THE REPUBLIC OF UGANDA

SIMU-MUYEMBE WETLAND

COMMUNITY BASED WETLAND MANAGEMENT PLAN

2025-2035

MINISTRY OF WATER AND ENVIRONMENT
Wetlands Management Department

With support from

Strengthening Adaptive Capacity and Resilience of Communities in Uganda's Watersheds - Awoja Catchment (SACRiAC) - Project

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APPROVAL

This Management Plan has been prepared and reviewed by the local wetland stakeholders, sub-county leaders of Bukhalu and NabbongoSub-counties, Bulambuli district Local Government leaders, SACRiAC project team and Ministry of Water and Environment. It has therefore been approved for implementation on this 10th day of July 2025.

.....

LC3 Chairperson

BUKHALU SUB-COUNTY

.....

LC3 Chairperson

NABBONGO SUB-COUNTY

.....

District Chairperson

BULAMBULI DISTRICT LOCAL GOVERNMENT

Witnessed by

.....

Chief Administrative Officer

BULAMBULI DISTRICT LOCAL GOVERNMENT

.....

Permanent Secretary

MINISTRY OF WATER AND ENVIRONMENT

ACKNOWLEDGEMENTS

The preparation of Simu Muyembe Community Based Wetland Management plan was widely consultative and community led. Special thanks go to the members of the community from Bukhalu sub-county and Nabbongo sub-county together with their cultural and religious leaders, civil society organizations and political leaders who provided information but also proposed management and conservation strategies contained in this plan. The contribution made will not be in vain and will go a long way in shaping wetland management in the district.

Technical staff from both Bulambuli District local government and the Wetlands Management Department, Ministry of Water and Environment spearheaded the process of preparation of this management plan. The technical expertise and leadership exhibited in this process is highly appreciated. Special appreciation goes to the team that was at the fore front during development of this plan and they include Ministry of Water and Environment team led by Commissioner Wetlands Management Department Mr.David Okurut, Iyango Lucy Anne, Barugahare Vincent, Kairumba Kagaba Carol, Gokaka Geoffrey, Ssebyoto Asadhu, Wafula Dickson, Arinaitwe Topher, Timothy Kiboma, Namuganga Linah Rebecca, George Wamunga and Mutai Emmanuel: Bulambuli District Local Government headed by the District Natural Resources Officer, Mrs. Sarah Hellen Madanda; SACRiAC project team led by the National Project Coordinator, Dr. Tusiime Felly Mugizi and Irene Itenu.

Finally, special thanks also goes to the ***"Strengthening Adaptive Capacity and Resilience of Communities in Uganda's Watersheds - Awoja Catchment (SACRiAC) - Project"*** that fully facilitated this entire process with funding from the Global Environment Facility (GEF) and the African Development Bank. Indeed, this is the only way of ensuring sustainable utilization and conservation of not only wetland resources but also natural resource capital in general.

We believe that the management plan once implemented will contribute to the recovery and sustainable utilization of Simu- Muyembe wetland.

EXECUTIVE SUMMARY

The Simu- Muyembe community-based management plan (CBWMP) is developed under the *"Strengthening Adaptive Capacity and Resilience of Communities in Uganda's Watersheds - Awoja Catchment (SACRiAC) - Project"* with funding from the Global Environment Facility (GEF) and the African Development Bank. It is presumed that the ten-year plan will ensure the sustainable use and conservation of Simu-Muyende wetland so that it can provide benefits to the community.

The development of the plan is in line with the current legal and policy provisions, that is the Constitution of Uganda 1995, Vision 2040, the National Development Plan III, the National Environment Act (2019), The National Policy for the Conservation and Management of Wetland Resources (1995), The National Forestry Policy (2001) and the Forestry and Tree Planting Act (2003) that make provisions for Community participation in the management of the Uganda's natural resources, including wetlands. The CWMP formulation process for Simu-Muyembe Wetland in Bulambuli district is therefore one of many communities based natural resources management initiatives that have been undertaken across the country.

Bulambuli district lies in the Bugisu sub-region of Eastern Uganda along the slopes of Mt.Elgon with a total area of 65,180ha where 34.7% (22,6620ha) is covered by both permanent and seasonal wetlands. These wetlands however have been threatened with degradation resulting from human induced activities such as settlements, pollution, washing bays, cultivation mainly from commercial and small-scale rice growing, sand mining and brick making contributing to 11% (2490ha) degradation of wetlands in the district. Due to lack of proper management strategies in place, coupled with increasing population, the wetlands in the region have experienced unprecedented deterioration both in quality and area coverage and Simu-Muyembe wetland one of the key wetlands has not been spared either.

Simu-Muyenbe wetland section in Bukhalu and Nabbongo sub counties covers an estimated total area of 463.1 hectares and a perimeter of 61.4km. It supports a population of about 35,000 people (Source: National Population and Housing Census 2014 Provision Results (UBOS*)* directly and indirectly. The majority of these people depend on wetland resources and subsistence agriculture (livestock, fish, clay and crop as major activities). The area is characterized by siltation, flooding, prolonged droughts, water scarcity, contaminated water sources, declining fish stock, loss of wetland vegetation and other products, all of which compromise the quality of life of wetland adjacent communities.

Arising from these challenges, Bulambuli district local government with support from Ministry of Water and Environment initiated the community-based wetland management planning process to empower the community using this wetland to plan and propose interventions aimed at sustainable utilization of the resources. The development of this management plan started with literature review of socio-economic and ecological information about the area. This was followed by collection of primary data, field transect walks, actual development of the plan together with the relevant stakeholders and the community. This Management Plan provides opportunities to generate wealth and promote conservation of Simu-Muyembe wetland in the most equitable manner. The proposals in the plan include a range of strategic actions and specific activities that will strengthen structures for and regulate the use of natural resources, create knowledge and information, support livelihoods opportunities that offset over use of natural resources as well as increase biodiversity stock.

The management plan was formulated with an ambitious vision of: "*A well protected, conserved, restored Simu-Muyembe wetland capable of performing its ecological, socio-economic functions for the benefits of Bukhalu and Nabbongo community and the entire district"*.

In order to realize this vision, specific objectives were identified including;

- To improve livelihoods of wetland dependent communities through promotion of alternative income generating activities (IGAs)
- To set up and strengthen institutional capacity of wetland management at sub county level for enhanced monitoring, stewardship and enforcement of wetland regulations
- To restore the integrity of Simu-Muyembe wetland for the continued provision of ecological and hydrological functions.
- To create awareness among the stakeholders on the sustainable management of Simu-Muyembe wetland

For the successful implementation of the above stated objectives, a number of costed actions were proposed, a monitoring and evaluation plan and implementation structures defining specific stakeholder roles (MWE, WMD, DLG, CSOs and Community) were developed. Also, community implementation structures were formed with an implementation committee drawing representatives from all key resource users and two sub counties of Bukhalu and Nabbongo.

The cost of implementing the plan over the next ten years is estimated at one billion, three hundred and fifty-seven million, one hundred and ninety-seven thousand shillings (1,357,197,000). Financial resources required to implement this management plan will be mobilized through collaborative partnership between Central Government, Local government and development partners. The support from Government of Uganda will be channeled through the Environment and Natural Resources Conditional Grant and it is important that some of the identified interventions are integrated into the District Development Plan (DDP) for synchronized implementation along with other existing government programs.

LIST OF ACRONYMS

CMP- Catchment Management Plan

CBWMP – Community Based Wetlands Management Plan

CBOs-Community Based Organisation

CSO- Civil Society Organisation

GIS – Geographical Information Systems

GPS - Global Positioning Systems

FGD - Focus Group Discussion

M&E – Monitoring and evaluation

MoU- Memorandum of Understanding

MWE – Ministry of water and environment

NGO – Non-Government Organization

Ramsar – Ramsar Convention (Convention on wetlands)

RUGs – Resource user groups

UBOS – Uganda Bureau of Statistics

WMD – Wetlands Management Department

WMZ - Water Management Zone

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CHAPTER ONE: INTRODUCTION

1.1 Background

Wetlands are defined under the National Policy for the Conservation and Management of wetlands resources (1995), as areas where plants and animals have become adapted to temporary or permanent flooding by saline, blackish or fresh water. They include areas of seasonally flooded grasslands, swamp forest, permanently flooded papyrus, grass swamp and upland bogs. This is a domesticated definition adopted from the Ramsar definition of wetlands.

Wetlands constitute one of the most sensitive, biologically productive and vital ecosystems in the world. They cover 5% of the earth's ice-free land surface (Maltby, 1988). In East Africa, Uganda has the largest percentage of wetland coverage. For example, Kenya has 4% of the total land cover, Tanzania has 7% (Maltby, 1988; Bakema, 2000); and Uganda currently has about 9.3% as intact wetland cover as revealed by Wetland mapping carried out in 2021. This is however much lower than the 15.6% revealed from the data set of 1994.

The role of wetlands in sustaining livelihoods and contributing to the overall environment health cannot be over emphasized. Some of the key highlights about the values of wetlands in Uganda include; National income: - Wetlands contribute over US$1 billion per year; Food security and livelihood support: - 80% of the population directly rely on wetland resources; Fresh water supply: - 5 million people in rural areas get their daily freshwater supply from wetlands valued at US$25 million per year; Carbon stores- carbon stock estimation of 192 million tons; Hydrological services- Water purification, storage and distribution in space and time; and habitats for biodiversity-threatened, endemic, rare species.

However, given the many uses, there are conflicting interests that have resulted into increased loss of wetland cover and aggravated the impacts of climate change. Based on the increasing pressure on wetland resources in the country, the government of Uganda through the Wetlands Management Department (WMD) adopted community-based wetland resource management as one of the most effective and sustainable methods to promote the conservation of wetlands. Management plans address the need to rationalize and streamline the utilization of wetland resources and promote the wise use concept across a wide range of stakeholders involved in the management of wetland resources. Community wetland management plans (CWMP) are developed within the context of the Ramsar Convention "wise use" concept, which emphasizes the maintenance of the integrity of the wetland, provision of benefits to the community, and encourages the sustainable use of resources for present and future generations.

The National policy for conservation and management of wetland resources (1995) recommends for the promotion of optimal and sustainable use of wetland resources. One major tool for promoting the sustainable use of wetlands is through management planning, developed with the active participation and consensus of the wetland resource users, traditional and local council leaders. This is further strengthened through the Local Government Act (1997) which devolved the management of wetlands to local government and resource users themselves. It is therefore the responsibility of the communities to plan for and manage wetlands in their respective areas.

It is on the above basis that the community-based wetland management plan for Simu-Muyembe was developed. This management plan was developed through a highly participatory process and presents a 10-year direction and vision for Simu-Muyembe wetland. The management plan provides for the local community participation and involvement in the management of Simu-Muyembe wetland in Bukhalu and Nabbongo Sub County, which is highly threatened by degradation. It also helps in community mobilization and empowerment to actively participate in the management affairs of the wetland and its catchments. The management plan therefore suggests actions intended at decreasing conflict between uses and users that would otherwise lead to the degradation and reduction in the integrity of the wetland.

1.2 Rationale for participatory management planning

A management plan refers to a set of agreed principles to guide sustainable utilization of natural resources including wetlands. The purpose of the plan is to prevent further deterioration, protect and enhance the health of all wetland resources and by doing so, sustain the natural ecosystems that depend on them. In so doing, they will be optimization of use of wetland resources but also reduced resource conflict and problems in accessing the wetland resources.

Local communities as stewards of wetlands resources and direct beneficiaries to the same are at the forefront of the planning process. It is also appreciated that the local communities have a lot of information about the wetland resources they utilize, including problems associated with the resources, the historical perspectives, cultural values/myths associated with the resources and their use.

Based on this background, the approach used involves facilitating the local communities to share the issues related to resource use, problems and working out suggested solutions to the optimal use of resource. A participatory approach is necessary to have local communities contribute to the management plan formulation and implementation.

1.3 Structure of the plan

The plan is divided into three parts as follows;

- **Part I:** - Highlights the policy and legal provisions for wetland management and gives a description (biophysical, chemical and socio-economic environment) of the planning area.
- **Part II:** Describes the management planning process and planning considerations. It is the core for community participation and as such it highlights the outcomes of reconnaissance meetings, stakeholder and wetland resource analyses.
- **Part III:** Spells out the management planning objectives and actions, based on site-specific conflicts and problems analyses around Simu-Muyembe wetland. This section brings out a shared vision as envisaged by the community members and implementation arrangements.
- **Part IV:** describes the implementation arrangement and also the monitoring and evaluation of the framework.

PART I: GENERAL DESCRIPTION

CHAPTER 2: LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK FOR WETLAND MANAGEMENT IN UGANDA

2.1 Introduction

This chapter summarizes the various policies, legal and institutional frameworks relevant to wetland management in Uganda and highlights the key international and regional arrangements related to wetland management.

2.2 Legal and policy frameworks

2.2.1. International policy frameworks

The international policy frameworks on wetlands provide guidance on sustainable management of wetlands, governance and structures for management of wetlands and take into consideration sustainability as well as benefit sharing to the citizens. Key international frameworks are listed below.

- **The Sustainable Development Goals (2016-2030)**

The Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. Key Goals that speak to wetland conservation include; Goal 6 which is to ensure availability and sustainable management of water and sanitation for all particularly Target 6.6 which aims at protecting and restoring water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes; Goal 13 of the SDGs aims to combat climate change and is therefore pertinent to this management plan, which has mainstreamed climate change; Goal 15 which is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt or reverse land degradation, and stop biodiversity loss. This goal has stringent targets of significantly reducing soil, water, land, wetland, and forest degradation by 2020 and is therefore relevant to this management plan.

