



UNITED REPUBLIC OF TANZANIA  
MINISTRY OF NATURAL RESOURCES AND TOURISM

# CONSERVATION INVESTMENT PLAN FOR MARA WETLANDS



DECEMBER 2017



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IN PARTNERSHIP WITH



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## PREFACE

Located at the mouth of the Mara River in Tanzania in the districts of Butiama, Rorya, and Tarime, as well as Musoma Municipality, Mara Wetlands provides ecosystem services valued at USD 5 million a year. The investments proposed in the present Conservation Investment Plan (CIP) would help to ensure that Mara Wetlands ecosystem services continue to support livelihoods and economic opportunity into the future.

It is with great pressure that the Government of the United Republic of Tanzania presents the Mara Wetlands CIP, which is aimed at improving conservation and sustainable management of the Mara Wetland ecosystem for improved community livelihood and resilience to climate change.

The Mara Wetlands CIP was prepared with support from the United States Agency for International Development (USAID) through the "Planning for Resilience in East Africa through Policy, Adaptation, Research, and Economic Development (PREPARED)" Project. PREPARED works in partnership with the Lake Victoria Basin Commission (LVBC), the East African Community, and partner states. In 2016, the LVBC Biodiversity Task Force issued a directive for CIPs to be developed in biologically significant areas of the Lake Victoria Basin. The framework and content of the CIPs were developed at a regional expert meeting held in February 2016 in Nairobi, Kenya, which was attended by staff from partner government institutions in Burundi, Kenya, Rwanda and Uganda, a representative from the LVBC, as well as PREPARED and LTS-Africa project staff and consultants. The Mara Wetlands CIP was prepared through a consultative process. Through a series of multi-stakeholder meetings on conservation activities and needs in Mara Wetlands, the views of stakeholders who manage, depend upon, and impact the Mara Wetlands and resources were gathered, prioritized, and organized. These meetings involved representatives from district councils, local communities, the LVBC, Vice President's Office, Regional Administrative Secretary's office, Ministry of Natural Resources and Tourism, Tanzania Forests Service, Serengeti National Park and representatives of water users' association from Mara Wetland Ecosystem.

The Mara Wetlands CIP was developed to support the delivery of the implementation framework laid out in the recently-completed 2017/18 - 2021/22 Mara Wetlands Integrated Management Plan. The Management Plan was developed through a consultative process involving local and national government agencies, wetland communities, non-governmental and civil society organizations, the private sector, research and academic institutions. The CIP structures the Management Plan program of work and activities into coherent, costed investment packages, for which it seeks to attract new investors and to mobilize additional funding flows. It is targeted at donors, investors, the Government of the United Republic of Tanzania and government agencies who have an interest in biodiversity and ecosystem conservation in the Mara Wetlands, particularly those who seek to support the implementation of the new Management Plan.

The Mara Wetlands CIP is an important document to the Government of United Republic of Tanzania. It provides an avenue to help conserve threatened species of terrestrial and semi-aquatic mammals, fish species, birds, and plant families in Mara Wetlands. It will also allow us to maintain wetland functions and values; and to integrate wetland concerns into planning and decision making. The Government of United Republic of Tanzania is fully committed to the implementation of the plan. It is my expectation that potential donors, investors, and government partners will be able to narrow in on specific projects outlined in the CIP, according to their particular interests, mandates and budget availability.

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## ACRONYMS AND ABBREVIATIONS

<b>CBO</b>	Community-Based Organization
<b>CIP</b>	Conservation Investment Plan
<b>CSA</b>	Climate-Smart Agriculture
<b>DED</b>	District Executive Director
<b>DEMC</b>	District Environmental Management Committee
<b>DESD</b>	District Environment and Sanitation Department
<b>DHO</b>	District Health Office
<b>DLNRO</b>	District Land and Natural Resource Office
<b>DOA</b>	Department of Agriculture
<b>DOE</b>	Division of Environment
<b>EAC</b>	East African Community
<b>EbA</b>	Ecosystem-Based Adaptation
<b>ESRF</b>	Economic and Social Research Foundation
<b>IBA</b>	Important Bird and Biodiversity Area
<b>IP</b>	Investment package
<b>Km</b>	Kilometer
<b>LGA</b>	Local Government Authority
<b>LVBC</b>	Lake Victoria Basin Commission
<b>LVBWB</b>	Lake Victoria Basin Water Board
<b>LVESNET</b>	Lake Victoria Ecosystem Sustainability Network
<b>MAFC</b>	Ministry of Agriculture Food Security and Cooperatives
<b>ME</b>	Ministry of Energy
<b>MHCDGCE</b>	Ministry of Health, Community Development, Gender, Children and Elderly
<b>MLF</b>	Ministry of Livestock and Fisheries
<b>MLHSD</b>	Ministry of Lands, Housing and Human Settlements Developments
<b>MNRT</b>	Ministry of Natural Resources and Tourism
<b>MoF</b>	Ministry of Finance
<b>MoFA</b>	Ministry of Foreign Affairs
<b>MoIYCS</b>	Ministry of Information, Youth, Culture and Sports
<b>MoWI</b>	Ministry of Water and Irrigation
<b>NBI</b>	Nile Basin Initiative
<b>NELSAP</b>	Nile Equatorial Lakes Subsidiary Action Programme
<b>NEMC</b>	National Environment Management Council
<b>NGO</b>	Nongovernmental Organization
<b>Nile-Eco-VWU</b>	Nile Ecosystems Wetlands Valuation and Wise Use
<b>NLUPC</b>	National Land Use Planning Commission
<b>PO-RALG</b>	President's Office – Regional Administration and Local Government
<b>PREPARED</b>	Planning for Resilience in East Africa through Policy, Adaptation, Research and Economic Development

<b>RAS</b>	Regional Administrative Secretary
<b>SLM</b>	Sustainable Land Management
<b>TAREA</b>	Tanzania Renewable Energy Association
<b>TAWA</b>	Tanzania Wildlife Authority
<b>TFS</b>	Tanzania Forest Service
<b>TMA</b>	Tanzania Mineral Agency
<b>TTB</b>	Tanzania Tourism Board
<b>TZS</b>	Tanzania Shilling (at the time of writing the report, TZS 1 =
<b>USAID</b>	United States Agency for International Development
<b>USD</b>	US Dollar (at the time of writing the report, USD 1 = TZS 2,250)
<b>VIFAFIO</b>	Victoria Farming and Fishing Organization
<b>VPO-E</b>	Vice President's Office – Environment
<b>WUA</b>	Water Users Association
<b>WWF</b>	World Wildlife Fund

## SUMMARY OF THE MARA WETLANDS CONSERVATION INVESTMENT PLAN

This Conservation Investment Plan (CIP) brings together needs and priorities of the various sectors, organizations, and interest groups that manage, depend on, or impact in some way the natural resources of the Mara Wetlands. It presents an integrated set of activities united under the common goal of [improved conservation and sustainable management of the Mara Wetlands ecosystem for improved community livelihoods and resilience to climate change](#). A wide range of partners worked together to develop the CIP and will be involved in delivering it, including both central and local government agencies, nongovernmental organizations (NGOs), and civil society, as well as local community members.

This document targets potential donors and investors in wetland conservation. It has three main purposes. First, it offers a [value proposition](#) that outlines returns from investing in biodiversity and ecosystem conservation in the Mara Wetlands. Second, it outlines a [strategic plan](#) identifying and integrating the most critical conservation funding priorities. Finally, the CIP also serves as a [marketing tool](#) for mobilizing new conservation funding flows.

