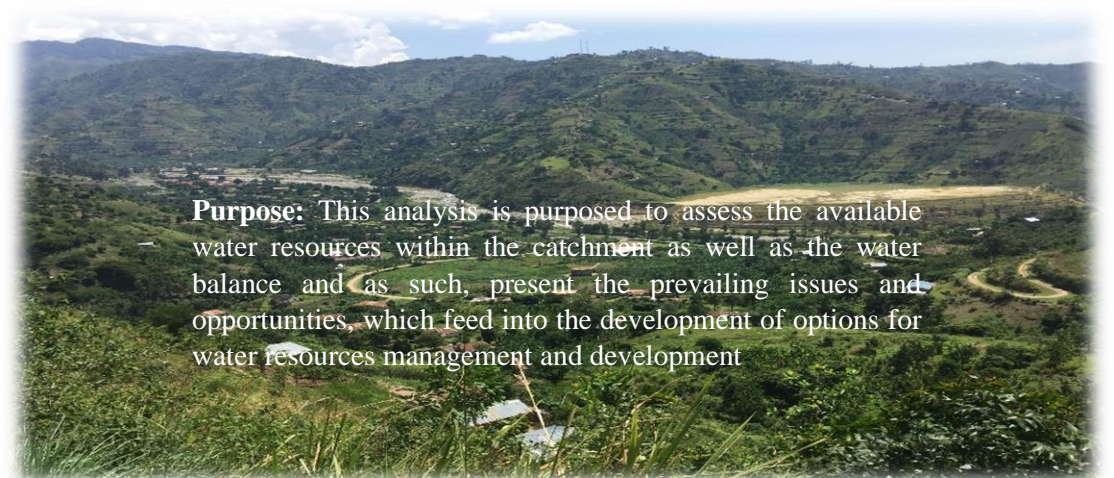


Figure 5: Water availability Vs. Demand

considering all drivers including climate change. This analysis informs the planning team about the prevailing and emerging water related challenges and opportunities, and therefore forms the basis for sustainable allocation as well as management of the resource.



Purpose: This analysis is purposed to assess the available water resources within the catchment as well as the water balance and as such, present the prevailing issues and opportunities, which feed into the development of options for water resources management and development



KEY TASKS

- 1) Selection of analytical tools for planning and water resources management.
- 2) Assessment of baseline water resources availability and use including, groundwater availability and mapping, surface water availability and the environmental flow regime, rainfall and stream flow extremes, and water quality assessment.
- 3) Projection of future water use.
- 4) Water Balance; comparing water resource use and demand.



KEY OUTPUTS

- 1) Current status of the quality and quantity of water resources (groundwater and surface water) within the catchment at different spatial and temporal scales taking into account the constraints and opportunities in different sub-catchments, including the risks of extreme events (floods and droughts), as well as climate change.
- 2) Current and projected water use/demand analysis.
- 3) A picture of how water supply and demand compare based on the results of the water balance analysis.
- 4) Catchment issues and opportunities



STEP 2.2 - Framework for Stakeholder Participation

Context:

Understanding catchment management issues is best achieved by engaging people and institutions who perceive them, or whom they affect. More so, effective implementation of the identified infrastructure and management activities later in this process, requires involvement of all interested or affected stakeholders from the very beginning.

Purpose:

Stakeholder participation is purposed to:

- a) To raise awareness and promote greater understanding and appreciation of the catchment water resource system, the prevailing issues, threats, and opportunities.
- b) To facilitate greater “buy-in” or commitment on the part of catchment
- c) Stakeholders to the plans for water management and developments in the catchment that are ultimately agreed upon.



Figure 6: Stakeholder interaction with the WMZs

To create continuing mechanisms and processes that are accepted by water users and other key stakeholders (e.g., local government) and institutionalized within the catchment for conflict resolution, water regulation and enforcement, and other water management measures.



KEY TASKS

- 1) Stakeholder Identification and Mapping
- 2) Stakeholder Analysis
- 3) Create the CMO and Advisory Groups structure
- 4) Stakeholder Engagement

KEY OUTPUTS

- 1) Stakeholder database at all levels; national, regional and catchment.
- 2) Mobilised CMO committees, Figure 2, and all stakeholder groups, roles of each group explicitly explained.
- 3) Program to inform, train and operationalize the CMO is designed and implemented
- 4) These should also be put in graphics



STEP 2.3 - Strategic Social and Environmental Assessment (SSEA)

Context:

Proper formulation of the management and development options that form scenarios which feed into the catchment management plan is informed by clear issues, threats, and opportunities available within the catchment, as well as the direction desired by stakeholders. Thus, together with the stakeholder participation and water resources planning analysis steps, key vulnerabilities in the catchment are identified, and linkages, cumulative impacts and options for mitigation are assessed which forms the basis for subsequent steps on the catchment management planning process.