- **The Ramsar Convention, 1971**

Uganda is a signatory to the Ramsar convention, whose mission 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 ratified the convention in July 1988 and has since designated 12 sites as Wetlands of International Importance, with a total surface area of 455,303 hectares. In line with the Ramsar convention, the government of Uganda developed a wetland policy in 1995 and wetland sector strategic plans that set strategies for wetland use.

The Convention provides a framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Contracting parties are bound by three pillars of the convention, that is: to work towards the wise use of all their wetlands through national land use planning, appropriate policies and laws, management actions and public education; to designate suitable wetlands for the List of Wetlands of International Importance (“Ramsar List”) and ensure their effective management; and to cooperate internationally concerning trans-boundary wetlands, shared wetland systems, shared species and development projects that may affect wetlands. Parties to the Convention also commit to specific actions regarding formulation and implementation of national plans to promote conservation of listed wetlands and the wise use of wetlands in their territory; research and exchange of data and publications regarding wetlands and their flora and fauna; and training of personnel in wetlands research and management.

The Convention on Biological Diversity, 1992

The Convention on Biological Diversity (CBD) is the legally binding agreement on the use and conservation of biological diversity. Its objectives are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources. Wetlands are therefore a critical ecosystem under the Convention of biological diversity wetlands since they are habitats to some unique, threatened, endemic and diverse species. The CBD compels its members to develop national strategies, plans or programs for conservation and sustainable use of biological diversity, and to integrate the conservation and sustainable use of biological diversity into sectoral or cross-sectoral plans, programs and policies.

United Nations Convention to Combat Desertification (UNCCD), 1994

UNCCD is a Convention to combat desertification and mitigate the effects of drought through national action programs that incorporate long-term strategies supported by international cooperation and partnership arrangements. Sustainable management of Simu-Muyembe wetland will mitigate effects of drought that may be brought about by degradation of the resource. Prolonged droughts is already a key problem identified by the Simu-Muyembe stakeholders.

United Nations Framework Convention on Climate Change (UNFCCC), 1992

UNFCCC is an international environmental treaty negotiated at the Earth Summit in Rio de Janeiro in 1992, then entered into action on 21 March 1994. The UNFCCC objective is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". The framework outlines how specific international treaties (called "protocols" or "Agreements") may be negotiated to set binding limits on greenhouse gases. Once restored, wetlands, including Simu-Muyembe, will play significant roles in micro-climate enhancements but also in storing carbon and reducing further emissions.

The Paris Agreement, 2016

The Paris agreement is a legally binding international treaty on climate change adopted at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. Its overarching goal is to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue efforts "to limit the temperature increase to 1.5°C above pre-industrial levels." Simu-Muyembe community-based wetland management plan targets to address wetlands degradation that can cause increased greenhouse gas emissions and contribute to global warming.

2.2.2. Regional policy frameworks

The East African Community (EAC) Treaty, 1999

Uganda is part of the East African community and is bound by the EAC treaty. The treaty establishing the EAC recognizes the importance of natural resources to the economic development of the region. Article 5 of the treaty links the achievement of economic development to "the promotion of sustainable utilization of the natural resources of the Partner States and the taking of measures that would effectively protect the natural environment of the Partner States". Furthermore, Chapter 19 of the treaty provides for cooperation in environment and natural resource management to realize objectives that include ensuring "sustainable utilization of natural resources like lakes, wetlands, forests and other aquatic and terrestrial ecosystems".

- **East African Community Protocol on Environment and Natural Resource Management, 1999**

The EAC developed a protocol on environment and natural resource management to further strengthen cooperation and management of environment resources in the region. Article 14 of the protocol spells out sustainable management and wise use of wetland resources, and commits the Partner States to develop, harmonize and adopt common policies, laws and strategies for the purpose.

2.2.3. National legal frameworks

All Ugandans have a responsibility for wetland conservation and management, but the government takes lead in ensuring sustainable management by enacting laws and policies to regulate use, management and benefit sharing. Uganda is a party to the Ramsar convention on wetlands and has an obligation to conserve wetlands and use them sustainably. Consequently, in order to manage wetlands and other natural resources sustainably, the government has established legal and policy frameworks.

2.2.3.1 National Laws

- **Constitution of the Republic of Uganda, 1995**

Objective Xiii, Article 237(2) (b) of the Constitution of the republic of Uganda provides for the state to protect important natural resources, including land, water, wetlands, minerals, oil, fauna and flora from degradation. As per the constitution, Government or local government shall continue to hold in trust natural lakes, rivers, wetlands, forest reserves, game reserves, national parks and any land to be reserved for ecological and touristic purposes for the common good of all its citizens. The Constitution has provisions for enhancing conservation and management of the environment and natural resources. The Constitution also enshrines the constitutional right of all Ugandans to a clean and healthy environment in article 39 (The Republic of Uganda Constitution, 1995).

- **National Environment Act 2019**

This is the principal law that regulates management of environment including wetlands in the country. The Law under sections 54 provides for the management of wetlands and Section 55 provides Restrictions on the use of wetlands. The law highlights the following principles; (a)wetland resources shall be utilized in a sustainable manner compatible with the continued presence of wetlands and their hydrological functions and service; (b)an environmental and social impact assessment shall be carried out for all activities that are likely to have an adverse impact on wetlands; (c)special measures are essential for the protection of wetlands of international, national and local importance as ecological systems and habitats for fauna and flora species, and for cultural and aesthetic purposes, as well as for their hydrological functions; and (d)wise use of wetlands shall be applied in national and local approaches to the management of wetland resources through awareness campaigns, dissemination of information and environmental literacy.

- **The Local Government Act (1997)**

Uganda operates under a decentralized system of governance and the Local Government Act decentralizes the powers and mandate over services and activities, which include the management of wetlands from central government to the district level. Under decentralization, districts are responsible for managing the wetlands within their jurisdiction. Local Governments are required to identify critical wetland areas and take appropriate actions for conservation and management; carry out wetland assessment and co-ordinate wetland management, including enforcement of legislation relevant to wetland management.

- **The Land Act Cap. 227**

Provides that Government or a local government shall not lease out or otherwise alienate any natural resource referred to in this section". This implies that it would be illegal to lease out a wetland for ownership or development but would be legally appropriate to plan for its sustainable management. Section 44 emphasizes the need to manage and utilize the land in accordance with national Environment Act, National Forestry and Tree Planting act, Mining Act, water Act and any other relevant law for purposes of ensuring rational development.

- **Water Act, 1997**

The Water Act of 1997 provides for the use, protection and management of water resources and drinking water supply. Wetland is a critical component in wetlands and therefore management of water resources is very critical. The Act provides for sustainable use of water resources and in so doing allowing for wetlands to thrive.

2.2.3.2. National policy framework

- **Vision 2040**

Vision 2040 aims to transform Uganda from a predominantly peasant and low-income country to a competitive upper-middle income country. Vision 2040 is conceptualized around strengthening the fundamentals of the economy to harness the abundant opportunities around the country. The design and implementation of the Vision emphasizes sustainable development through preservation of natural resources such as forests and wetlands. It further emphasizes the restoration of degraded wetlands, hill tops, rangelands and other fragile ecosystems where wetlands target is 13% and restoration would be achieved through the implementation of catchment –based systems, gazetting of vital wetlands for increased protection and use, and monitoring and inspecting restoration of ecosystems.

- **National development plan III**

Under the Natural Resources, Environment, Climate Change, Land and Water Management Programme, the aim is to stop, reduce and reverse environmental degradation and the adverse effects of climate change as well as improve utilization of natural resources for sustainable economic growth and livelihood security. Key expected results include improved land use and management; increasing land area covered under forests and wetlands, increasing compliance of water permit holders with permit conditions and enhancing the accuracy of meteorological information. Wetland coverage is anticipated to increase from 8.9 percent to 9.57 percent. The National Development Plan is reviewed every five years and accordingly a successor plan devolved.

- **National Policy for the Conservation and Management of Wetland Resources, 1995**

The National Policy for the Conservation and Management of Wetland Resources underpins wetland protection and provides for wise use and sustainable management of wetlands and wetland resources plus equitable distribution of benefits accrued from wetlands. It also calls for the application of Environment Impact Assessment (EIA) procedures on all development projects in wetlands to safeguard the integrity of the ecosystem. The policy has five goals: to establish the principles by which wetland resources can be optimally used now and in the future; to end practices that reduce wetland productivity; to maintain the biological diversity of natural or semi-natural wetlands; to maintain wetland functions and values; to integrate wetland concerns into the planning and decision making of other sectors and developing wetland specific management plans.

- **National Environment Management policy, 1994**

The policy empowers local governments and communities to protect and properly manage natural resources in their areas of jurisdiction for the betterment of society. The National Environment Management Policy for Uganda emphasizes sustainable social and economic development that enhances environmental quality and resource productivity. This emphasis sets the benchmark for sustainability in which the needs of present generations are met without compromising the ability of future generations to meet their own needs.

- **Climate Change Policy, 2015**

The goal of the Climate Change policy is to ensure a harmonized and coordinated approach towards a climate-resilient and low-carbon path for sustainable development in Uganda. The objective of the policy is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures, while promoting sustainable development and a green economy. This management plan has integrated climate change by recognizing that climate change is a key management issue in the Simu-Muyembe wetland.

- **National Soils Policy for Uganda, 2000**

The National soils policy provides guiding principles to land users for soil conservation. The Elgon area is one of the areas that has over time experienced soil and water conservation challenges as a result of the terrain. Soil degradation and run off has resulted in reduced productivity in the catchment and increased the encroachment on wetlands and Simu- Muyembe is one of those affected.

2.2.3.3. Regulations

- **National Environment (Wetlands, River Banks & Lake Shores Management) Regulations, 2000**

The regulations provide guidance on the conservation and wise use of wetlands and their resources in Uganda It spells out the principles for wetland management, the regulated activities in wetlands, the need to undertake wetland inventories and also guides on the protection categories of wetlands that is, fully protected wetland; partially protected wetland; and wetland subject to conservation by the local community. The regulation further stipulate that wetland resources must be utilized in a sustainable manner compatible with wetlands and their hydrological functions and service. These regulations are relevant to implement the Simu- Muyembe management plan and will guide all developments that will be executed in the area.

- **2.3. Institutional framework**

Whereas there are, many institutions that handle aspects of wetlands given the vast nature of resources derived from wetlands such as Agriculture, Tourism, this plan will restrict itself to institutions that are directly charged with management of wetlands.

- **Ministry of Water and Environment**

The Ministry of Water and Environment (MWE) is responsible for sound management, rational utilization and conservation of water and environment resources in the Uganda. Wetlands is one of the key environment resources managed by the Ministry. MWE and constituent departments of Forestry, wetlands, water, climate change is charged with formulation of policies and laws and providing guidance and technical backstopping on management of the resources.

- **Ministry of Finance, Planning and Economic Development**

Ministry of Finance is charged with resource mobilization and allocation for sustainable management of natural resources. Most importantly, is to ensure efficient allocation and utilization of public funds, monitor, and account for the utilization of public resources.

The National Environment Management Authority (NEMA)

The National Environment Management Authority (NEMA), is a semi-autonomous body under the Ministry of Water and Environment and is the principal agency in Uganda for overseeing the management of the environment and coordinates, monitors and supervises all activities in the environment sector. It is a regulator for environmental activities including activities in wetlands.

Wetlands Management Department (WMD)

The mandate of the Wetlands Management Department (WMD) (under the Ministry of Water and Environment) is to promote the conservation of Uganda's wetlands in order to sustain their ecological and socio-economic functions for the present and future well-being of the people. As such, the WMD exercises stewardship over the wetlands in Uganda. It has the delegated responsibility and authority to uphold the wetland related clauses in the Constitution (amended 2005) and implement the National Wetlands Policy (1995). WMD is responsible for setting standards, formulating policy and providing technical support for wetland management.

District Local Governments

The Local Governments have mandate of managing wetlands within their jurisdictions as provided for by the Local Government Act. Local Governments are required to identify critical wetland areas and take appropriate actions for conservation and management, including enforcement of legislation relevant to wetland management. Districts perform this function through the Environment Committees and technical departments.

Lower local governments

At lower local government level, the Sub- County and Parish administrative units ensure that wetlands are sustainably used. They are required to plan and implement management alternatives and actions for wetlands conservation and wise use of wetland resources. They work closely with the local communities as the primary resource users and wetland watchdogs to generate issues that inform the management plan.

Local community resource users and stakeholders

The local communities are the primary resource users and therefore wetland watchdogs. This responsibility is exercised through local councils and administrative components like, the Parish and Sub County units, which are required to plan and implement management alternatives and actions for wetlands conservation and wise use of wetland resources. The resource users are the architect of the issues generated in formulating the management plan

CHAPTER THREE: DESCRIPTION OF SIMU- MUYEMBE WETLAND

3.1. Introduction

This chapter highlights the biophysical aspects of Simu-Muyembe wetland and adjacent environment. It describes the socio-economic and cultural parameters as well as geographical extent of the planning area.