The CIP harmonizes and brings together the various conservation strategies and plans developed for the Mara Wetlands landscape. [It specifically seeks to secure funding for implementation of the recently developed five-year Mara Wetlands Integrated Management Plan](#). The CIP structures the conservation priorities laid out in the management plan into coherent, consolidated, costed sets of mutually reinforcing projects. It offers four bankable investment packages (IP) costing Tanzania shillings (TZS) 10.44 billion or U.S. dollars (USD) 4.64 million over five years, as follows:

- IP#1: [Wetland wise use and sustainable management](#).** To restore, rehabilitate, and conserve wetland biodiversity and ecosystem services. This consists of five projects at combined cost of TZS 2.2 billion or USD 990,000.
- IP#2: [Conservation awareness, capacity, and governance](#).** To build effective, inclusive, and sustainable systems for wetland management and use. This consists of three projects at combined cost of TZS 0.5 billion or USD 230,000.
- IP#3: [Sustainable and climate-resilient local livelihoods](#).** To strengthen local economic prospects and reduce pressure on wetland resources. This consists of seven projects at combined cost of TZS 2.1 billion or USD 960,000.
- IP#4: [Community water, sanitation, and hygiene](#).** To improve water quality and sustain a healthy wetland-adjacent population. This consists of four projects at combined cost of TZS 5.6 billion or USD 2.46 million.

**GOAL** improved conservation and sustainable management of the Mara Wetlands ecosystem for improved community livelihoods and resilience to climate change

Investment Package 1	Investment Package 2	Investment Package 3	Investment Package 4
Wetland wise use and sustainable management	Conservation awareness, capacity and governance	Sustainable and climate-resilient local livelihoods	Community water, sanitation and hygiene
to restore, rehabilitate and conserve wetland biodiversity and ecosystem services	to build effective, inclusive and sustainable systems for wetland management and use	to strengthen local economic prospects and reduce pressure on wetland resources	to improve water quality and sustain a healthy wetland-adjacent population
Developing village-level integrated land use plans	Fostering sectoral, spatial & stakeholder cooperation in integrated wetland management	Supporting agroforestry & tree-based businesses	Securing clean domestic water supplies
Restoring & rehabilitating degraded landscapes	Enhancing institutional capacity & accountability to address wetland conservation and climate issues	Developing sustainable fish farming & capture fisheries	Planning & establishing solid waste disposal and collection points
Managing threats to key wetland species & habitats	Raising community awareness, support and engagement for wetland conservation & wise use	Enhancing beekeeping techniques & markets	Developing improved sanitation & hygiene practices and facilities
Mainstreaming ecosystem-based adaptation measures		Expanding ecotourism for community livelihoods	Building capacity & know-how among village health workers
Strengthening sustainable livestock & pasture management		Adding value to climate-smart agriculture	
		Promoting energy saving practices & technologies	
		Addressing local vulnerabilities to climate change & disaster risk	

# **PART I:**

## **BACKGROUND & RATIONALE**

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## 1.1 MARA WETLANDS CONSERVATION CONTEXT

The Mara Wetlands are located in the lower (southwest) portion of the Mara River Basin, running a length of approximately 55 kilometers (km) down to the outflow into Lake Victoria. The wetland complex covers an area of around 390 km<sup>2</sup>. According to the Mara Wetlands Integrated Management Plan 2017/2018-2021/2022, it spans Butiama, Rorya, Serengeti, and Tarime districts of the Mara region. Although it has no formal protected status, the Mara Wetlands has been designated as part of the worldwide network of “Important Bird and Biodiversity Areas” (IBAs) in recognition of its global biodiversity significance. Mara Bay and Masirori Swamp IBA covers an area of 500 km<sup>2</sup>.

The wetland system includes floodplain grassland, woodland, swamp, and open water, of which just under half is permanently inundated. It is said to be one of the largest remaining tracts of papyrus swamp in sub-Saharan Africa. Dryland areas contain a mosaic of mixed woodland and shrub land, interspersed with crops and pasture. The extent and composition of the wetland varies on a seasonal basis and over time. The inundated area expands and contracts each year in line with the two rainy seasons (September-December and March-June). Over the last 30 years, the wetland has more than doubled in size, into areas previously occupied by shrub land and grassland.



**Figure 1. Location of Mara Wetlands in the Mara River Basin**

The landscape hosts a rich array of fauna and flora. More than 20 plant families are found in the wetlands, which are dominated by papyrus (*Cyperus papyrus*), typha (*Typha domingensis*), and common reed (*Phragmites australis*). A wide variety of mammals is permanently or seasonally resident, including hippopotamus (*Hippopotamus amphibious*), sitatunga (*Tragelaphus spekii*), olive baboon (*Papio anubis*), and vervet monkey (*Cercopithecus aethiops*). A population of Nile crocodiles (*Crocodilus niloticus*) also inhabits the swamp and rivers. Some 226 bird species have been recorded, including the endangered Grey-crowned Crane (*Balearica regulorum*) and Grey Parrot (*Psittacus erithacus*) and the vulnerable Shoebill (*Balaeniceps rex*), Woolly necked Stork (*Ciconia episcopus*), Martial Eagle (*Polemaetus bellicosus*), and Papyrus yellow warbler (*Calamonastides gracilirostris*). The wetland hosts 14 species of fish, of which the catfish (*Clarias sp.*), African lung fish (*Protopterus sp.*), and Nile tilapia (*Oreochromis nilotica*) are important for local fisheries production.

The natural ecosystem plays a critical hydrological role, regulating the quality and flow of water into Lake Victoria. As well as serving as a groundwater recharge zone, swamps and flooded grasslands retain water and slow down flow, thereby helping to maintain water supplies throughout the dry season and minimize flooding in the wet season. They also provide nutrient cycling and water purification functions, trapping silts and sediments, and absorbing and processing nitrogen and phosphorus loads from surrounding (and upstream) settlements and farms. Woodlands, grasslands, and swamp vegetation also contribute importantly to carbon sequestration and storage. Although as yet undeveloped, the wetland landscape hosts a small amount of tourism, mainly linked to birdwatching, wildlife viewing, and local cultural experiences.

The Mara Wetlands Integrated Management Plan lists 20 villages that surround the Mara Wetlands; applying population figures and growth rates specified in the 2012 Population and Housing Census, these contain around 64,000 people or 10,000 households. Community livelihoods are based on smallholder farming and fishing, and most people also depend heavily on wetland products for their economic survival and well-being. Woodlands, wetlands, and grasslands provide a source of water, fish, fuel, construction materials, fodder, medicinal plants, honey, wild foods, and raw materials for making crafts. These goods and services are particularly important, given the high incidence of rural poverty, scarcity of potable water, and persistent food deficits within the wetland-adjacent area. In addition to yielding an affordable and accessible source of products for subsistence and income, seasonally flooded parts of the wetland provide fertile soils for crop farming and livestock pasture.