Purpose:

The SSEA is aimed at identifying the major socioeconomic and environmental issues within the catchment which have to be considered during the formulation of management and development options.



KEY TASKS

- 1) Assessment of Land Use and Development in the Catchment
- 2) Assessment of the Vulnerable Environments in the Catchment
- 3) Design a Stakeholder Participation program for the SSE
- 4) Assessment of Linkages, Cumulative Impacts and Options

KEY OUTPUTS

- 1) Strategic social-economic and environmental issues, threats, and potential opportunities.
- 2) Clear stakeholder participation program that specifies who will participate, what methods will be used to engage them, and whether there will either be information provision, consultation or negotiation with them (or a combination of all three).
- 3) Full understanding of the impacts of the different activities within the catchment on their own and in combination (cumulative impacts).



STEP 3 - Framework for Catchment Planning

Context:

From the previous steps in the catchment management planning process, catchment issues and threats have been identified. Management of these issues and threats, while riding on the available opportunities, requires a clear catchment direction (strategic objectives) set by stakeholders which guides the formulation of investment and management options.

Purpose:

The framework for catchment planning is intended to address prevailing and emerging catchment issues and threats by defining catchment objectives and indicators, as well as both investment and management options.





KEY TASKS

- 1) Compiling and summarizing information of the Catchment and Sub-Catchments.
- 2) Developing planning objectives and indicators.
- 3) Identifying and summarising the major Planning Issues and Options.
- 4) Analyzing and developing options for Catchment and Source Protection.

KEY OUTPUTS

- 1) Synthesized catchment and sub-catchment issues, threats, opportunities.
- 2) Catchment visioning – desired state of the catchment, catchment objectives and indicators.
- 3) Options that involve some type of investment to conserve, store, divert, extract, protect, convey, carry or otherwise control water for productive purposes.
- 4) Options involving management actions including water allocation, water use and wastewater discharge regulation including operating rules for storages, permitting, monitoring and measuring water, empowering user groups, facilitating and supporting actions by others such as district councils or inter-district mechanisms, or water demand management initiatives such as promoting changes in crops or cropping patterns, improving efficiency or water deficit management.



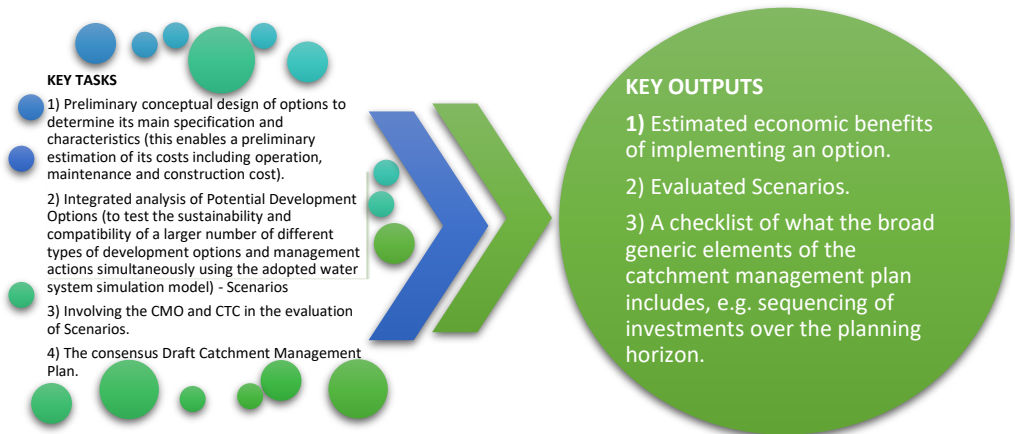
STEP 4 - Option and Scenario Analysis

Context:

Investment and management options identified to manage catchment issues and threats have both discrete and combined benefits that need to be assessed and quantified. Based on the catchment direction and strategic objectives, combinations of the identified options are formulated to address a wide range of issues. Evaluation of these scenarios would present the optimal scenario that the stakeholders agree with.

Purpose:

This step purposes to analyze the identified options and scenarios which then forms the basis for developing a catchment management plan.



STEP 5 - Moving to Implementation

Context:

With the optimal scenario in place, a catchment management plan is developed based on the consensus draft plan. The draft CMP is reviewed, and adopted, and subsequently an implementation plan developed too. As a minimum, the CMP shall include a list of identified, confirmed and quantified priority catchment management investments; prepared to feasibility level and costed, ready for implementation, including associated environmental project briefs for each sub-projects in line with the NEMA regulations and the World Bank Environmental and social safeguards. This is done in consultation with stakeholders.