3.2 Biophysical characteristics of Simu-Muyembe Wetland

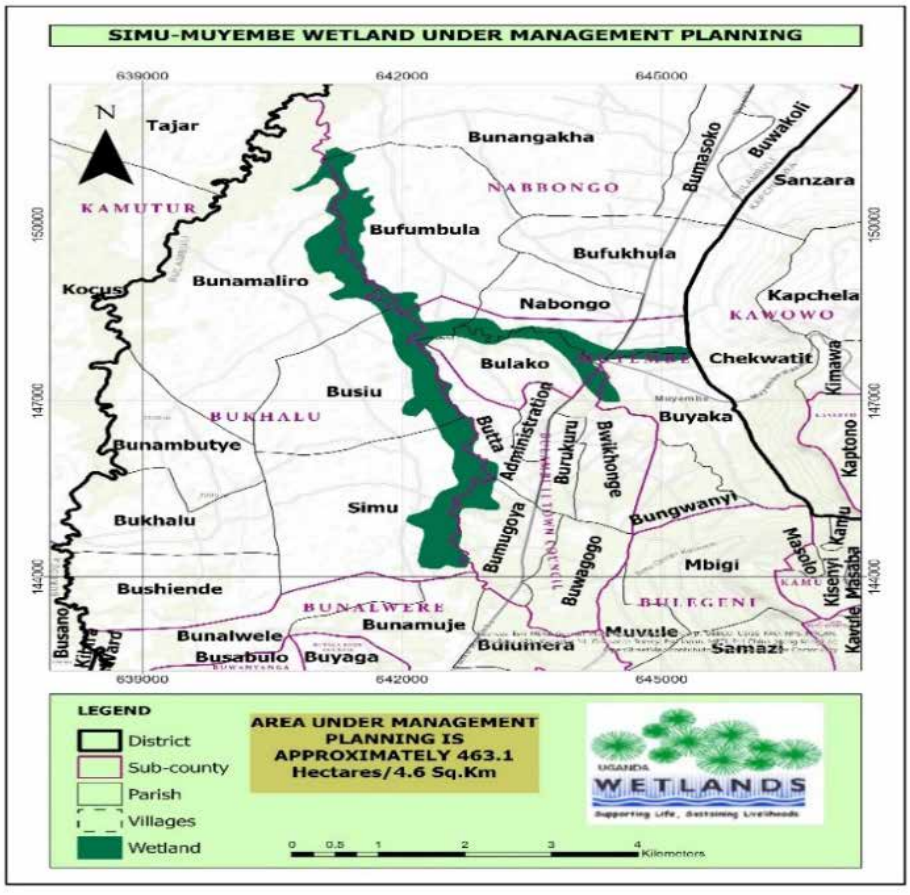
3.3. Location

Simu-Muyembe wetland is located in Bulambuli District in Eastern region of Uganda. The wetland traverses the parishes of Nabbongo, Bunangaka and Bufumbula in Nabbongo sub-county and Simu, Busiu, Bunamaliro, Bushiende, Bukhalu and Bunambutye in Bukhalu sub county forming the planning area of approximately 463.1 hectares (4.631 Km2) and a perimeter of 61.4Km.

It is a permanent wetland that is part of the greater Simu River located within the Awoja catchment and Lake Kyoga drainage basin. It originates from Mountain Elgon in Bumasobo parish in Bulambuli district. The river then flows downwards crossing the sub-counties of Buluganya, Nabiwutulu, Kikobero, Sisiyi, Bulegeni, Bunalwere, Bulambuli Sub county, Muyembe draining into River Sironko in Bukhalu and Nabbongo sub-counties.

Unlike other sub-counties where it traverses just as a plain river, in Bukhalu and Nabbongo sub-counties, River Simu forms a big permanent wetland as it drains into River Sironko, which is called the Simu-Muyembe wetland arising out of its connection with another River Muyembe coming from the Muyembe sub-county direction thus forming our management planning area.

Figure 1: Map showing the extent of Simu-Muyembe wetland in Bukhalu and Nabbongo sub-county



3.2.1 Topography

For the purposes of this report, the geographical coordinates of Bulambuli are 1.167 deg latitude, 34.383 deg longitude, and 5,453ft elevation. (weatherspark, 2024). Bulambuli's topography is largely defined by the slopes of Mount Elgon, which descend sharply into lowland areas. The district features steep gradients, particularly in the northern and eastern parts, making it prone to landslides and soil erosion during heavy rains. This rugged terrain influences river flow patterns, creating fast-flowing rivers and streams that contribute to the larger Nile Basin system. In the flatter, more arable lowlands, the topography is less severe, allowing for agriculture and settlement. This varied topography presents both opportunities and risks for the district's inhabitants (NEMA, 2020; MWE, 2019).

3.2.2 Geology and Soils

Bulambuli is dominated by Gneiss-Granulite complex with some quaternary sediments. Bulambuli District lies on the volcanic soils of Mount Elgon, which are known for their fertility. These soils, particularly the Andosols and Nitisols, are rich in minerals such as potassium and magnesium, making them ideal for agriculture, especially for growing crops like coffee, bananas, and maize. However, these soils are also prone to erosion due to the steep terrain and heavy rainfall. The district's underlying geology consists primarily of volcanic rock formations from Mount Elgon's past eruptions, which contribute to soil fertility but present challenges for groundwater access in some areas (Wanyama et al., 2018; MWE, 2019).

3.2.3 Hydrology

Bulambuli District in Uganda is located in the Eastern region, near Mount Elgon, and is heavily influenced by the region's unique hydrological patterns. Its mountainous terrain, significant rainfall, and the rivers that feed into larger water systems within Uganda shape the district's hydrology. Several rivers originate from the Mount Elgon area, flowing through Bulambuli, including the Sironko River, which is vital for both agriculture and domestic use. These rivers are part of the greater Nile Basin, eventually feeding into Lake Kyoga and, ultimately, the Nile River. The presence of multiple rivers makes Bulambuli an important catchment area, contributing to Uganda's water resources (MWE, 2018).

Bulambuli's wetlands play a crucial role in regulating the district's hydrology. These wetlands act as natural reservoirs, absorbing excess rainwater and gradually releasing it, which helps mitigate flooding during heavy rains. However, the district has faced challenges from wetland encroachment and deforestation, leading to increased flooding and erosion, particularly along riverbanks and low-lying areas (NEMA, 2020; Ministry of Water and Environment, 2019). The high rainfall and porous volcanic soils of the region contribute to significant groundwater recharge. Communities in Bulambuli rely on boreholes and shallow wells for drinking water, especially in drier seasons. Despite the abundant surface water, access to clean groundwater remains essential due to seasonal fluctuations in river levels (Kizza et al., 2021).

Human activities, including agriculture, deforestation, and settlement expansion, exert considerable pressure on Bulambuli's hydrological system. Forest cover reduction on Mount Elgon, especially in areas surrounding the rivers, has increased runoff, erosion, and sedimentation in water bodies, posing a risk to water quality and availability downstream (MWE, 2019).

3.2.4. Climate

3.2. 4.1. Temperature

Temperatures in Bulambuli are moderate due to the district's elevation, which ranges between 1,200 and 2,500 meters above sea level. The average annual temperature varies from 15°C to 25°C, with minimal fluctuations throughout the year. Cooler temperatures generally prevail at higher altitudes near Mount Elgon, while the lower regions experience warmer conditions. Seasonal variations are not extreme, but temperatures tend to be slightly lower during the rainy seasons and slightly higher during the dry season (UBOS, 2019; NEMA, 2020).

3.2.4.2. Rainfall

Bulambuli experiences substantial rainfall due to its proximity to Mount Elgon. The region has a bimodal rainfall pattern with two rainy seasons, typically from March to May and September to November, averaging about 1,500-2,200 mm per year. This high rainfall contributes to a variety of hydrological processes, including surface runoff, infiltration, and groundwater recharge (NEMA, 2020; MWE, 2018).

3.2.4.3. Humidity

Bulambuli District experiences relatively high humidity levels throughout the year, a result of its high-altitude location near Mount Elgon and abundant rainfall. Average relative humidity typically ranges between 70-90%, with the highest levels observed during the rainy seasons in March-May and September-November (NEMA, 2020). The combination of moist air and dense vegetation helps maintain consistent humidity levels, creating a suitable environment for agriculture but also increasing susceptibility to fungal diseases in crops (MWE, 2018).

3.3 Ecological features

The ecological features of Simu-Muyembe wetland system are described in form of flora, fauna and the information is based on the rapid assessment that was undertaken plus some literature review.

3.3.1. Flora

Simu-Muyembe wetland is mainly degraded but with patches of Cyperus papyrus, which can reach up to a width of 1km, swamp forests, natural grasslands, reeds, sedges, bushland and palms. Other species include Cyperus Articulata, Echinocloa, Phoenix reclanata, Mimosa pigra, Ambatch, acacia sp.

Figure 2: Intact patches of Simu-Muyembe wetland with Cyperus articulates L. (Jointed flat sedge)

The wetland is highland degraded and has lost most of its original flora. What is evident in most sections is gardens consisting of Yams, bananas, eucalyptus, potatoes cultivation of vegetables, maize, beans

Figure 3: Degraded sections of Simu-Muyembe wetland

Maize and eucalyptus in the wetland

Rice gardens in the wetland

Beans grown along Muyembe wetland

3.3.2. Fauna

Given the level of disturbance in the wetland, there was hardly any typical wetland Fauna was observed during the assessment. Interactions with the community indicated that the key animal species in the Simu- Muyembe wetland included catfish, lungfish, butterflies and birds such as the Grey Crowned Crested cranes.

3.4. Socio-economic & cultural situation

3.4.1. Population characteristics

From the Uganda National Population and Housing Census conducted in 2014, Bulambuli District had a total population of 173,139 people. As per the census, Bulambuli District had approximately 34,253 households in 2014, with an average household size of 5.1 persons. Therefore from the 2014 UBOS census data, Simu-Muyembe wetland under management planning serves approximately 3,933 House Holds, 9,565 Males, 9,7333 Females and a in general a total population of 19,298 people.

Table 1: Population in each sub-county (male and female)

Sub- county	No of HHs	Males	Females	Total Population
Bukhalu	1,711	4,051	4,135	8,186
Nabbongo	2,222	5,514	5,598	11,112
Total Target population	3,933	9,565	9,733	19,298

3.4.2. Land use

Mixed farming is the main economic activity in Bulambuli district. Activities include cultivation of rice, coffee, maize, beans, bananas, cassava, sweet potatoes, vegetables such as cabbages, tomatoes and fruits including oranges and mangoes. Fishing in the area is still being done rudimentary using fishnets and baskets to catch fish from the swamps and flood plains during the rainy season. Livestock farming particularly cattle, sheep and goats is another key economic activity in this part of the area.

Figure 4: Other key activities in Simu-Muyembe wetland such as livestock grazing and fishing

The wetland provides direct uses to the population such as provision of water for domestic use, water for livestock, fishing, grazing area, provision of papyrus and palm leaves for making crafts, fuel wood, herbs and extraction of clay and sand. It also offers other indirect uses that range from water storage and releases, water purification, habitat for fish, sediment and nutrient trapping, regulation of climate and flood control.

This places Simu-Muyembe wetland at the center of production for both crop and animal husbandly, making it one of the vital wetlands in the district. About 98% of the farmers use traditional farming methods and techniques. The produce finds ready market in Mbale, which is about 30km away. These activities contribute to the massive degradation of the Simu-Muyembe wetland accounting for 397.3 Hectares (85.8%) which are degraded and 65.3 Hectares (14.2%) as still intact showing dire need for this management plan implementation for a better Simu-Muyembe wetland. In addition,

subsistence agriculture is the dominat land use in Simu Muyembe wetland covering 85.8% followed by woodlands which include trees and shrubs at 8% and lastly Bushlands that include bushes and thickets at 6.2%. This shows how severe the situation is in Simu-Muyembe wetland. Eucalyptus, rice, maize, sugar canes and yam growing have replaced the wetland vegetation along the river buffer zone.

Figure 5: Maps showing status and Land Use and Land cover of Simu-Muyembe wetland

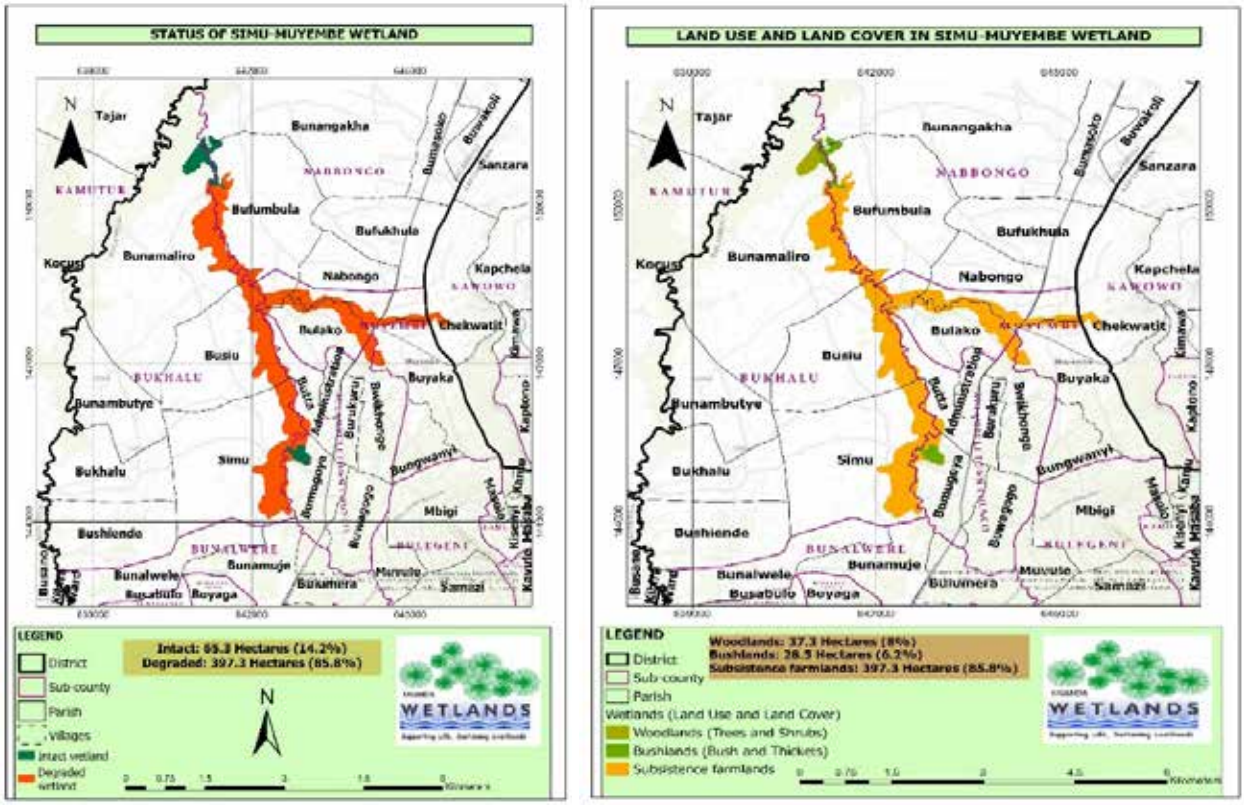


Figure 6: The management planning team-undertaking reconnaissance of Simu-Muyembe wetland

PART II: MANAGEMENT PLANNING PROCESS

CHAPTER FOUR: MANAGEMENT PLANNING PROCESS AND PLANNING CONSIDERATIONS

4.1. Introduction

This chapter highlights the major events through the planning process for Simu- Muyembe wetland and is guided by the Ramsar handbook and the Uganda wetland management-planning manual. A situational analysis in which major community based participatory appraisal techniques are employed to make the local community appreciate the concept of bottom-up approach to natural resource planning and management in undertaken. Hence, tools such as stakeholder matrix, resource mapping, transect walk, economic valuation, seasonal calendar and historical analysis among others are explicitly elaborated in this chapter and will help define what management interventions are required in chapter four.