Although the wetlands have no formal protection status, their use and management is regulated under law, and is guided by the National Sustainable Wetlands Management Strategy under the National Wildlife Policy of 2007. A wide variety of government line agencies have mandates that touch on sustainable wetland management, working at the local level under the Mara Regional Administrative Secretariat; and Butiama, Rorya, Serengeti, and Tarime districts' local government and village councils in the wetland-adjacent area. Key partners include the President's Office – Regional Administration and Local Government (PO-RALG); Vice President's Office – Environment (VPO-E); Lake Victoria Basin Water Board (LVBWB); Tanzania Forest Service (TFS); Tanzania Wildlife Authority (TAWA); the Ministry of Natural Resources and Tourism (MNRT); the Ministry of Agriculture, Food Security and Cooperatives (MAFC); Ministry of Livestock and Fisheries (MLF); Ministry of Health, Community Development, Gender, Children and Elderly (MHCDGCE); Ministry of Water and Irrigation (MoWI); Ministry of Lands, Housing and Human Settlements Developments (MLHSD); and the National Environment Management Council (NEMC). In addition, a broad array of nongovernmental organizations (NGO), civil society, and community-based and private sector stakeholders collaborate in wetland conservation.

A number of efforts to promote transboundary, integrated river basin management in the Mara Basin have occurred, mainly under the auspices of Lake Victoria Basin Commission (LVBC) and East African Community (EAC) and associated regional and national bodies. The Mara River Transboundary Water Users Forum was convened in 2008 by LVBC and the World Wildlife Fund (WWF) as a platform for dialogue and collaboration, according to an agreed constitution and work plan. Both a Water Allocation Plan (2013) and Integrated Natural Resources Management Plan (2016-2026) have been developed under the coordination of LVBC and EAC. The Nile Equatorial Lakes Subsidiary Action Programme (NELSAP) of the Nile Basin Initiative (NBI) published a Mara River Basin Investment Strategy in 2008 to promote environmentally sustainable, socioeconomic development and address critical water resources issues and challenges.

In addition to and in combination with the activities coordinated by national governments, EAC, and LVBC, a variety of internationally funded projects, programs, and organizations have worked on biodiversity and natural resource conservation in the Mara Basin over recent years. While their focus has usually been on upper and middle reaches of the basin (particularly the Mau catchment forests in Kenya and the transboundary Mara-Serengeti conservation landscape), some have included activities in and around the Mara Wetlands. For example, the Nile Ecosystems Wetlands Valuation and Wise Use (Nile-Eco-VWU) research project, funded by the CGIAR Water, Land, and Ecosystems Programme, includes the Mara Wetlands as one of its pilot sites. The United States Agency for International Development (USAID)-funded Transboundary Water for Biodiversity and Human Health in the Mara River Basin was implemented between 2005 and 2012, and included support for water supply and sanitation activities in Serengeti District (through CARE Tanzania).

USAID is also funding the Policy Adaptation, Research, and Economic Development (PREPARED) project, implemented in partnership with LVBC and EAC. This includes support for development of the Integrated

Management Plan for the Mara Wetlands, facilitated by Birdlife International. Birdlife International is also undertaking activities in Mara Bay and Masirori Swamp under the Sustainable Use of Critical Wetlands in Lake Victoria Basin project funded by the MacArthur Foundation. WWF Tanzania, too, has implemented a series of projects in the Mara River Basin over the last two decades that have included the wetlands area, including work to support water resources user associations and developments of a Mara River Basin Biodiversity Action Plan and Environmental Flows Plan (approved by the Lake Victoria Basin Council of Ministers in 2009).

## **I.2 OPPORTUNITIES, THREATS, AND CHALLENGES**

Despite their ecological, biological, and socioeconomic importance, the Mara Wetlands have come under increasing pressure and are starting to show signs of stress. In particular, the escalating resource demands of a rapidly growing human population have led to overexploitation of forest and wetland products such as fuelwood, timber, construction materials, fish, and bushmeat. As land pressure intensifies, wetland habitats are also undergoing progressive modification, conversion, and degradation. Agricultural encroachment is a recurrent problem; the current estimate is more than 100 km<sup>2</sup> of the wetlands under crops, an area expanding rapidly every year. Overgrazing impacts grasslands, as well as uncontrolled burning to create better pasture.

Land use in the upstream area also exerts a strong influence over the wetland status, which depends on quality, timing, and flow of water from the Mara River. Upper catchment degradation and deforestation, coupled with agricultural intensification and expanding human settlement, have led to increased silt, sediments, nutrients, and pollution loads reaching the lower basin. Meanwhile, water extraction for irrigation, energy, industrial, and domestic supplies has reduced the flow of water into the wetland and interfered with biannual flooding patterns. At least four new dams (mainly for irrigation and hydropower) are planned in the middle and upper reaches of the Mara River, and an inter-basin transfer scheme has been proposed between the Amala River and the South Ewaso Ngiro in Kenya.

Climate change, too, poses a major challenge and threat to the Mara Wetlands. Weather patterns are likely to become more unpredictable, and changes are expected in the timing of rainy and dry seasons. Moreover, rainfall intensity is projected to increase, resulting in more frequent floods and associated peaks in river flow, siltation, and sedimentation processes. Both natural and human systems are already under stress, and lack resilience to cope with these effects.

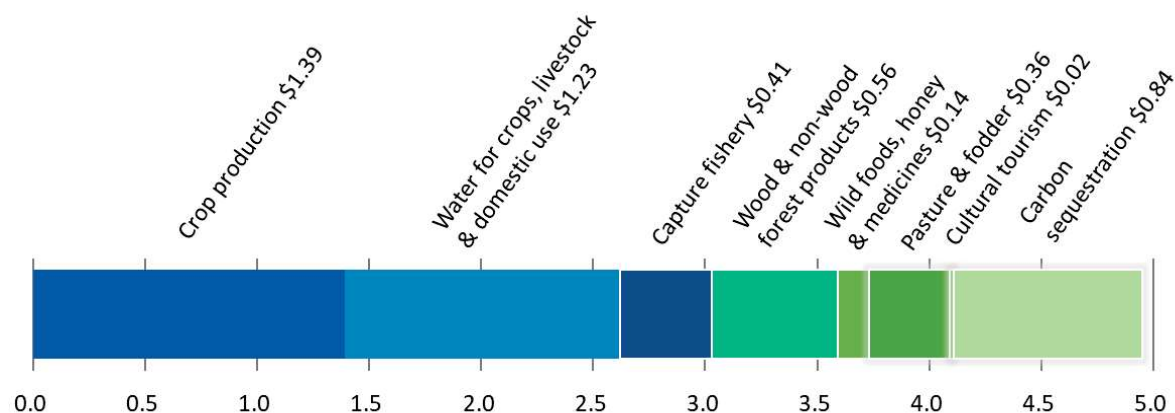
The broad array of government, community, civil society, and private sector stakeholders that use, depend on, and manage the land and resources of the Mara Wetlands constitute a powerful positive force for conservation. Many are working to promote sustainable ecosystem management. Recognizing that the underlying threats or root causes of and potential solutions to ecosystem degradation are largely socioeconomic, these efforts have an associated concern with establishing conditions whereby wetland users and managers are both empowered and encouraged to conserve natural resources in the course of their economic activities.

These stakeholders and their activities offer great potential and opportunities. The recently developed Integrated Management Plan brings together the most urgent conservation and sustainable development needs and priorities into a single document. As explained below, the design of the CIP is to support and strengthen implementation of the management plan. Consultations during development of the management plan indicated strong political will and momentum at central and local government levels, which will also strengthen implementation of the CIP.