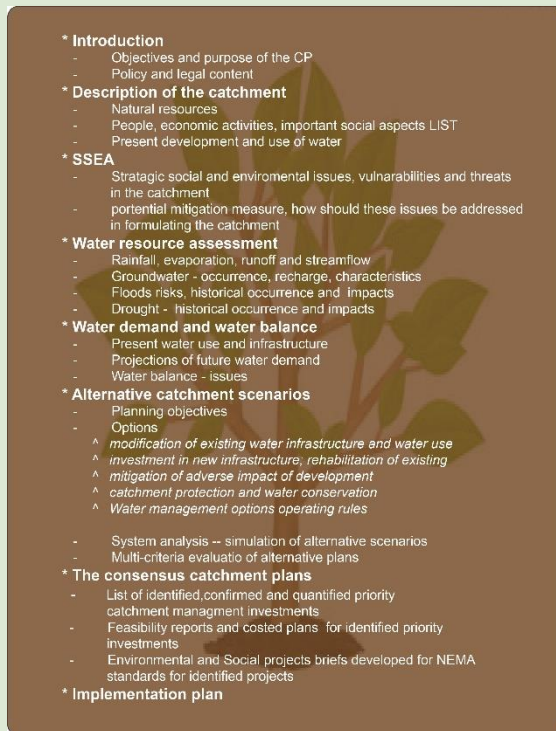
- 
- The image shows a brown rectangular box with a faint background image of a green plant. Inside the box, there is a list of sections and sub-sections for a Catchment Management Plan (CMP). The sections are marked with asterisks and include: Introduction, Description of the catchment, SSEA, Water resource assessment, Water demand and water balance, Alternative catchment scenarios, The consensus catchment plans, and Implementation plan. Each section has a list of sub-points or bullet points.
- * **Introduction**
 - Objectives and purpose of the CP
 - Policy and legal content
 - * **Description of the catchment**
 - Natural resources
 - People, economic activities, important social aspects LIST
 - Present development and use of water
 - * **SSEA**
 - Strategic social and environmental issues, vulnerabilities and threats in the catchment
 - potential mitigation measure, how should these issues be addressed in formulating the catchment
 - * **Water resource assessment**
 - Rainfall, evaporation, runoff and streamflow
 - Groundwater - occurrence, recharge, characteristics
 - Floods risks, historical occurrence and impacts
 - Drought - historical occurrence and impacts
 - * **Water demand and water balance**
 - Present water use and infrastructure
 - Projections of future water demand
 - Water balance - issues
 - * **Alternative catchment scenarios**
 - Planning objectives
 - Options
 - ^ *modification of existing water infrastructure and water use*
 - ^ *investment in new infrastructure, rehabilitation of existing*
 - ^ *mitigation of adverse impact of development*
 - ^ *catchment protection and water conservation*
 - ^ *Water management options operating rules*
 - System analysis -- simulation of alternative scenarios
 - Multi-criteria evaluation of alternative plans
 - * **The consensus catchment plans**
 - List of identified, confirmed and quantified priority catchment management investments
 - Feasibility reports and costed plans for identified priority investments
 - Environmental and Social projects briefs developed for NEMA standards for identified projects
 - * **Implementation plan**

Figure 7: Indicative outline of the CMP

Purpose

The purpose of this this step is to have an approved catchment management plan together with an implementation plan.

KEY TASKS

- 1) Preparation of the summary draft CMP
- 4) Review and adoption of the draft CMP
- 3) Preparation of the Implementation Plan - phased plan based on priorities, availability of funds and implementation capacity among other things.
- 4) Preparation of the Monitoring and Evaluation Framework - to track progress towards meeting the strategic objectives and realising the Vision.

KEY OUTPUTS

- 1) The Final Catchment Management Plan (agreed upon with stakeholders)
- 2) An Implementation Plan (including phased and sequenced plan of action, roles and responsibilities, required financing, identified changes in legislation, and capacity building plan)
- 3) Monitoring and Evaluation framework



ACKNOWLEDGMENT

These guidelines were prepared by the Directorate of Water Resource Management of the Ministry of Water and Environment with technical support of the World Bank (2014 edition) and Expertise France (2017 edition). Input and guidance was gratefully received from various DWRM staff at the center and in the Water Management Zones, key stakeholders involved in catchment based water resources management activities and many other people and organizations who took part in the consultation process. Financial support for preparation and printing of the documents was provided by the World Bank.

CONTACT INFORMATION

This popular version of the Catchment Management Planning guidelines summarizes the key elements of the CMP guidelines, 2018. For more details regarding steps and tasks, please refer to the main Catchment Management Planning Guidelines.

Directorate of Water Resources Management (DWRM)

Ministry of Water and Environment

Attn: Director

Email: flodongo@gmail.com,

Tel: +256 (0)414320914

Attn: Commissioner

Water Resources Planning and Regulation Department

Email: callist_tindimugaya@yahoo.co.uk

callist.tindimugaya@mwe.go.ug

Tel: +256 (0)414323531

Address: Plot 21/28 Port Bell Road, Luzira, Kampala