4.2. Purpose of the management plan

Management planning for Simu-Muyembe wetland was undertaken to promote sustainable management of the wetland through facilitating wetland restoration and wise use of wetland resources therein. Main reasons for development of the management include;

- Defining the objectives of management and developing actions and strategies for effective and sustainable management of the wetland
- Identifying issues that are affecting the wise use of the wetland system and the conflicting land use practices and thereby propose mitigation measures;
- Developing indicators for monitoring the wise use of the wetland
- Developing a budget for mobilization of resources for implementation of the identified actions.
- Raising awareness about the importance of the wetland
- Promoting community and stakeholder participation in resource management and ownership of the wetland resources to ensure sustainability.

4.3 Target area

The management plan targets Simu-Muyembe wetland located in Nabbongo, Bunangaka and Bufumbula parishes in Nabbongo Sub- County and Simu, Busiu, Bunamaliro, Bushiende, Bukhalu and Bunambutye parishes in Bukhalu sub county, Bulambuli District, Eastern Uganda.

4.4 Wetland management planning considerations

The planning process took into account several aspects, including; the ecological and socio-economic and socio-cultural values of the wetland, threats to the wetland (for example, poor land management, pressure on the wetland resources, poor water quality, low awareness levels among others), the conditions in the adjacent catchment, and its resources. Participation of all stakeholders at all levels was prioritized in order to ensure ownership of the management plan.

4.5 Planning process

The preparation and development of Simu-Muyembe conducted in a participatory approach manner with the participation of stakeholders from Ministry of Water and Environment, Bulambuli District, Sub-County, religious and cultural leaders plus community members as per the attached list Annex I).

The planning process involved the following steps:

- Preparatory phase that involved desk review, planning and formulation of the technical team
- Awareness creation and stakeholder consultations at all levels in Bulambuli
- Reconnaissance of the wetland and delineation of the planning area
- Mobilization and sensitization of communities to participate in the planning process
- Engagement meetings with the planning team
- Preparation of Community based wetland management plan for Simu-Muyembe
- Review, validation, approval and launch of the CbWMP.

4.6 Reconnaissance meeting

The first meeting was held on 9th July 2024 at Bulambuli district headquarters with the main objective of the meeting being to sensitize the leaders and local communities on the need for community participation and empowerment in managing Simu-Muyembe wetland. Both political and technical officials of the district, sub county and community representatives attended the meeting. The meeting was used for Identifying key stakeholders, selecting the planning team members and agreeing on the target planning area for Simu-Muyembe wetland and its catchment in the district.

The meeting agreed on the following;

- Simu-Muyembe wetland in Bukhalu and Nabbongo Sub- County, Bulambuli district would form the planning area, covering 62 villages.
- The planning team should have representatives from farmers, local leaders, landlords of areas adjacent to the wetland, tenants (farmers who hire from landlords for use), fishermen, grazers, settlers, herbalists, craftsmen, brick makers, sand miners, water collectors and government.
- 82 stakeholders constituted the Planning Team comprising of Community District Officers (District and sub county officers), District Natural Resources Officer, District Environment Officer, District Forestry Officer, Physical Planner, District and Production Officer, District and Sub county Agricultural Officers, Veterinary and Fisheries Officers, Sub county administration staff (Town clerk, GISO, Police,), Political leaders including LCI-V Chairperson and councilors at sub county and district levels, Religious leaders, Resource user groups, Cultural leaders like Bamasaba kingdom representative and Private sector representatives

Table 2: Agreed planning area of Simu-Muyembe wetland

Sub county	Parish	Village
Nabbongo	Nabbongo	Nabbongo, Butsesoli, Buwala, Bukhamunyu
	Bunangaka	Bungokho, Bushyangi, Bukigai, Bumwalye, Bunangaka, Bunangwakha, Bunamunane
	Bufumbura	Mutoora, Bukwewa, Busangai, Buwasheba Bumalenya, Buwalusati, Buta, Wanga, Bufumbura Buwatuwa, Bamutsomi, Bukhinda
Bukhalu	Simu	Buwesonga A, B, Simu A, B, Lyambogo A, B Sukuya, Burukulu A, B
	Busiu	Busiu A, B, Buwakhanywinyi A, B, Bumulala A
	Bunamaliro	Bubuyera B, Buwangotta, Bunyintsa, Bufukula, Bunywaka
	Bushiende	Bwikhonge, Bunamara, Bukhaterema, Bushiende, Bukhaboyo
	Bukhalu	Bukhalu A, B, Bukatsa, Bumasikye A.B, Bulusambu A, B
	Bunambutye	Bushibalayi, Bunambutye A, B, Bulanga A, B, C, Bupoto

Figure 7: RDC Bulambuli district addressing the participants during reconnaissance meeting

4.7 Stakeholder Analysis

Wetlands provide a variety of services and products to varied groups and individuals, validating the term commonly used as “one resource, many interests”. Based on this analogy, it was imperative to identify key stakeholders of Simu-Muyembe wetland and explicitly define their interests, importance and influence and rank them accordingly to ascertain the levels of wetland utilization among different categories of resource users.

4.7.1 Stakeholder mapping

The main stakeholders identified during this process included crop farmers, cattle keepers, fishermen, crafts makers, landlords, brick makers, herbalists, water collectors, sand miners, hunters, transporters, religious ritualists, cultural ritualists, local leaders, MWE, NEMA, Bulambuli DLG, and CSOs represented by nature. The identified stakeholders largely belong to two categories that is, primary stakeholders and Secondary stakeholders. The Primary stakeholders are those community members who derive benefits directly from the wetland or those who directly impact on the wetlands while the secondary stakeholders are those who indirectly benefit from the wetland but may influence conservation and wise use activities in the wetland system.

Table 3: Primary and secondary stakeholders

Primary stakeholders	Secondary Stakeholders
Crafts makers Grass harvesters Farmers Water collectors Brick makers Fishermen Hunters Religious ritualists Cultural ritualists Land lords Settlers Transporters Herbalists	Ministry of Water and Environment National Environment Management Authority Wetlands Management Department Bulambuli Local Government Ministry of Agriculture, Animal Industry and Fisheries Ministry of Works and Transport CSOs (NGOs/CBOs)

Table 4: Stakeholder matrix

STAKEHOLDER	INTEREST	RESOURCE
Crafts men	Papyrus and palm leaves for craft making	Papyrus and palms
Grass harvesters	Grass for mulching	Grass
Farmers	Water and land for growing crops	Water, fertile soils, land
Fishermen	Breeding ground	Fish, water
Water collectors	Water for production and domestic use	Water
Brick makers	Clay for making bricks	Clay, water
Hunters	Wild meat from the wetland	Wetland animals
Religious ritualists	Water for baptism rituals	Deep waters
Cultural ritualists	Herbs and Soil	Medicinal plants Clay
Land lords	Income Livelihood	Land Water
Herbalists	Herbal medicines	Herbs
Transporters	Water for transportation	Water
Settlers	Cheap land for construction	Land/soil
Local government	Proper usage of the wetland formulation, settling disputes, Mobilization, Sensitization, bye-law, revenue collection	Wetland
Central Government	Proper usage of wetland, development and implementation of policies, Financing for wetland management	Wetland
Religious, cultural leaders and Opinion leaders	Proper usage of the wetland, Community Sensitization, Conflict management, development	Wetland

4.7.2 Stakeholder matrix

The members in the planning team from the 56 villages of Komirya wetland, identified key wetland stakeholders, the resources they use and the interest derived from each of them. Table two highlights this;

4.7.3. Stakeholder importance and influence

Figure 8: DFO Bulambuli district facilitating during the pairwise ranking of influence and importance of stakeholders.

Using pairwise ranking, the perceived importance was decided with farmers ranked as no 1 followed by Water Collectors, National Water and Sewerage Cooperation, Fishermen and Land Lords in that order. Yet the cultural leaders, central government agencies such as Wetland Management Department, NEMA and NFA as well as hunters were perceived least important according to community.

The table below highlights the key stakeholders that were identified and ranked according to the perceived importance and influence among the resource users' community.

Table 5: Ranking of stakeholders' importance and influence of Simu-Muyembe wetland

Stakeholder	Importance		Influence	
	Score	Rank	Score	Rank
Landlord	09	04	12	02
Farmer	14	01	08	06
Local leaders	01	14	12	02
Tenants	07	07	07	07
Settlers	05	09	09	05
Cultural rituals	07	07	00	15
Fishermen	10	03	04	12
Hunters	04	11	02	13
Water collectors	13	02	12	02
Government	00	15	14	01
Transporters	04	11	02	13
Grazers	12	03	06	08
Sand miners	10	06	06	08
Herbalists	05	09	05	10
Craftsmen	03	13	05	10

The implication of above ranking to a common person means that Simu-Muyembe wetland plays a vital role in people's livelihoods because it supports farming activities especially during dry seasons, water collections, fishing activities. The lessons from this analysis means that government should invest more in alternative income generating projects such as fish farming, irrigation or craft making that most of the community members are engaged in if sustainable utilization of Simu-Muyembe wetland is to be achieved.

4.8 Participatory Resource Analysis

In order to understand the trends in resource use and availability in the area, the planning team synthesized the wetland resources, their uses, users and trends in resource use over time. This is important for creating more awareness on the range of wetland products and associated benefits that the community derive from Simu-Muyembe wetland.

4.8.1 Key wetland resources

Simu-Muyembe wetland provides a variety of benefits to the community around it. Just like any other wetland, Simu-Muyembe wetland offers both direct and indirect benefits to the community in form of provisioning, regulating, supporting and cultural functions. But to the community, it is those tangible values that matter a lot in their day-to-day living. Table 4 below indicates fourteen most used resources from the wetland in order of their priority.

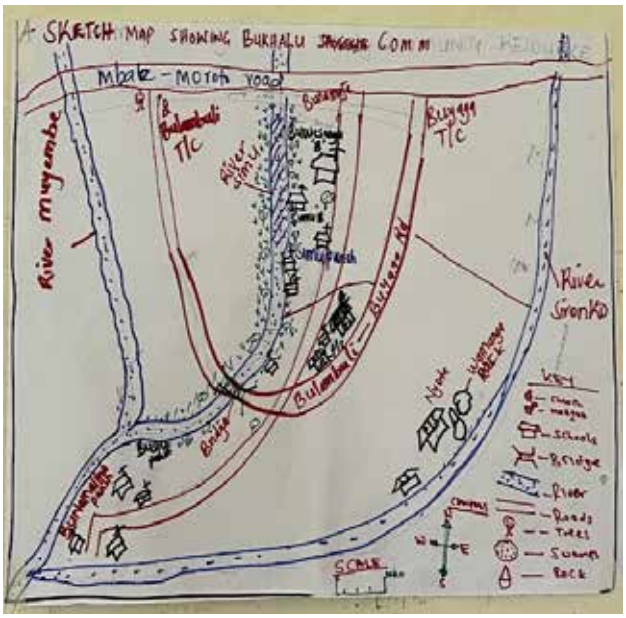
Table 6: Ranking of resources from Simu-Muyembe wetland resources

Resource	Frequency of score	Rank
Food	30	1
Fertile soils	25	2
Firewood	24	3
Grass	18	4
Land (fertile soil)	15	5
Water	14	6
Fish	11	7
Clay	8	8
Sand	8	8
Papyrus	6	10
Fruits	6	10
Timber	4	12
Herbs	4	12
Wild meat	1	14

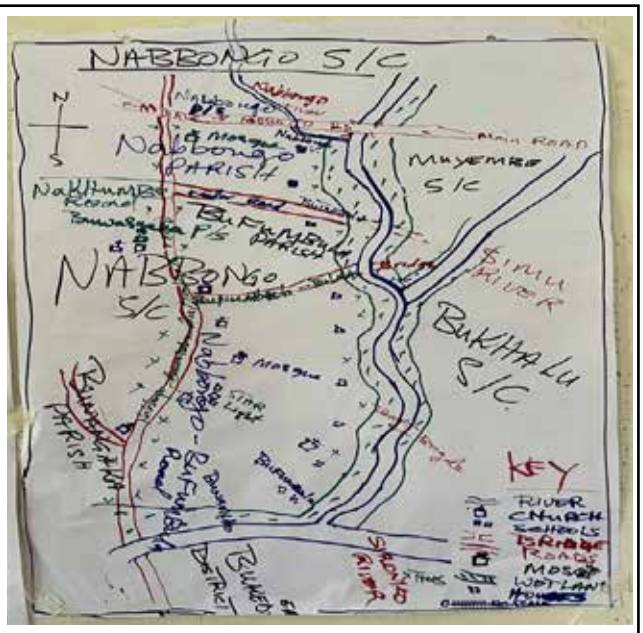
4.8.2 Community Wetland Resource Mapping

To understand and appreciate the extent of planning area, the community members drew a wetland resource map indicating Simu-Muyembe wetland and adjacent villages during the focus group discussions.