## **I.3 THE BUSINESS CASE FOR ECOSYSTEM CONSERVATION AND WISE USE**

The wild species and natural habitats of the Mara Wetlands contribute substantially to local, national, and even global economies. They provide sources of subsistence and income critical to local livelihoods. A recent study found that wetland products are worth an average of USD 525 a year for adjacent households (equivalent to around a third of household income). In addition, wetlands, grasslands, woodlands, and other natural habitats provide important services that protect and safeguard human settlements and production processes in Butiama, Rorya, Serengeti, and Tarime districts; other parts of the Mara region; and beyond. Just one of these services, carbon storage and sequestration has a value of around USD 840,000 a year or more than USD 2,150 per km<sup>2</sup> of wetland area.

In total, the economic value of goods and services associated with the natural ecosystems of the Mara Wetlands has been calculated at approximately USD 5 million a year.



Based on: Gichere, S. (2016) *Economic valuation of the Mara Wetlands Report to the PREPARED Project by LTS-Africa, Nairobi.*

**Figure 2. Partial economic value of selected Mara Wetlands ecosystem services (US \$million/year)**

These enormous economic values cannot (and should not) be ignored. They underline the fact that biodiversity and ecosystems in the Mara Wetlands are far more than a static repository of biological and ecological artefacts. Rather, they offer a productive and lucrative source of natural capital and development infrastructure, which, if used wisely and managed sustainably, will continue to generate streams of benefits into the future. Clearly, huge economic and development returns spread across many different sectors and stakeholder groups are to be gained from investing in the biodiversity and ecosystems of the Mara Wetlands. Conversely, a failure to invest adequately in wetland conservation and wise use runs the risk not just of undermining local livelihoods and development processes, but also of incurring considerable economic costs and losses across and beyond Tanzania, including transboundary effects arising from changes in Lake Victoria’s biodiversity, water flow, and water quality.

## I.4 WHAT THE CIP SEEKS TO FUND – THE MARA WETLANDS INTEGRATED MANAGEMENT PLAN

It is important to emphasize that the CIP is designed to harmonize, integrate, and enhance implementation of existing conservation and development strategies and plans already developed in Butiama, Rorya, Serengeti, and Tarime Districts, and at national and regional levels. As stated above, numerous government, community, civil society, and private sector stakeholders are working to strengthen wetlands wise use and sustainable management within the Mara Wetlands landscape.

Despite such good efforts, most agencies and organizations working in the Mara Wetlands face a critical shortage of funding. As a result, urgent conservation and development actions remain unfunded. The projects in the CIP target these unmet funding needs. Intent is to leverage additional resources required to cover financial shortfalls in existing programs, strategies, and plans.

In particular, the CIP has been designed to support delivery of the implementation framework laid out in the recently completed Mara Wetlands Integrated Management Plan for 2017/18 to 2021/22. This was developed through a multi-stakeholder consultative process that brought together local and national government agencies, wetland communities, NGOs and civil society organizations (CSOs), the private sector, and research and academic institutions. The management plan is based on a vision of “a well conserved Mara River Wetland, managed sustainably for people and nature,” and is guided by five programs and objectives aiming to promote ecosystem restoration and sustainable management; increase resilience to climate change; enhance application of “wise use” concepts; strengthen governance; build conservation awareness and capacity; encourage sustainable alternative livelihoods; and support community-based water, sanitation, and hygiene management. The CIP structures management plan activities into coherent, costed investment packages (IPs) for which it seeks to attract new investors and to mobilize additional funding flows.

The focus of the CIP is on operational costs of carrying out essential biodiversity and ecosystem conservation and associated sustainable development activities. It does not seek to raise funds to cover core costs of maintaining institutions mandated to coordinate and deliver conservation and sustainable development in the Mara Region or in Butiama, Rorya, Serengeti, and Tarime districts. These budgets are already in place, and along with the programs underway, provide counterpart contributions to the projects laid out in the IPs. Financing needs outlined in the CIP are intended to supplement, not to replace or subsidize, existing institutional, program, and project funding.

Importantly, the CIP is also consistent with and directly supports Tanzania's key global commitments regarding conservation and development. It has been designed for consistency with the ecosystem approach and the three interlinked goals of conservation, sustainable use, and equitable benefit sharing embodied in the Convention on Biological Diversity; moreover, the CIP seeks to operationalize the wise use principles specified in the Ramsar Convention on Wetlands of International Importance. In addition, CIP activities are of immediate relevance to the United Nations Framework Convention on Climate Change and Kyoto Protocol, in that these serve to strengthen both human and natural resilience and adaptive capacity, as well as to mitigate effects of global climate change. Along with emphases on biodiversity and ecosystem conservation, sustainable development, and green growth, CIP projects include provisions to reduce poverty, achieve gender equity, and empower the most vulnerable and marginal groups. The CIP is therefore a key instrument to help meet the agenda of Sustainable Development Goals to end poverty, protect the planet, and ensure prosperity for all.

## **I.5 HOW THE CIP IS INTENDED TO BE USED**

The CIP is targeted at donors and investors interested in biodiversity and ecosystem conservation in the Mara Wetlands and Butiama, Rorya, Serengeti, and Tarime districts—particularly those seeking to support implementation of the Integrated Management Plan. It presents four bankable IPs, each of which consists of three to six projects. A one-page summary of each project describes the need for action, outlines its scope and content, lists indicative activities, elaborates intended results and beneficiaries, and specifies focal agencies and other partners to be involved in delivering it.

These summaries should enable each potential donor to narrow in on specific projects according to the donor's particular interests, mandates, and budget availability. Use of the specified focal agencies as initial points of contact can facilitate translation of broad concepts conveyed in the CIP into more detailed proposals, according to the focus and format required by the funder.

## **I.6 HOW THE CIP WAS DEVELOPED**

The CIP was developed with the active participation of stakeholders who manage, depend on, and impact Mara Wetlands land and resources (and would lead implementation of the projects). This involved a series of multi-stakeholder meetings to discuss conservation activities, identify and prioritize unmet funding needs, and validate the resulting CIP. LVBC convened the meetings in partnership with the PREPARED project, MNRT, the offices of the Mara and Kagera Regional Administrative Secretary (RAS), as well as Butiama, Rorya, Serengeti, and Tarime district councils, which participated as key stakeholders. The meetings were also attended by staff from other government line agencies and local authorities, regional bodies, representatives from NGOs and CSOs, and wetland-adjacent communities.

The CIP proposes an approximate budget. Each project was costed based on levels of input and expenditures required for similar projects under implementation in Butiama, Rorya, Serengeti, and Tarime districts. Participants in the planning workshop (i.e., government agencies and NGOs involved in conservation and development activities in and around the Mara Wetlands) calculated these budget estimates based on their own experiences of project implementation and local prices. Most activities included in the CIP are based on recent-costed work plans and proposals (for example, those laid out in the management plan), or seek to scale up existing pilot activities. Notably, figures presented in the CIP are approximate, indicative estimates. The aim is to indicate broad funding needs for each project, IP, and the CIP overall. Detailed budgets will be prepared as complete proposals of projects are developed.

# PART 2:

## INVESTMENT STRATEGY

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## 2.1 GOALS AND INTENDED OUTCOMES

Activities described in the CIP contribute toward a common goal of improved conservation and sustainable management of the Mara Wetlands ecosystem for improved community livelihoods and resilience to climate change. These are founded on the premise that the living environment should be treated as a valuable source of “natural capital” that drives development in Butiama, Rorya, Serengeti, and Tarime districts; Mara region; Tanzania; and beyond. However, to realize this aim, biodiversity and ecosystems must be managed sustainably and used wisely. This requires investment of sufficient funds in their upkeep, maintenance, and improvement over time.

To these ends, four IPs have been identified that target the most pressing conservation needs within the Mara Wetlands landscape and the most urgent shortfalls in existing financing flows. These seek to engage and empower local actors to work together to secure environmental and economic benefits.

The first IP is concerned with wetland wise use and sustainable management. It will work to restore, rehabilitate and conserve wetland biodiversity and ecosystem services through partnerships with the local community.

The second IP is directed at strengthening conservation awareness, capacity, and governance to build effective, inclusive, and sustainable systems for wetland management and use. Achievement of this is anticipated by building strong platforms for planning and action that foster cooperation among the different sectors, agencies, and stakeholder groups that manage, depend on, and impact the wetland ecosystem.

The third IP focuses on sustainable and climate-resilient local livelihoods to strengthen local economic prospects and reduce pressure on wetland resources. Specifically, it would empower local communities to directly participate in and benefit from conservation by (1) providing alternatives to environmentally damaging sources of production and consumption, and (2) adding value to conservation-based markets and business opportunities.

The fourth IP deals with community water, sanitation and hygiene, seeking to improve water quality and sustain a healthy wetland-adjacent population. It combines provision of more accessible, effective facilities for waste management, water supply, and sanitation with induced awareness, capacity building, and community mobilization.

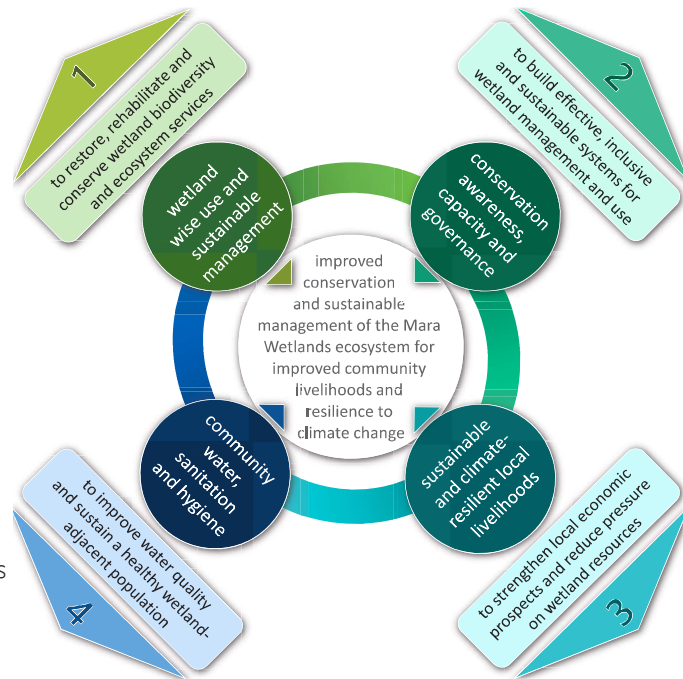


Figure 3. CIP goals and investment packages

## 2.2 GUIDING PRINCIPLES AND CROSSCUTTING THEMES

A number of guiding principles and crosscutting themes run throughout the CIP. These embody the values of participating institutions, and reflect the common factors widely believed to constitute best practices in ecosystem conservation.

The CIP focuses on actions to secure ecosystem services. These services are the benefits that humans obtain from nature (Millennium Ecosystem Assessment, 2005). They range from raw materials and physical products used as inputs or consumed directly (i.e., timber, fish, and fibers), through processes and functions that support and protect human settlements and production processes (i.e., those that uphold water quality and supplies, regulate floods and droughts, maintain soil fertility, sustain fisheries productivity, or help people mitigate and adapt to the effects of climate change), to cultural and non-material attributes (i.e., recreational, aesthetic, spiritual, and heritage benefits). As such, ecosystem services underpin human economic activity.

Ecosystem services also ensure resilience in the face of stress and change, and safeguard prospects for future growth. Actions to address climate change are a particularly integral part of the CIP, mainstreamed within all its IPs. These include decreasing vulnerability of natural and human systems to climate change and disaster risk, enhancing mitigation, and promoting ecosystem-based adaptation measures that will strengthen local livelihoods, sustain key services, and protect settlements and production within the Mara Wetlands landscape.

The CIP is based on the recognition that human well-being and economic activities both depend on and impact ecosystem services. The CIP seeks to manage these dependencies and impacts by applying wise use<sup>1</sup> principles within an overall framework of biodiversity conservation, sustainable use, and equitable benefit sharing; and by following the ecosystem approach.<sup>2</sup> Unlike traditional approaches to ecosystem management (based largely on protecting the environment by excluding human uses and users), these conservation approaches (1) necessitate understanding that people are an integral part of the natural environment, and (2) are to be implemented within the context of equitable and sustainable development. In the same vein, wise use focuses on conservation and sustainable use of wetlands and all services wetlands provide for benefit of people and nature.

Following from this is recognition that people will be economically willing and able to conserve wetlands, and will be able to capture considerable economic gains and business opportunities in doing so, only by establishing conditions under which biodiversity and ecosystems are perceived to be worth more if maintained than if degraded, depleted, or converted. To these ends, most CIP projects include activities designed to create adequate, appropriate, and sustainable conservation incentives and financing mechanisms for ecosystem managers and users.

Having been developed in an integrated and participatory manner, the CIP aims to foster integration and cooperation among different stakeholder groups—with particular emphasis on ensuring engagement of (and fair and equitable benefits to) the most vulnerable and marginal groups in society who often lack a “voice” in conservation and development processes. The CIP also acknowledges that achieving conservation, wise use, and sustainable development will occur only by working across interest groups, sectors, and levels of scale. Community participation, private sector involvement, cross-sectoral coordination, gender equity, and social inclusion are recurrent themes, and are incorporated into the design and delivery of project activities.

## 2.3 COORDINATION AND DELIVERY MECHANISMS

In line with the principles of coordination and inclusion outlined above, the CIP was developed with the active participation of governmental, nongovernmental, civil society, and community stakeholders at local, national, and regional levels. Each project outlined in the CIP integrates priorities of several agencies, organizations, and stakeholder groups into consolidated bundles of activities designed for collaborative implementation.

The RAS office is the overall lead and custodian of the CIP (and the management plan it seeks to fund). The focal agency from central and/or local government specified for each project will be the main coordinating institution for that set of activities and the initial contact point for follow up, but will not necessarily be the agency assuming the principal role in project development and implementation. A wide variety of other partners are listed, one or more of which may also be nominated to lead detailed planning of a project. Specific roles and responsibilities of each listed partner (and of some organizations and groups) will be identified during detailed proposal development.

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1 As defined in the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971, as amended 1982 and 1987.