Figure 9: sketch maps showing both rivers Simu and Muyembe in Nabbongo and Bukhalu sub counties respectively

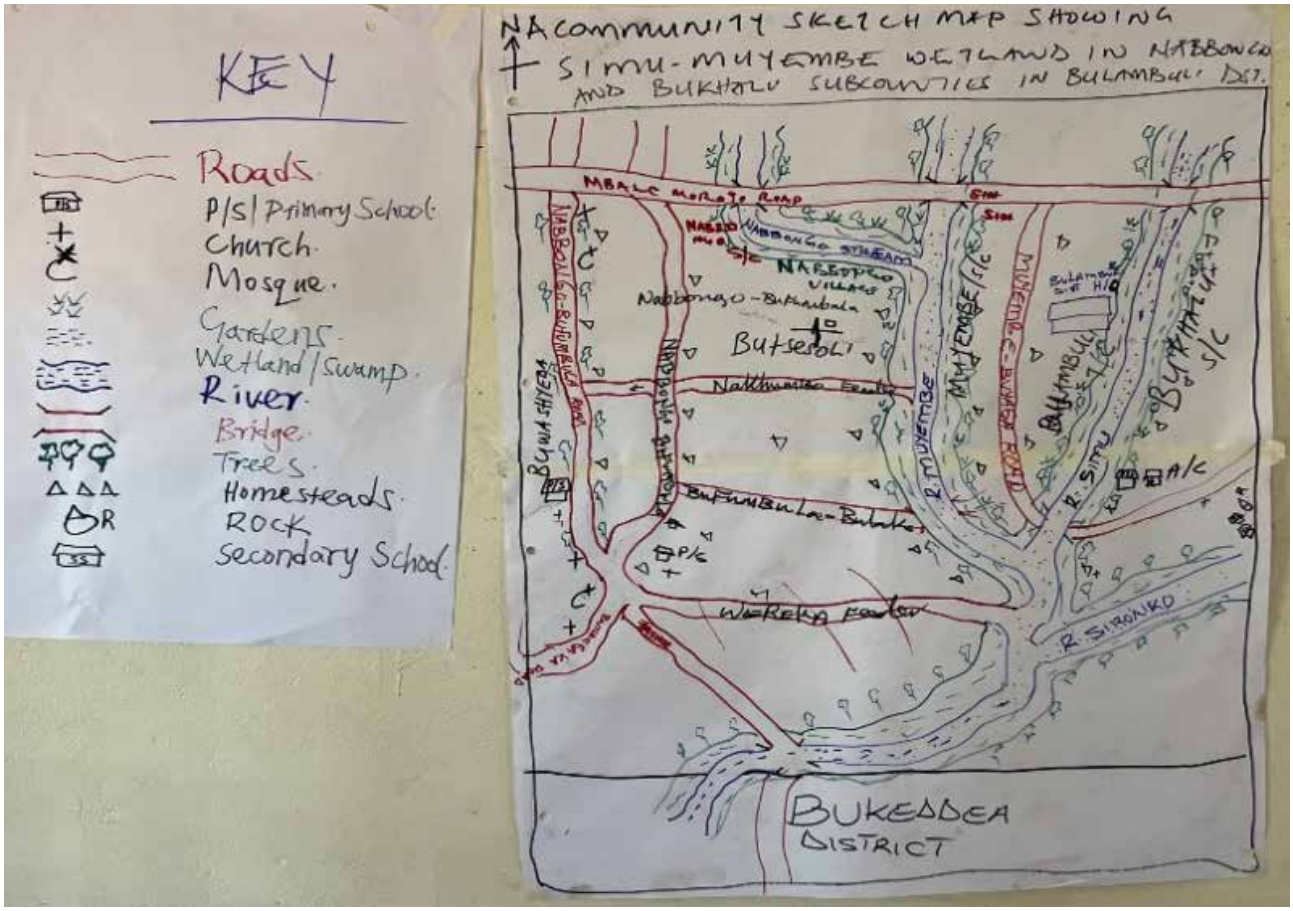


River Muyembe wetland in Bukhalu sub county



River Simu wetland in Nabbongo subcounty

Figure 10: A combined refined community resource user map showing Simu-Muyembe wetland in Bukhalu and Nabbongo sub counties.



4.8.3. Wetland resource user groups and uses by gender and seasonality

Key wetland resources, corresponding resource user groups, and associated benefits from Simu-Muyembe wetland are shown in the table below.

Table 7: Key resources, uses, user groups and seasonality

Wetland Resource	Benefit/value	Resource user group	RUG by Gender	Seasonal usage
Papyrus/grass	Crafts making e.g. Mats, Baskets, Hats, Bags, drying racks, Cup boards, tables, Wall hangings, Craft shoes, Roofing, Mulching	Crafts makers Builders Farmers	Men Women	Dry season
Trees	Fencing, Firewood, Medicine, Construction	Farmers Settlers	Men	Dry season
Fertile soils (crop & cattle)	Cultivation such as vegetables, maize etc., Grazing	Farmers Industries	Men Women Youth M&F	Dry season
Herbs	Medicine, Food, Income, Spices	Herbalists	Men Women	All seasons
Water	Watering animals, Irrigation, Domestic use, Brick making, Transport Baptism, Cultural rituals, Factory use, Study purposes, Distillation	Water users	All	All seasons
Clay	Brick making, ventilators, Plates, Pots, Charcoal stove, Medicine (MUMBWA), building, income	Clay miners Industries	Men Women	All seasons
Fish	Food, Income, Medicine	Fishermen	Men	All seasons

Figure 11: Participatory planning process by the planning team

4.8.4 Activity calendar by season

To understand the community interactions further with the wetland and how different seasons of the year affect the use of wetland, a seasonal analysis was conducted and based on the based on the main activities carried out in the wetland. The analysis included (a) activity calendar for the above-named crops like rice, maize and vegetables, which are largely planted in wetland for the period of one year, (b) seasonal calendar for Simu-Muyembe wetland catchment indicating cultivation processes as the mainstay of communities. These analyses are indicated on the tables 10 and 11 below respectively.

Table 8: Seasonal calendar for the key activities in Simu- Muyembe wetland

Activity	Month of the year activity occurs												By who
	J	F	M	A	M	J	J	A	S	O	N	D	
Farming	*	*	*	*	*	*	*	*	*	*	*	*	M, F, Y
Fishing	*	*	*	*	*	*	*	*	*	*	*	*	M
Grazing	*	*	*	*	*	*	*	*	*	*	*	*	M, Y,F
Sand mining	*	*	*			*	*					*	M,Y
Water collection	*	*	*	*	*	*	*	*	*	*	*	*	M, F, Y
Hunting			*	*	*			*	*	*	*		M
Herbs collection	*	*	*	*	*	*	*	*	*	*	*	*	M,F,Y

Table 9: Detailed calendar for the two main activities

Activity	Month of the year activity occurs												Actors		
	J	F	M	A	M	J	J	A	S	O	N	D	Women	Men	Youth
Rice growing															
Bush burning	√												√	√	√
Removing stumps	√													√	√
Burning	√												√	√	
Ploughing		√												√	√
Re-ploughing		√											√	√	√
Planting			√							√			√	√	√
Weeding				√									√	√	√
Bird chasing					√										√
Spraying					√	√								√	
Harvesting							√						√	√	
Fallowing								√	√					√	
Vegetables growing															
Slashing	√													√	√
Digging		√						√	√				√	√	√
Planting			√	√						√	√		√	√	√
Harvesting					√	√						√	√		

4.8.5 Historical analysis/timeline and implication of resource use

Owing to the importance of this tool in helping the community understand the dynamics of wetland resources use over time, history of resource use analysis was undertaken. The timing of the analysis was influenced by the availability of historical information from the community members. The table below presents the outcomes of different wetland resources used from Simu-Muyembe wetland, their levels of utilization and the reasons for such level of utilization.

Table 10: Trend analysis on resource use from Simu-Muyembe wetland

RESOURCE		PERIOD		
		1982-1992	1993-2003	2004-2024
Fire-wood	Use level	3	2	1
	Remarks	Low population Limited cultivation Plenty of trees in homesteads Fear of wild animals in wetlands	Increase in population Strong Enforcement Effective harvesting methods using hand saws	Industrialization High population High deforestation/ High demand for forest products i.e. Timber, Furniture, Charcoal Source of income Poor Methods of timber processing like power saws Infrastructure Development Weaker enforcement
Food	Use level	3	2	1
	Remarks	Cultivation was high with low consumption	Increased population	High population
Sand	Use level	3	2	1
	Remarks	Low use due to limited construction of permanent houses	Increase in permanent house construction Industrialization	Industrialization High population
Fish	Use level	3	2	1
	Remarks	Low population Low demand for fish Traditional skills of fishing	Increase in population Industrialization -high demand Improved skills of fishing	High population Climate change Degradation of river banks High demand Improved skills of fishing Government restrictions on fishing on big lakes
Grass	Use level	3	2	1
	Remarks	Too much grass Low cultivation	Increased cultivation Increase in population	Uncontrolled bush burning Spraying using chemicals Over grazing Climate change
Crafts	Use level	3	2	1
	Remarks	Low population Limited demand	Increase in population Increase in demand	Over cultivation Increased population Degradation

Water	Use level	3	2	1
	Remarks	Low population Mountains still intact No bore holes No NWSC No valley dams	Increase in population Climate change Boreholes introduced	High population Increased demand Urbanization Climate change Land use changes
Papy-rus	Use level	2	3	3
	Remarks	Low population	High population Agriculture moderniza-tion Technology	Agriculture modernization High population High technology (silage, briskets)
Herbs	Use level	2	3	3
	Remarks	Low population Primitivism	War effects Gov't encouragement to use health units	Pandemics (Covid 19) Many herbalists Awareness about herbs Marketing skills Road networks
Clay	Use level	3	2	1
	Remarks	Readily available No alternatives	Climate change Degradation Population pressure	Alternative soil for brick making Degradation Climate change Population increase

**** 0- Resource not used at all, 1- Low use, 2- Medium level of use (Fairly used), 3- High level of use**

Figure 11: Group discussions and presentations on trend analysis

From the above analysis; It is clear that most of the changes in natural resources such as demand for fertile soils, firewood, fish, water, sand and wetland vegetation have taken place in the last two decades due to increase in population, technology, unemployment, urbanization, chemical use, infrastructure development and climate change impacts among others. It is evident that prior to the 21st century, natural resources were being used in moderation due to low human population, low advanced and availability of virgin arable land for cultivation all of which prevented the population from invading the wetlands for survival.

4.8.6 Economic Valuation of Resources from Simu-Muyembe Wetland

Using the resource substitute approach, participants were able to assess the monetary benefits obtained from Simu-Muyembe wetland. Assumptions were based on the substitute value of a resource that is in case it was no longer available from Simu- Muyembe wetland. Five key resources as prioritized in the resource analysis as shown in the table below;

Table 11: Economic valuation of selected wetland resources (average household of 7 people)

Resource	Uses	Substitute	Unit cost	Quantity/HH/ Year	Total
Firewood	Cooking Income Burning bricks	Electricity	30,000	30,000 x12	360,000
		Biogas	800,000	800,000	800,000
		Solar	500,000	500,000	500,000
		Charcoal	2 bags @60,000	24x12x60,000	1,440,000
Timber	Building Income Making furniture	Plastics	500,000	500,000	500,000
		Metals	2,000,000	2,000,000	2,000,000
Herbs	Treatment /Medication Income	Hospital	500,000	2x500,000	1,000,000
Water	Domestic use Irrigation Income Grazing	NWSC Boreholes	8 Jerrycans	8x30x12x500	1,440,000
		Water harvesting	10,000 liters tank Plumbing	2,300,000 500,000	2,800,000
		Wells			
Fish	Income Food Medicine Craft	Meat	1 kg	1x30x12x13,000	4,680,000
		Chicken	1	1x30x12x30,000	10,800,000
		Greens Beans			
Sand	Building Income Raw material	Soil	2 trips @100,000	2x100,000	200,000
		Stone dust	3 trips @400,000	3x400,000	1,200,000
Food	Eating Income	Buying	20,000@day	20,000x30x12	7,200,000

Papyrus/ Grass/ Palm trees	Mats	Mattress	5 pcs	10,000	50,000/=
		Tapoline	2 pcs	50,000	100,000/=
	Stools	Plastic chairs	3 pcs	25,000	75,000
	Roofing	Iron sheets	20 (standard house of 5 people)	30,000	600,000/=
			Roofing nails	100,000	100,000/=
			Labor	300,000	300,000/=
	Poles	Eucalyptus	500	3,000	150,000/=
Fertile soils	Growing crops (2 acres)	Fertile upland soil (2acre/HH) rental	2acres x 2 seasons = 4 acres	200,000	800,000
Pasture	Feeding animals (3 cows)	Buying fodder	12 kgs/day x 3 cows 30 days x12months = 12,960kgs	500	6,480,000/=

The above valuation suggests that the community in extracting resources that support the livelihoods of hundreds may save a lot of money from using the wetland. The community easily identifies with tangible products that they every day to sustain their livelihoods. Furthermore, the exercise helps the community to identify and incorporate invisible costs that they take for granted, and therefore the need to conserve their wetland.