2 As defined in the Convention on Biological Diversity 1992.

# PART 3:

## INVESTMENT PACKAGES

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## OVERVIEW

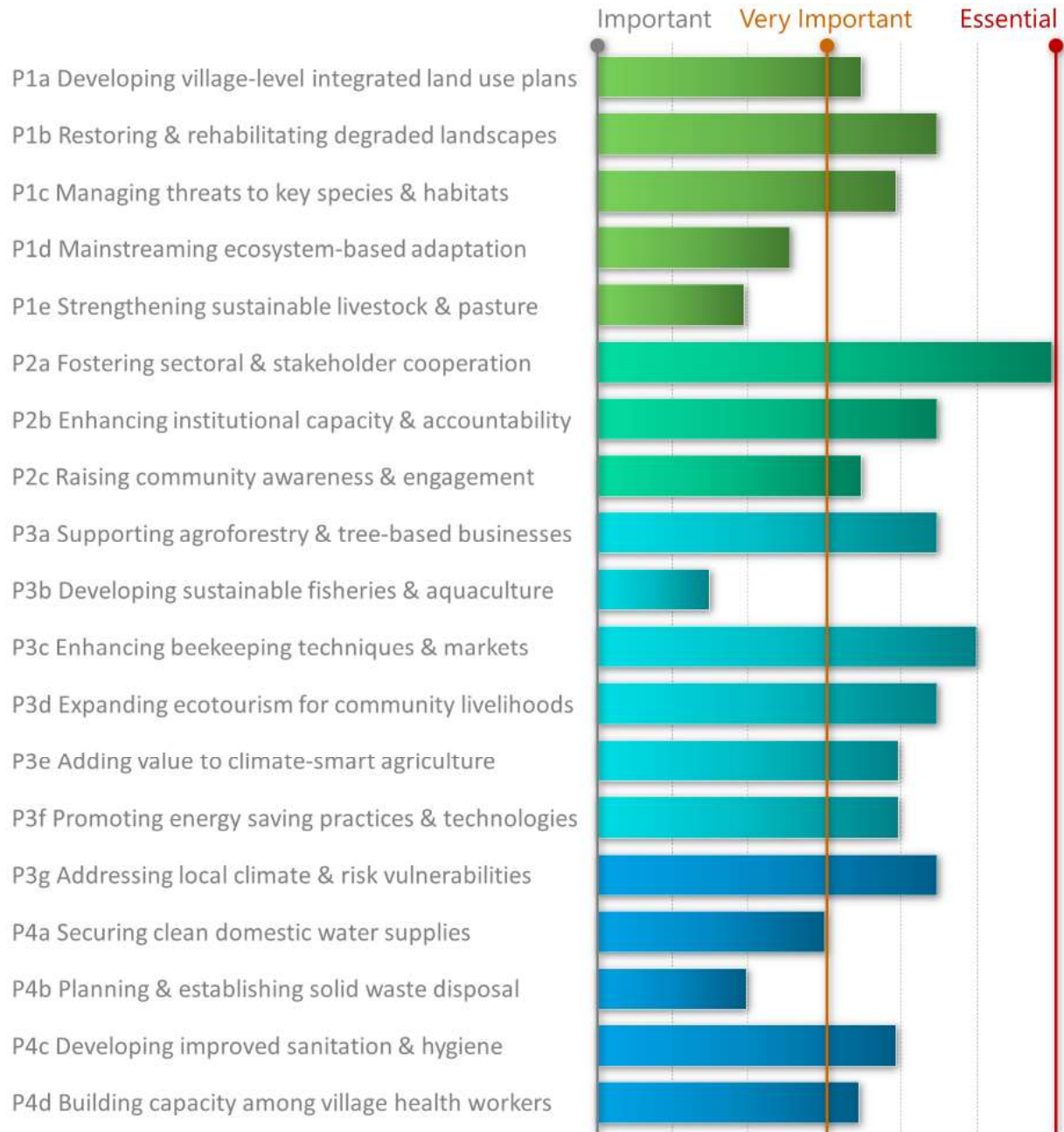
The CIP comprises 19 projects, grouped into four IPs. It covers a timeframe of five years, with a total cost of TZS 10.44 billion or USD 4.64 million.

IP#1	P1a	Developing village-level integrated land use plans	TZS 440 mill	USD 200,000
Wetland wise use and sustainable management	P1b	Restoring & rehabilitating degraded landscapes	TZS 550 mill	USD 250,000
	P1c	Managing threats to key wetland species & habitats	TZS 660 mill	USD 300,000
	P1d	Mainstreaming ecosystem-based adaptation measures	TZS 230 mill	USD 100,000
	P1e	Strengthening sustainable livestock & pasture management	TZS 320 mill	USD 150,000
	IP#2	P2a	Fostering sectoral, spatial & stakeholder cooperation in integrated wetland management	TZS 160 mill
Conservation awareness, capacity and governance	P2b	Enhancing institutional capacity & accountability to address wetland conservation and climate	TZS 290 mill	USD 130,000
	P2c	Raising community awareness, support and engagement for wetland conservation & wise use	TZS 70 mill	USD 30,000
IP#3	P3a	Supporting agroforestry & tree-based businesses	TZS 240 mill	USD 110,000
Sustainable and climate-resilient local livelihoods	P3b	Developing sustainable fish farming & capture fisheries	TZS 280 mill	USD 120,000
	P3c	Enhancing beekeeping techniques & markets	TZS 160 mill	USD 70,000
	P3d	Expanding ecotourism for community livelihoods	TZS 440 mill	USD 200,000
	P3e	Adding value to climate-smart agriculture	TZS 250 mill	USD 110,000
	P3f	Promoting energy saving practices & technologies	TZS 270 mill	USD 120,000
	P3g	Addressing local vulnerabilities to climate change & disaster risk	TZS 500 mill	USD 230,000
	IP#4	P4a	Securing clean domestic water supplies	TZS 3.1 bill
Community water, sanitation and hygiene	P4b	Planning & establishing solid waste disposal and collection points	TZS 1.1 bill	USD 490,000
	P4c	Developing improved sanitation & hygiene practices and facilities	TZS 1.3 bill	USD 560,000
	P4d	Building capacity & know-how among village health workers	TZS 80 mill	USD 40,000

Figure 4. Summary of investment packages, projects, and costs

## PRIORITIZATION

The projects were prioritized by stakeholders according to perceived level of importance. A consolidated score was then assigned to each project, reflecting its perceived priority and urgency.



**Figure 5. Ranking of projects according to priority**

### 3.1 INVESTMENT PACKAGE I:

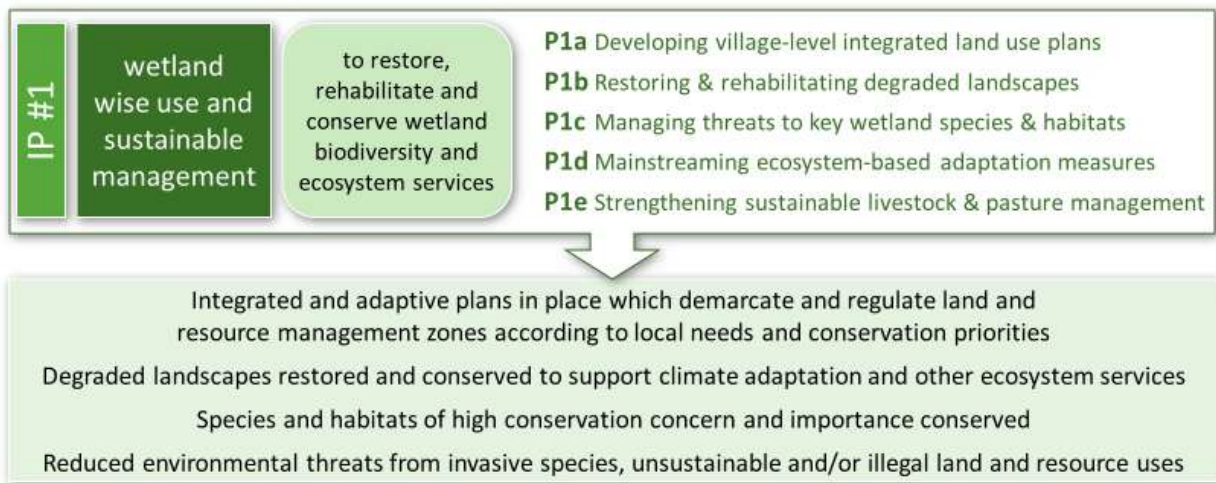
#### Wetland Wise Use and Sustainable Management

The biodiversity and ecosystem services of the Mara Wetlands are significant for conservation at local, national, regional, and global levels. Many natural resources in the landscape contribute significantly to local livelihoods and support production in other sectors such as agriculture, fisheries, water supply, energy, and tourism. Moreover, ecosystem services of forests, wetlands, and grasslands help maintain clean air and water, and minimize risk and impacts of floods, landslides, and other natural disasters. These services are becoming ever more important as human populations increase, land and resource demands intensify, and climate change places additional stresses on natural and human systems.

Unfortunately, this valuable natural capital is under pressure. Wetland habitats are undergoing modification and conversion to crop farming and other land uses, and high and often unsustainable levels of resource utilization are depleting them. The Mara Wetlands are also affected by changes in upstream hydrology and land use, including unregulated water abstraction, dam construction, deforestation, and catchment degradation from overgrazing and unsustainable crop farming, as well as soil and water pollution from mining, agriculture, and industry.

IP I seeks to restore, rehabilitate, and conserve biodiversity and ecosystem services in the Mara Wetlands. It adopts a bottom-up approach to integrated land use planning that involves partnerships among government conservation agencies, other line ministries, and local land and resource users. A variety of projects are identified that would operationalize wise use and sustainable management concepts, aiming to balance local development and conservation needs in the face of climate change. IP I targets five project interventions particularly important to biodiversity and ecosystem conservation, addressing critical shortfalls in funding integrated land use planning, landscape restoration and rehabilitation, species and habitat conservation, ecosystem-based adaptation, and sustainable livestock production.

**Figure 6. Investment Package I consists of five projects at combined cost of TZS 2.2 billion or USD 0.99 million**



**Table 1. Summary of Investment Package I (Wetland wise use and sustainable management)**

<b>PIA DEVELOPING VILLAGE-LEVEL INTEGRATED LAND USE PLANS</b>	
<b>Investment</b>	TZS 550 million or USD 240,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	Many different stakeholders—both public and private—own and use the habitats and resources of the Mara Wetlands in pursuit of various goals and interests. These arrangements are not always consistent or coordinated with each other, nor necessarily act in support of conservation and wise use. The Government of Tanzania, through the National Land Use Planning Commission, set out guidelines for village land use planning, based on the Village Land Act and Land Use Planning Act, which strongly emphasizes participatory approaches. They provide the basis for harmonized, effective planning and management of the Mara Wetlands and their resources, and offer a mechanism for balancing needs and interests of different groups.
<b>Scope &amp; content</b>	The project will support development and initial establishment of land use plans in pilot villages within the Mara Wetlands landscape. This will involve technical support to land use assessment, zoning and mapping, facilitation of appropriate institutional and legal arrangements at the village level, and strengthening of local awareness and capacity in sustainable wetland management.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Identify, assess, and map existing land and resource ownership, use, and management categories.</li> <li>• Use consultation and multi-stakeholder dialogue on management and zoning needs and priorities.</li> <li>• Establish village land use committees.</li> <li>• Develop land use management plans, village by-laws, and associated public consultation, comment, and communication processes.</li> <li>• Develop awareness, capacity, and empowerment of environmental rights, responsibilities, and skills among community members and committees.</li> <li>• Support implementation and enforcement of management plans and associated regulations.</li> <li>• Monitor implementation of land management plans.</li> </ul>
<b>Results &amp; beneficiaries</b>	Land use plans will be developed with active participation of community members, local authorities, other line agencies, and organizations. These are expected to provide a tool for negotiating and operationalizing wise use and sustainable management arrangements, addressing unsustainable land and resource uses, and curbing wetland encroachment. Support will be provided to village-level institutional development, awareness, capacity building, and dialogue to enable full participation of all players in these processes. Primary beneficiaries will be village land use committees, local residents, and businesses, especially those that depend directly on wetland biodiversity and ecosystem services.
<b>Focal agency/ies</b>	Ministry of Land, Housing, and Human Settlements Developments (MLHHSD)/ National Land Use Planning Commission (NLUPC)
<b>Other partner(s)</b>	Mara Regional Administrative Secretary (RAS); District Executive Directors (DED); Lake Victoria Basin Water Board (LVBWB); ward & village governments; north & south Mara water user associations (WUA); community-based organizations (CBOs); nongovernmental organizations (NGOs); Lake Victoria Basin Commission (LVBC); President's Office – Regional Administration and Local Government (PO-RALG)

PIB RESTORING AND REHABILITATING DEGRADED LANDSCAPES	
Investment	TZS 660 million or USD 300,000
Priority	Essential
Need & basis for action	Many parts of the Mara Wetlands are heavily degraded, undermining provision of important ecosystem services. Biodiversity and wildlife habitat have been affected, impacting threatened and endangered species of fauna and flora, as well as resulting in a decline in availability of locally utilized natural products, pasture, and fisheries. Deforestation and wetland loss have also affected water flow and quality, resulting in prolonged water shortage during dry seasons and increased risks of flooding in the wet season. Action is critically needed to restore and rehabilitate these degraded landscapes to reestablish key habitats, species, and ecosystem services.
Scope & content	This project will restore and rehabilitate degraded ecosystems within the Mara Wetlands landscape, including swamps, grasslands, woodlands, and shrub lands. The project will also develop long-term plans for sustainable management of these renovated areas, in partnership with adjacent communities. The primary focus is on land under public ownership and management and/or subject to communal use, supplementing on-farm agroforestry activities occurring on private lands (see Project 3a).
Indicative activities	<ul style="list-style-type: none"> <li>• Identify critically degraded areas and hotspots.</li> <li>• Formulate landscape and site-level plans for restoration, rehabilitation, and sustainable management.</li> <li>• Source, plant, and tend appropriate species for revegetation.</li> <li>• Develop long-term agreements for landscape management.</li> <li>• Monitor impacts on species, habitats, and restoration of key ecosystem services.</li> </ul>
Results & beneficiaries	Degraded natural landscapes will be restored and rehabilitated with the active involvement of and benefit to local communities, and plans will be implemented for their long-term management. Primary beneficiaries will be groups and sectors in the Mara Wetlands and beyond that depend on woodland, wetland, and grassland ecosystem services, including farmers, fisher folk, water users, local settlements, and the tourism industry.
Focal agency/ies	Ministry of Natural Resources & Tourism (MNRT)/District Land and Natural Resource Office (DLNRO); District Environment and Sanitation Department (DESD)
Other partner(s)	Mara RAS; PO-RALG; LVBWB; Tanzania Forest Service (TFS); Victoria Fishing and Farming Organization (VIFAFIO); Worldwide Wildlife Fund (WWF); Birdlife International

PIC MANAGING THREATS TO KEY WETLAND SPECIES AND HABITATS	
Investment	TZS 660 million or USD 300,000
Priority	Very important
Need & basis for action	The Mara Wetlands provide habitat for a variety of species of conservation significance, many of which are threatened or locally endangered. Key pressures include land conversion and resource overharvesting, as well as unsustainable land and resource management practices such as burning. Introduction of non-native species of plants, fish, and other animals also poses a grave threat. Some of these introduced species are invasive, taking over local species and habitats (i.e., water hyacinth [ <i>Eichhornia crassipes</i> ]). Invasive species have affect both the biodiversity and socio-economy of the surrounding area. Information remains patchy, and gaps in knowledge about specific conservation needs and priorities must be filled. Urgently needed is generation of accurate and up-to-date data on key species and habitats—locations, statuses, and threats—to formulate a plan for their conservation.