4.9 Problem Analysis in Simu-Muyembe

4.9.1 Problem listing

The planning process identified the problems, ranking and analysis in order to appreciate the most adverse problems facing the wetland and the people surrounding and using it. Problem ranking is the basis for prioritization and optimization of management measures or actions. The following problems were identified through participatory problem listing;

- Flooding
- Low incomes among the indigenous people
- Pests and diseases (humans, animals and crops)
- Drought
- Water pollution
- Poverty
- Famine
- Poor farming methods
- Land wrangles
- Price fluctuations
- Poor transport
- Inadequate capital
- Soil Erosion
- Ignorance
- Over cultivation
- Deforestation
- Bush burning
- Problem ranking

To understand the extent of the problems, causes and possible solutions members were put into four groups in order for them to rank and analyze these problems and later presentations were made with ranking details, causes and the possible solutions to these problems.

Table 12: Problem ranking by Komirya CbWMP team

PROBLEM	SCORE	RANK
Flooding	64	07
Bush burning	45	15
Wetland degradation	62	09
Deforestation	53	13
Over cultivation	49	14
Ignorance	57	11
Soil Erosion	72	03
Inadequate capital	63	08
Poor transport	74	02
Price fluctuations	39	17
Land wrangles	35	18
Poor farming methods	55	12
Famine	43	16
Poverty	68	05
Water pollution	70	04
Drought	59	10
Pests and diseases	68	05
Low incomes among the indigenous people	76	01

4.9.2 Problem analysis

This provides a basis for development of objectives and actions upon which the management plan shall be implemented and evaluated. Problems were identified and the root causes analysed. Identification of the root causes helps in developing interventions that are feasible and targeted to the real problem. A summary of major problems and their causes is as shown in the table below;

Table 13: Root causes and suggested solutions to key problems in Simu- Muyembe wetland

Problems	Cause	Solutions
Flooding	Too much rainfall Deforestation and destruction of wetlands Stone quarrying	Soil and water Conservation-Terracing Re-afforestation and restoration
Low incomes among the indigenous people	Limited land for production Climatic change effects such as prolonged droughts and erratic rain Lack of access to cheap capital for production Land fragmentation Use of rudimentary farming methods Limited diversification of income streams Price fluctuations for agricultural produce such as milk and maize	Mobilization of community members into parish development model operations, Emyooga Programme and SACCOs Train and support the farmers to adopt improved farming methods such as micro irrigation, Train and support people with alternative livelihoods options such as poultry, fish farming etc Create awareness on the dangers of land fragmentation
Pests and diseases (humans, animals and crops)	Poor farming methods Poor quality seeds Poor hygiene and sanitation Presence of stagnant water in burrow clay pits Drinking contaminated water Destruction of vector habitat	Improved farming methods Improved seed varieties Conduct joint awareness campaign with MOH on use of mosquito nets Enforce solid waste management practices Community sensitization Restore clay pits to avoid disease causing vectors like mosquitoes
Drought	Deforestation, environment degradation Climate change	Afforestation Irrigation
Water pollution	Unregulated use of pesticides in adjacent agricultural fields Solid waste dumping Siltation resulting from cultivation within the wetland Flash floods Bush burning	Establish buffer zones between agricultural fields and wetlands Adopt organic farming methods of farming such as composting Create awareness on the dangers of chemicals in water Adopt soil and water conservation practices such as grass bands and agroforestry Develop and implement byelaws on use of chemicals in wetlands Train and enforce proper waste disposal measures in the community
Poverty	Poor planning Lack of land Limited income Price fluctuations	Price stabilization Promote alternative income generating activities Provide cheaper loan services

Famine	Lack of enough food Drought Low income	Proper planning Irrigation Sensitization and awareness
Poor farming methods	Ignorance Shortage of land Lack of good seed varieties	Sensitization Extension workers Improved seedlings Land hiring
Land wrangles	Wrong purchasing Wrong demarcations Increasing population causing pressure on the limited land Lack of clear wetland boundaries Lack of awareness on wetlands rules and regulation Violation of land use agreements between landlords and tenants Inactive land and environmental management committees Lack of succession planning	Clear demarcations Land titles Family planning methods Create awareness on the need to adopt family planning methods Train farmers to adopt intensive agriculture Demarcate wetland boundaries with concrete pillars to deter further encroachment of wetlands by so called land owners Re-activate, train and empower land and environmental management committees Create awareness on the importance of making wills.
Price fluctuations	Over production Less demand Limited market Poor transport and communication	Value addition Advertisements Stores should be set up
Poor transport	Too much rainfall Lack of access roads Corruption	Trenches and culverts Construction of feeder roads
Inadequate capital	Failure to utilize the available resources Poor planning Lack of financial knowledge	Sensitization of the community Financial literacy Loans and savings
Soil Erosion	Poor farming methods, Bush burning Lack of terraces, Increased run-off as a result of iron roofed houses, Deforestation, Continuous tillage of land (no fallowing) Land shortage	Adopt soil and water conservation practices such as afforestation Fallowing and mulching Establish buffer zone between the farming areas and the wetland Continuous sensitization
Ignorance	Lack of skills Lack of mindset	Sensitization and awareness creation Mindset change
Over cultivation	Shortage of land Over population	Improved farming methods

Deforestation	Settlement Increased population Land for cultivation Need for firewood and timber	Afforestation Use of modern farming methods Energy saving methods
Bush burning	To create settlements Farming Mining	Planting trees and grass Improved farming methods Sensitization and awareness

Figure 14: Group discussion to analyze the problems facing the communities of Simu-Muyembe wetland

4.10 Conflict analysis

Simu-Muyembe wetland supports livelihoods of thousands of local populations, each with differing interests as highlighted in previous sections of resource analysis. It is therefore natural that in the process of each individual or a resource user group trying to satisfy its needs, conflicts arise. This exercise therefore helped the community identify the areas of conflict and propose ways to minimize the conflicts for sustainable utilization of the wetland. The findings are presented on table below;

Table 14: Conflict analysis

Conflict	Cause of conflict	Copying strategy	Solution
Farmer vs government	Wetland encroachment and degradation Restoration- removal of unwanted plants and blockage of drainage channels Enforcement of environmental laws	Negotiations Awareness creation on best management practices Political interventions by local leaders Enforcement	Compensation Zoning Negotiations Continuous sensitization on best management practices Monitoring and enforcement Implement actions proposed in this plan
Farmers vs farmer	Boundaries Theft Pollution Destruction of crops	Negotiation Enforcement	Zoning Bye- laws Report to Courts of law Boundary opening Compensation
Farmer vs grazer	Destruction of crops by livestock Removal of cattle fodder by cultivation Over grazing leading to soil compaction Water siltation and pollution from chemical used by cultivators Denied access for cattle to grazing areas by cultivators Theft of crops by Cattle keepers	Establishment of access routes Temporary enclosures by cultivators reporting to police for arbitration Fines and compensations by livestock keepers for the crops destroyed e.g Tradeoffs (livestock farmers give free milk to cultivators)	gazette livestock access routes to grazing areas sensitization of both parties on wise use of wetland Establish buffer zones beyond which only non-destructive activities will be allowed such as bee keeping, grazing, papyrus harvesting etc Zoning the wetland to allocate each activity its section
Hunter vs farmer	Destruction of crops in the process of hunting	Reporting Fencing off	Negotiations Reporting to Courts of laws
Land lord vs Tennant	Not paying rent Boundary problem	Summoning	Negotiation Reporting to Courts of laws

Craftsmen vs farmers	Cutting of raw materials by farmers during cultivation Trespassing by craftsmen/ farmers Lack of clear access routes for either party Burning of Papyrus and other grass by cultivators during land preparation Theft of crops by craft makers Crop trampling by craft makers	Negotiations and compensations Arbitration by Local councils and police	Negotiations Compensation Law enforcement Bye- aws Establishing of access routes or ridges Establish zone areas for different users Strengthen the wetland management committee to arbitrate conflicts Sensitize cultivators on better farming practices among others to avoid bush burning
Settlers' vs farmers	Theft Land grabbing Deforestation Bush burning	Reporting to LC2 Fines	Zoning Marking of boundaries Bye laws Afforestation
Land lord vs government	Poor farming methods Deforestation Encroachment Lack of compensation	Adopting good farming methods afforestation demarcation compensation arresting	Sensitization Awareness Afforestation Bylaws
Transporters vs farmers	Low payments Destruction of crops High transport costs imposed on farmers Payment defaults by farmers	Widening transport roots Minimizing transport costs	Increasing payments Widening transport routes Encouraging trust among two parties
Hunters' vs fishermen	Theft Trespass	Reporting to LC1	Compensations Courts of laws Zoning Bylaws

Farmers vs brick makers	Competition for space and raw materials like grass by both parties Burrow pits that harbor mosquitoes and also cause accidents to both animals and people Theft of crops by brick makers Destruction of bricks by animals Trucks ferrying bricks tend to destroy crops on the roadsides	Negotiations and compensations provision of temporary access routes by either party enclosures to avoid cattle trampling on bricks arbitration by LCs and police sometimes	Zone the wetland Establish permanent access routes for both trucks and animals Strengthen the wetland management committee to arbitrate conflicts restoration of clay mine pits to near original state
Cultivators' vs fishermen	Water obstruction by cultivators at to the disadvantage of fishermen Theft of crops and fish by fishermen and cultivators respectively Destruction of crops by fishermen in form of pathways and search for baits	Counter warnings by either side Fencing of gardens to avoid trampling Village courts settlements	Strengthen wetland management committee to superintend wetland activities Zoning for various activities Sensitization of both parties to use modern methods of resource extraction such as fish farming

PART III: WETLAND MANAGEMENT PLAN

CHAPTER FIVE: VISION, OBJECTIVES AND ACTIONS

This chapter presents the vision, objectives and strategic actions that the planning team proposed based on how they would like to see Simu-Muyembe wetland after successful management interventions.

5.1 Visioning

A vision reflects the future aspirations of the community and assumes many constraining factors as being constant to allow for effective implementation of all measures as proposed in the management plan. Participants were divided into two groups depending on the different sub counties where they were told to develop a vision, objectives action points and activities. The two visions were then polished to generate the Long-term Vision Statement for Simu-Muyembe wetland as agreed by the community as follows;

A well conserved, restored Simu-Muyembe wetland performing its ecological, socio-economic functions for the benefits of Bukhalu and Nabbongo community and entire ecosystem.

5.2. Objectives

The communities then proposed objectives that are geared at how to achieve the stated vision above. The overall objective of the Management Plan is "To promote the conservation of Simu-Muyembe wetland system to sustain its ecological and socio-economic functions by the year 2035". Each sub county presented its objectives, which were later refined and consolidated to have the objectives of Simu-Muyembe wetland management plan as follows;

1. To restore the integrity of Simu-Muyembe wetland for the continued provision of ecological and hydrological functions.
2. To set up and strengthen institutional capacity of wetland management structures at village, parish and sub county levels for enhanced monitoring, stewardship and enforcement of wetland regulations
3. To create awareness and sensitize the stakeholders on the sustainable management of Simu-Muyembe wetland
4. To improve livelihoods of wetland dependent communities through promotion of alternative IGAs

5.3. Management Measures and Actions

The community scrutinized the objectives and derived management actions and measures, which would lead to achieving the formulated objectives. Focus was put on management measures, which are achievable and aimed at addressing the identified problems during the resource, conflict and problem analysis. Below are the formulated management actions for each of the four objectives:

Objective 1: To restore the integrity of Simu-Muyembe wetland for the continued provision of ecological and hydrological functions.

Actions;

- Create awareness on both direct and indirect wetland values
- Demarcate the wetland boundaries
- Restore the wetland (replant wetland vegetation in severely degraded areas, block the drainage channels and allow free flowing water)
- Promote pollution control measures in and around the wetland
- Offering compliance and legal assistance on wetland related activities
- Establish different zones for wetland uses

Objective 2: To set up and strengthen institutional capacity of wetland management structures at sub county levels for enhanced monitoring stewardship and enforcement of wetland regulations

Actions;

- Establish, train and equip the wetland management committee to superintend the wetland activities in the area
- Formulation of bye laws
- Designate a focal point person for wetland/environment management at Sub County
- Develop and implement bye-laws to strengthen enforcement of the regulations
- Conduct participatory monitoring activities involving the community
- Integrate Simu muyembe management plan into district and sub county action plans.
- Co-opt cultural institutions and spiritual leaders in the area to mobilize for conservation

Objective 3: To improve livelihoods of wetland dependent communities through promotion of alternative IGAs

Actions;

- Establish a wise use demonstration model at the wetland
- Promote wetland-based enterprises (conduct enterprise selection, group farmers according to enterprise selection, conduct tailor-made trainings based on enterprises)
- Promote value addition of agricultural products
- Train the youth in vocational skills such as carpentry, welding, mechanics, electric, hairdressing, tailoring, bakery, etc.
- Support selected groups with inputs, equipment and startup capital through established SACCOs

Objective 4: To create awareness among the stakeholder on the sustainable management of Simu-Muyembe wetland

Actions;

- Mobilize and sensitize communities though their local leaders to conserve
- Introduce environmental conservation in schools
- Design customized awareness materials
- Design and install awareness posts and billboards on the Simu muyembe wetland
- Conduct community broadcasting with conservation messages
- Carry out community bench marking activities to different wetland sites

Table 15: Summary of management actions per objective

PART IV: IMPLEMENTATION

CHAPTER SIX: IMPLEMENTAION PLAN AND ARRANGEMENTS

6.1. Implementation plan

The implementation plan presented in the table below covers a ten (10) year period. This plan will form basis for deriving annual targets and activities as well as indicators for measuring implementation progress and impacts. The management plan will be implemented through collaborative partnership between central, local governments, NGOs, CSOs, and other development partners. The support from Central Government will majorly be through the Conditional Grant for Environment and Natural Resources, however partnerships with NGO's/CSO's in the district should also be harnessed to contribute towards implementation of some elements of this plan like food security, water and sanitation as well as community mobilization.

6.2. Costed budget for implementation of Simu-Muyembe management plan

Table 16: Costed budget for implementation of Simu-Muyembe management plan

Objective 1: To restore the integrity of Simu-Muyembe wetland for the continued provision of ecological and hydrological functions

Management Action	Activities / Tasks	Input / materials	Unit 1	Unit 2	Unit Cost	Total Cost
Create awareness	Mobilize and hold community meetings	Communication (airtime, posters, village radios etc.)	Lump sum	1	200,000	200,000
		Allowances for resource persons	2	3 days	110,000	660,000
		Stationary	1	1	50,000	50,000
		Fuel	1	100 lts	5,000	500,000
Control water pollution	Train farmers on the right use of agro-chemicals	Allowances for resource persons	2	4 days	100,000	800,000
		Transport	2	4 days	100,000	800,000
		Mobilization	1	1	100,000	100,000
	Designate solid waste dumping sites in urban centers (Muyembe)	Land acquisition or hire	1	1	2,000,000	2,000,000
		Compliance enforcement	1	365 days	5,000	1,825,000
Demarcate boundaries	Assess and delineate wetland boundaries	Allowances for technical officers	2	5 day	550,000	5,500,000
		Allowances for ground truthing the wetland with select committee members	10	2 days	20,000	400,000
	Mark the boundary with pillars or live markers	Procure boundary markers and plant them	1000 pillars	1	200,000	200,000,000
		Procure, transport and plant indigenous tree species in restored areas	5000 seedlings	1	5,000	25,000,000
		Fencing off the plantings (including poles, transport, barbed wire, nails and labor)	Lump sum	1	20,000,000	20,000,000

Undertake wetland restoration	Sensitize the communities	Excavator and its transport to and from various sections that require such equipment	1	10 days	2,000,000	20,000,000
		Causal laborers	30	30 days	5,000	4,500,000
	Facilitate the restoration activities	Transport	1	1	1,000,000	1,000,000
		Staff and committee allowances	15	30 days	20,000	9,000,000
		Tree seedlings	5,000	8 villages	1,000	40,000,000
	Undertake post restoration activities	Regular monitoring transport and allowances for community committee	2 x 48 days / year	8 villages	5,000	3,840,000
		Enforcement activities (inc. fuel, allowances, courts, etc)	1	1	30,000,000	30,000,000
Sub total						**366,195,000-**

Objective 2: To create awareness among the stakeholder on the sustainable management of Simu-Muyembe wetland

Management Action	Activities/ Tasks	Input/materials	Unit 1	Unit 2	Unit Cost	Total Cost
Conduct mobilization and sensitization campaign	Produce site specific messages for Simu- Muyembe community audience	Facilitation for technical person	2	10 days	110,000	2,200,000
		SDA for field survey for pretesting	4	1 day	110,000	440,000
	Conduct meetings to disseminate information on sustainable utilization of wetlands	Stationary	1	1	200,000	200,000
		Per diem for resource persons	2	14 days	120,000	3,360,000
		Fuel for resource persons	1	70 ltrs	5,000	350,000
	Hold radio talk shows	Radio airtime	1	10 nights	1,000,000	10,000,000
		Per diem for radio panelists	3	10	110,000	3,300,000
		Fuel/transport	3	10	50,000	1,500,000
	Establish environment clubs in at least 1 primary schools per parish and conduct drama shows in schools	Facilitation for technical persons to develop content	2	5 days	100,000	1,000,000
		Support to drama activities such as teacher allowances, costumes, equipment etc	5 schools	1	2,000,000	10,000,000
		Support drama competitions at wetland system level every year for 5 years	5 years	1	20,000,000	100,000,000
	Conduct exchange visits by executive committee to benchmark best practices	Host trainer facilitation	1	4 days	100,000	400,000
		Transport	1	2 days	600,000	1,200,000
		Per diem allowances for resource persons	2	4 days	110,000	880,000
		Refreshments and meals	30	2 days	50,000	3,000,000
Sub total						137,830,000-

Objective 3: To improve community livelihoods through introduction of alternative income generating activities						
Management Action	Activities/ Tasks	Input/materials	Unit 1	Unit 2	Unit Cost	Total Cost
Mobilization of community into enterprise groupings	Hold meetings to form groups	SDA for resource person	2	4days	110,000	880,000
		Stationary	Lump sum	lump-sum	100,000	100,000
		Fuel for resource persons	1	60ltrs	5,000	300,000
		Mobilization	Lump sum	lump-sum	100,000	100,000
	Training on viable alternative livelihood projects	SDA for resource person	2	4days	110,000	880,000
		Stationery	Lump sum	lump-sum	200,000	200,000
		Fuel	1	60ltrs	5,000	300,000
	Setting up at least two demonstration sites for skilling the youths	Securing the land including enclosures, rent fares etc	2acres	1	15,000,000	30,000,000
		Inputs to the selected enterprises	2acres	1	20,000,000	40,000,000
		Labor for three years	4	36 months	150,000	21,600,000
		Provide improved seeds to groups	Lump sum	3 years	50,000,000	50,000,000
		Facilitation to extension staff	4	180 days	50,000	36,000,000
Resource mobilization from different actors such as CSOs, Govt poverty eradication programmes like PDM, Emyooga etc	Develop fundable proposals	Contract resource person to write a proposal	2	3 months	2,000,000	12,000,000
	Coordination with govt agencies thru Lobbying and advocacy	Allowances for technical officers	2	60days	110,000	13,200,000
	Formation and training of savings and credit cooperatives for resource pooling	SDA for resource persons	2	4days	110,000	880,000
		Stationary	1	1	100,000	100,000
		Fuel for resource persons	1	50ltrs	5,000	250,000
		Registration of SACCOs with relevant institutions	2	1	500,000	500,000

Support to the establishment of demonstration sites for climate smart agriculture such as fish ponds, zero grazing, micro irrigation schemes and skilling youths among others	Support to fish farming	Securing land within the wetland including nominal rental fees for immediate neighbors, fencing, clearing etc	2 sites	1	15,000,000	30,000,000
		Establishment of ponds	2 sites	1	30,000,000	30,000,000
		Seeds (fingerings) and feeds	2 sites	1	10,000,000	20,000,000
		Labor requirements	4 workers	36 months	100,000	14,400,000
		Supervision	Lumpsum			10,000,000
	Support to dairy farming	Identification and training of farmers	Lum sum	2 months	10,000,000	10,000,000
		Provision of heifers	40 heifers	2 s/cs	2,000,000	160,000,000
		Startup capital for medication, feeds, seeds for pasture etc for at least one year	Lumpsum	lumpsum	30,000,000	30,000,000
		Supervision and technical support	lumpsum		10,000,000	10,000,000
	Support to micro irrigation scheme	Identify and train interest farmers and establish a data base			12,000,000	12,000,000
		Survey the area for establishment of irrigation scheme(demonstration) and secure the area	lumpsum		40,000,000	40,000,000
		Establishment of irrigation demonstration for wise use	Lumpsum			200,000,000
		Supervision and technical support	lumpsum		10,000,000	10,000,000
Conduct quarterly participatory monitoring and evaluation of all community-based livelihood projects	Set up committees for each identified enterprise and train it on basic monitoring and evaluation	Resource persons allowances	4	60 days	100,000	24,000,000
		Transport/lunch allowances	lumpsum		12,000,000	12,000,000
		Stationary	lumpsum		200,000	200,000
Sub total						**819,910,000**

Objective 4: To set up and strengthen institutional capacity of wetland management structures at Sub county level for enhanced monitoring, stewardship and enforcement of wetland regulations						
Management Action	Activities/ Tasks	Input/ materials	Unit 1	Unit 2	Unit Cost	Total Cost
Build capacity of wetland management committee to handle environment issues	Train elected committees	Refreshments	1	5days	50,000	250,000
		SDA for resource persons	2	5days	110,000	1,100,000
		Stationary	1	1	100,000	100,000
		Fuel for resource persons	1	120ltrs	5,100	612,000
	Formulate bylaws	Refreshments	1	5 days	50,000	250,000
		Resource persons	2	5days	110,000	1,100,000
		Stationary	1	lumpsum	100,000	100,000
		Mobilization	1	1	50,000	50,000
		Secretarial activities and editing the draft document	2	5days	110,000	1,100,000
		Ratification (allowances for councilors and technical officers)	30	1day	50,000	1,500,000
Establish a local office for coordination of wetland management issues and regular reporting	Identify a central point to set up office	Rent fees	1	60months	200,000	12,000,000
		Furnish the office	1	1	2,000,000	2,000,000
		Stationary	1	60months	50,000	3,000,000
		Volunteer secretary	1	60months	100,000	6,000,000

Designate Sub county technical officers as environment focal persons	Formal designation by CAO	Communication and delivery	1	1	100,000	100,000
	Train designated officer in environment and wetland policies and laws	Training costs	1	1	1,000,000	1,000,000
		Facilitation in form of transport, SDAs etc	3	60 months	50,000	3,000,000
Sub total						33,262,000
GRAND TOTAL						1,357,197,000=

6.3. Monitoring and evaluation plan

6.3.1 Monitoring and Evaluation Framework

The foundation for monitoring and evaluation systems is the logical framework in which a series of key performance indicators are identified and suit a set of actions and activities raised in the management plan. The monitoring indicators, disaggregated by objectives will compare performance in every objective with clearly set targets per year. The general principles for the participatory monitoring and evaluation will also be adopted.

Monitoring groups will comprise of:

a. Community user groups: will monitor local wetland related activities supported by implementation committee

b. Members of Implementation committee: will monitor activities, inputs and output achievements in their respective areas supported by district local government.

c. Relevant institutions, such as Ministry of Water and Environment through Wetland Management Department and NEMA will monitor conformity with the standards and relevance to existing policies and guidelines for Environment and Natural Resources.

d. CSOs/CBOs will monitor and evaluate overall performance and impact of the intervention on biodiversity status, community livelihoods and the general environmental requirements

Table 17: Monitoring and Evaluation framework

Objectives	Out put	Indicator (what to monitor)	MOV (means of verification)	Responsible institutions
Restoration of wetland integrity	Increased wetland coverage providing essential services and products to community Regeneration of the wetland	Area in hectares of wetland restored or naturally regenerating No of people benefiting from wetland products Water quality Length in kilometers of the boundary line demarcated	Field observation reports Standing boundary live markers or pillars Periodic reports Lab tests	DLG MWE NEMA Committee

Establishment and empowerment of wetland management structures	Functional committees Reduced encroachment Empowerment to resolve community conflicts	Office space operational No of people actively involved in wetland management activities No of meetings conducted by the committee No of cases arbitrated by the committee	Reports Observation Minutes of the meetings	Committee DLG MWE
Alternative livelihoods	Demonstration sites for irrigation, fish farming & dairy farming established Community SACCOs established and supported Improved standards of living among the community	No of demonstration sites established No of individual improved fish ponds, dairy farms and irrigation schemes established No of people registered in at least one SACCO Amount of resources (funds, physical, training etc) mobilized No of house holds participating in IGAs-projects	Field observation Farmer records Household income surveys	MWE DLG NEMA NGOs CSOs MAAIF
Awareness creation	Appreciation of wetland values Reduced encroachment on wetland No of people arrested, cautioned and charged for wetland destruction No of schools with demonstration practices Drama clubs and enforcement clubs in schools and community Radio programs	Community attitudes Community knowledge and practices Equal gender representation	KAP survey Interviews Observations of behaviors At least one school from each sub county	MWE Committee DLG

6.3.2. Implementation structures

The implementation process will be monitored and supervised by various stakeholders including among others the Management Committee for Simu-Muyembe Wetland Management Plan, Civil Society Organizations, Bulambuli District Local Government and Ministry of Water and Environment.

6.3.2.1. Composition of implementation committee

Based on the number villages involved in the planning process, efforts were made to have a representative number of stakeholders on the implementation committee so that each group's interests would be articulated and planned for in implementation. Each sub county elected a committee which will be able to take on the different duties of managing the different parts of the wetland in that locality but a combined committee from the 2 committees of the different sub counties of 11 members was constituted from the resource user groups representing all the villages in the different parishes in the 2 sub counties and a number of ex officials from both district and the 2 sub counties constituted 13 members. Table below highlights the composition by category of main stakeholders as far as utilization and protection of Simu-Muyembe wetland is concerned.

Table 18: Implementation committee representatives

Category	No.
Committee	11
Community Development Officer	2
DFO, DAO, DEO, DNRO, MWE	4
GISO	2
District Natural Resources Officer	1
LCIII Chairperson	2
Male and female District councilors	2
Total	24

6.3.3. Committee members

Table 19: Nabbongo sub-county committee

NAME	TITLE	CONTACT
TUBASA PETER	CHAIRPERSON	0775084932
WAMBI RICHARD	VICE CHAIRPERSON	0781517592
MAYOBO ROGDERS	SECRETARY	0779612689
MUTONYI OLIVER	TREASURER	0778840303
WAKHATA DAVID	PUBLICITY	0782612864
KHAMWANA STEPHEN	PWD(M)	
NABULOBI FLORENCE	PWD(W)	
SIMIYU ALEX	YOUTH	0777623829
ICHOLIA MARY	YOUTH	
KISAMBA PATRICK	ELDERLY	0772095505
NAGUDI BETTY	ELDERLY	0783595832
WAMAYI LYDIA	WOMEN REP	0774482394

Table 20: Bukhalu sub-county committee

NAME	TITLE	CONTACT
WAKHASA GODFREY	CHAIRPERSON	0779215724
KAKAYI BETTY	VICE CHAIPERSON	0788228630
LUKHOBA BOSCO	SECRETARY	0787237585
KHABUYA SUZAN ZULAH	TREASURER	0781657777
KALISI JIMMY	YOUTH	0776756482
MWOLOBI SOPHIE	YOUTH	0781433375
MALISA FRANCIS	ELDERLY(M)	0777146122
MUYAMA BETTY	ELDERLY (F)	0763226105
MWANIKA FRANCIS	PWD(M)	0787754498
KHALAYI YOWANINA	PWD(F)	0775183290
NAKHUMITSA BABRA	WOMEN REP	0780990400
MOYA PETER	PUBLICITY	0785046244

Table 21: Executive committee for Simu Muyembe management plan

Name	Title	Contact
LUKHOBA BOSCO	CHAIRPERSON	0787237585
TUBASA PETER	VICE	0775084932
MUYOBO RODGERS	SECRETARY	0779612689
WAKAHATA PAUL	PUBLICITY	
WAKHASA GODFREY	TREASURER	
MWANIKA FRANCIS	PWDS (M)	0787754498
NABULOBI FLORENCE	PWD(W)	
SIMIYU ALEX	YOUTH	0777623829
NAKHUMITSA BABRA	YOUTH	0780990400
WAMANGA MOSES	ELDERLY(M)	0780459414
WAMAYI LYDIA	WOMEN REP	0774482394

6.4. Roles and responsibilities of stakeholders in implementation of plan

Table 22: Roles and responsibilities of key stakeholders in implementation of plan

Stake holders	Roles
Community	• Abiding by the bye-laws put up by management committee • Implementing rules and regulations • Engaging in alternative income generating activities • Sensitization of fellow community members • Report wetland abuses to committee
Local leaders (LC1-lC5)	• Exemplary • Mobilization f communities • Monitoring the management committee • Coming up with resolutions for management of the wetland • Sensitization • Linking community to develop projects
Government (central and local government)	• Developing and disseminating resource use guidelines • Registration of resource user group associations • Universal application of environmental laws • Resource mobilization • Monitoring and enforcement
CSO's	• Proposal writing or funding • Building capacity of committees • Act as watchdogs for environment

6.5. SWOT Analysis of Enterprise Selection

A SWOT analysis of four projects identified by the participants as the main flagship projects in the area was conducted in the participatory manner. The four projects identified include irrigation facility that would support crop and animal husbandly, fish farming bee keeping as well as fruit tree planting. Looking at the strengths, weaknesses, opportunities and threats as far as the four projects were concerned, it was concluded that Irrigation farming takes precedence since farming employs many community members and is thus the backbone of the district. Bee keeping/Apiary became the second because of its friendly and conservation nature to the wetland, Fish farming was voted the third best since fish farming is wetland friendly and requires small piece of land to maximize the benefits. Tree planting came in fourth position since they claimed it is costly with need of big chunks of land and a lot of work.

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8. ANNEXES

8.1. Annex I: Attendance lists

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: ....

Date: ....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
01	LUKHOBA Bosco	Youth Councillor Bukhalu S/C	M		✓				0781283565	[illegible]
02	WANDWASI KALEB	LCI NABE BUBTUMU	M		✓				0788495027	[illegible]
03	NAMAKOYE BETTY	P/CHIEF	F			✓			0787845660	[illegible]
04	MOBUKU Charels	SAS	M				✓		0772828963	[illegible]
05	MWAYAFU MICHAEL	Councillor	M		✓	✓			0774630877	[illegible]

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: ....

Date: ....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
01	WABYANGA EKISOFERI	Councillor Bushiende	M		✓				0781829149	[illegible]
02	WANDELA JUNIOR	Farmer	M			✓			0778820550	wandela
03	MOYA PETER	Councillor Bukhalu	M			✓			0785066244	[illegible]
04	MWAMBU [illegible]	BUKHAKWANO	M		✓				0786685617	[illegible]
05	MAKOLO GEOFREY	C/M LCII	M				✓		0779222549	[illegible]
7	NABUMATI JANE	SAS	F				✓		0785078407	[illegible]
8	NAMBAFU BENARD	PARISH CHIEF	M		✓				0781073271	[illegible]
9	WABUTI JOHN	C/P LCIII	M					✓	0774987275	[illegible]
10	MWANIKHA ALEX	P/CHIEF	M			✓			0757722650	[illegible]
11	NAFUNA ANNET	CDO	F			✓			0778097315	[illegible]

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: .....

Date: .....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
1.	Nereka charles	Famer	M						0775784094	
2	KIABOMBA BONIFACE	FAMER	M				✓	xHA	0782627764	
3	MASAIBA GEORGE	FAMER	M				✓	✓	0785402081	
4	KIBUKU MOSES	LCI	M			✓			0785914320	
5.	LUSISI ANNET	councillor	F			✓			0789403370	
06	Nambale Rukasio	LCI	m			✓			0770674628	
07	KAWESA ARAJABU	LCI	M			✓	✗		0779766969	
08	WANANDA ROBERT	LCI	M				✓		0783086150	
9	WALUKHU RICHARD	LCI	M		✓				0781066824	
10	WARWARE CHARLES	LCI	M					✓	0762665131	

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: .....

Date: .....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
01	WAFULA PATRICK	LCI	M				✓		0783848710	
02	KUTOSI FRED	LCI BUKEWA	M				✓		0777722009	
03	NABUKONDE RACHEAL	FEMALE YOUTH COUNCILLOR Nabbale	F		✓				0784984281	
04	WANDA ANTHONY	LCI BUSIA	M			✓			0774023971	
05	MABUKA MICHAEL NAMUKOKWA	LCI	M				✓		0776296921	
06	KITUYI SOVIA	Area Councillor BUNANGIAKA	F			✓			0787912889	
07	BITEREMO TONY ISAAC	MALE YOUTH COUNCILLOR	M		✓				0772940139	
08	WAKHELE MOSES	COUNCILLOR BUNANGIAKA	M			✓			0777904341	
09	WAFISUSI ROBERT MANKA	LCS	M				✓		0780434945	
10	NAKHAMA MARGIN	LCI	M			✓			0781943332	

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: ....

Date: ....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
1	Wambolca SAM	Fisherman	M		✓				0761982151	[signature]
2	WELISHE GEOFREY	farmer	m		✓				0779745964	Weliishe
3	WEPUKHULU YEFUSA	farmer	m		✓		✓			[signature]
4	Namusano Lawrence	LCI	M		✓		[illegible]		0784538002	[signature]
5	NAMUSI Robert	LCI	M				✓		0783890217	[signature]
6	Muyoba Rodgers	LI Buwala	M		✓				0779612669	[signature]
7	Wandwasi Kaleb	LI Bubitumu	M		✓				0788485127	Wandwasi
8	Wamelire Peter	ELDER NABBONGO Prs.	M					✓	0774670477	[signature]
9	WEKOYE PETER	BUMALENYA LCI	M		✓				0782713134	[signature]
10	mulonyi Hellen	parish chief	F			✓			07779513	[signature]

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: ....

Date: ....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
01	KAKAI BETTY	S/production	F				✓		0788228630	[signature]
02	WABYANGA ROBERT	LC II BUSHIENDE	M				✓		0782751861	[signature]
03	MWANIKHA GODFREY	FARMER	M					✓	0773633991	[signature]
04	Kutosi Micheal	LCI	M				✓		0771230013	[signature]
05	WALUKHU DAVID	FARMER	M				✓		0785053856	[signature]
06	AMURIA MARTHA	PARISH CHIEF	F		✓				0774136809	[signature]
07.	Mayeku michael	Councillor Busiu	M				✓		0773553370	[signature]
08.	MAUKA ROBERT ISAAH	LC II BUSAMALIRO	M			✓			0778552134	[signature]
09	NANDYEBI JOSEPHINE	FARMER	F		✓				0780125827	[signature]
10	KHAUKHA GODFREY	FARMER	M				✓		0780949236	[signature]

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: ....

Date: ....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
1.	Mundeya Moses	Famer Nabbogo	M			✓			0773104765	[illegible]
2.	Nakhaima Paul	Famer Nabbogo	M					✓	0778899464	[illegible]
3.	Simiyu Alex	Farmer Nabbogo	M		✓				0777693829	[illegible]
04	MATSANGA PETER	farmer	M				✓		0787788624	[illegible]
05	WANDA WAN SHIMIYU	Farmer Bukhulo	M		✓				0790979742	[illegible]
06	NABAYA DERICK	Farmer Simu	M		✓				0788595585	[illegible]
07	MASABA PETER	FARMER	M				✓		0779345255	[illegible]
08	MULOLOBI SOPHY	COUNCILLOR	F		✓				0781433375	[illegible]
09	KHABUYA SUZAN ZULAH	DEPUTY SPEAKER	F			✓			0781651999	[illegible]
10	NAKHIMITSA BARBRA	Bukhaliu Councillor	F		✓				0780990400	[illegible]

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: ....

Date: ....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
01	KHANIALA MOSES	AREA Councillor	M				✓		0763230351	[illegible]
02	WABUSHA Sam	AREA Councillor	M				✓		0773818067	[illegible]
	Wamayi Lydia	CPWC	F					✓	0774482394	[illegible]
04	MUSAMALI NATHAN	M. ELDER COUNCILLOR	M					✓	0781161048	[illegible]
05	WALUBE PATRICK	Councillor BUNAMBUTYE	M		✓				0770569264	[illegible]
06	KABAALE CHRISTO	GISO Representing	M	✓					0763454083	[illegible]
07	Welishe Nathan	LCI C/P	M				✓		0773817436	[illegible]
08	Wakhata Edward	Bumusomi	M			✓			0774121008	[illegible]
09	Nanjala Felistas	Eld councillor	F					✓	0774128097	Nanjala
	MAUKA Robert Wazus.	C/P LCIII	M					✓	0779730593	[illegible]

STRENGTHENING THE ADAPTIVE CAPACITY AND RESILIENCE OF COMMUNITIES IN UGANDA'S WATERSHEDS-AWOJA CATCHEMT (SACRiAC) PROJECT

Gender Form

Activity: .....

Date: .....

No.	Name	Designation	Gender	18-24	25-34	35-44	44-55	56+	Contact	Signature
01	MASABA P. NYOTE	LC II BUNAMBUYE	M				✓		0777146401	
02	WAKHASA GODFREY	Bunamalino Coller	M				✓		0779065724	
03	khalayi Joanina	elder coller	F					✓	0775183290	Khalayi
04	MUKANIKA FRANCIS	Elder Councillor	M					✓	0787754498	
05	NAMUNGOMA ANNET	COUNCILLOR	F			✓			0773503752	
06	KHAKASH JENNIPHER	Councillor	F				✓		0782004624	
07	WASIKE PAUL	PARISH CHIEF BUNAMBUYE PARISH	M			✓			0772318127	
08	WAMBOGO DAVID	parish chief Bunamalino	M			✓			0774397905	
09	KAMITI MARY	BUCOUNCILLOR BUSHIENDE	F				✓		0760300205	
10	WATELA ELINA	COUNCILLOR PWD BUKHALU	F				✓		0763632294	

8.2. Annex II: Definition of key terms

Ecological character: The combination of the ecosystem components, processes and benefits or services that characterize the wetland at a given point in time.

Ecological benefit and services: The benefits or services that people receive from ecosystems.

Ramsar site: Ramsar sites are wetlands of international importance. The international convention, which forms the basis for their identification, is the "Ramsar Convention" named after the city in Iran where the convention was signed in 1971. Uganda has 12 Ramsar sites, namely: Lake George, Lake Mburo-Nakivale Wetland System (LMP), Lake Bisina Wetland System (BSN), Lake Nakuwa Wetland System (NKW), Lake Opeta Wetland System (OPT), Lutembe Bay (LTB), Mabamba Bay Wetland System (MBB), Murchison Falls-Albert Delta Wetland System (MFP), Nabajjuzi Wetland System (NBJ), Sango Bay-Musambwa Island-Kagera Wetland System (SAMUKA), Rwenzori Mountain National Park (RNP) & Lake Nabugabo wetland system Ramsar site.

Stakeholder: Any individual, group, or institutions that has a vested interest in the Simu-Muyembe wetland and/or who potentially will be affected by activities within and have something to gain or lose if conditions change or stay the same.

Wetlands: Areas permanently or seasonally flooded by water where plants and animals have become adapted; and include swamps, dams, areas of marsh, peat land, mountain bogs, banks of rivers, vegetation, areas of impeded drainage, or blackish salt.

MINISTRY OF WATER AND ENVIRONMENT

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