<b>Scope &amp; content</b>	This project will identify, assess, and record key habitats, species, and conservation “hotspots.” It will support formulation of strategies to address environmental threats, focusing on invasive species and development of locally managed conservation areas (e.g., “no take” zones, protected species or closed sites). These activities will be integrated with village land use plans under development via Project 1a, and with the integrated wetland management strategy of Project 2a.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Identify species and habitats of particular conservation significance.</li> <li>• Assess environmental threats and risks, including sources and paths of alien species invasion.</li> <li>• Prioritize and map local conservation “hotspots.”</li> <li>• Assess threats to, needs of, and management requirements for identified sites and species.</li> <li>• Develop action plans for highest priority sites, species, and threats, including invasive species, to be implemented as part of village land use plans, integrated wetland management strategy, and other plans and processes.</li> <li>• Conduct a community sensitization and awareness campaign on environmental risks and threats (including from invasive species).</li> <li>• Pilot/demonstrate activities to manage threats, including invasive species.</li> </ul>
<b>Results &amp; beneficiaries</b>	Priority habitats and species will be identified, and an information and planning base set up to enable improved protection, sustainable management, and monitoring of their status in the future. Primary beneficiaries will be local communities in and around the Mara Wetlands, as well as local, national, and international groups interested in conservation of wetland biodiversity. The project will also benefit populations affected by invasive species (e.g., water users and fisher folk).
<b>Focal agency/ies</b>	Mara RAS
<b>Other partner(s)</b>	Division of Environment (DOE); PO-RALG; ward and village councils; research organizations; DEDs; NGOs; CBOs; LVBWB; LVBC; north and south Mara WUAs; MNRT

<b>PID MAINSTREAMING ECOSYSTEM-BASED ADAPTATION MEASURES</b>	
<b>Investment</b>	TZS 230 million or USD 100,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	The Convention on Biological Diversity defines ecosystem-based adaptation (EbA) as an approach that “uses biodiversity and ecosystem services ... to help people to adapt to the adverse effects of climate change,” and may include “sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy that takes into account the multiple social, economic and cultural co-benefits for local communities.” Even though EbA has considerable potential to strengthen resilience of both human and natural systems in the Mara Wetlands to the effects of climate change, it has yet to be mainstreamed fully into decision making. “Green” approaches continue to be considered a lower priority than conventional “sector-based” or “gray” measures, and awareness is low on the potential to use wetland conservation and wise use as a strategy for strengthening adaptive capacities of human and natural systems.
<b>Scope &amp; content</b>	Working in tandem with climate vulnerability assessments and adaptation strategies under development in Projects 2a and 3f, this project will identify key needs, niches, and opportunities to mainstream EbA approaches into land use, development, and conservation planning. This will occur at the landscape level, but with particular focus on villages in which pilot land use plans are under development. It will also seek, wherever possible, to harmonize EbA measures with conservation “hotspots” identified via Project 1c.

<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Assess landscape-level climate risks, vulnerabilities, and adaptation needs.</li> <li>• Screen village land use plans, species/habitat action plans, and integrated wetland management strategy for areas of potential overlap and synergy.</li> <li>• Identify EbA measures that can be mainstreamed into existing sectoral and spatial conservation and development plans.</li> <li>• Implement sensitization, awareness, and capacity building in EbA for village and landscape-level planners and managers.</li> <li>• Support development of pilot EbA measures.</li> </ul>
<b>Results &amp; beneficiaries</b>	Opportunities will be identified to mainstream EbA measures into existing site and landscape-level land use, and into development and conservation management planning processes—thereby strengthening human and ecosystem resilience to effects of climate change. Primary beneficiaries will be local communities, enterprises, and sectors vulnerable to effects of climate change.
<b>Focal agency/ies</b>	National Environment Management Council (NEMC)
<b>Other partner(s)</b>	Local Government Authorities (LGAs); PO-RALG; LVBWB; MNRT; MLHSD; Ardhi University; NGOs; CBOs

### PIE STRENGTHENING SUSTAINABLE LIVESTOCK AND PASTURE MANAGEMENT

<b>Investment</b>	TZS 320 million or USD 150,000
<b>Priority</b>	Important
<b>Need &amp; basis for action</b>	Livestock plays a key role in local livelihoods within the Mara Wetlands landscape, providing an important source of household nutrition and cash earnings, as well as functioning as a store of wealth. Most people keep local livestock breeds, and engage in extensive grazing systems based on natural pasture and watering points across the wetland landscape. However, high livestock numbers are stressing natural ecosystems. Overgrazing is leading to grassland degradation, particularly in southern areas, and riverbanks and wetland fringes are affected. This damages overall ecological integrity, lowers water quality, and degrades associated ecosystem services. There is a need to improve sustainability of livestock and pasture management to address conservation threats and strengthen community livelihoods within the wetland landscape.
<b>Scope &amp; content</b>	This project will develop and deliver a package of measures for reducing livestock-related pressures on the wetland ecosystem and adding value to sustainable livestock production. These measures include formulation and enforcement of by-laws regulating entry of cattle into ecologically sensitive areas, as well as support to farmers to access improved livestock breeds, employ reduced-impact feeding techniques, and benefit from new market opportunities.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Identify overgrazed areas and pressures on natural habitats.</li> <li>• Scope needs and niches for sustainable livestock production.</li> <li>• Formulate by-laws and agreements to regulate grazing in sensitive areas.</li> <li>• Train/educate livestock extension workers and farmer groups in capacity building to establish sustainable pasture and livestock management, production, and marketing systems.</li> <li>• Support introduction of improved breeds and farm-based feeding practices.</li> </ul>
<b>Results &amp; beneficiaries</b>	Overgrazed grassland and wetland areas will be restored, and both sustainability and profitability of local livestock production systems will be improved. Primary beneficiaries will be farmers living in and around the Mara Wetlands.
<b>Focal agency/ies</b>	Mara RAS; Ministry of Livestock and Fisheries (MLF)
<b>Other partner(s)</b>	DEDs; Ministry of Agriculture, Food Security and Cooperatives (MAFC); MNRT; NLUPC; LVBC; PO-RALG; LVBWB; Mwalimu Nyerere University of Agriculture; Black Agriculture Centre; JKT Lwamkoma; Magereza Kiabakari; north and south WUAs; NGOs; CBOs

### 3.2 INVESTMENT PACKAGE 2:

#### Conservation Awareness, Capacity, and Governance

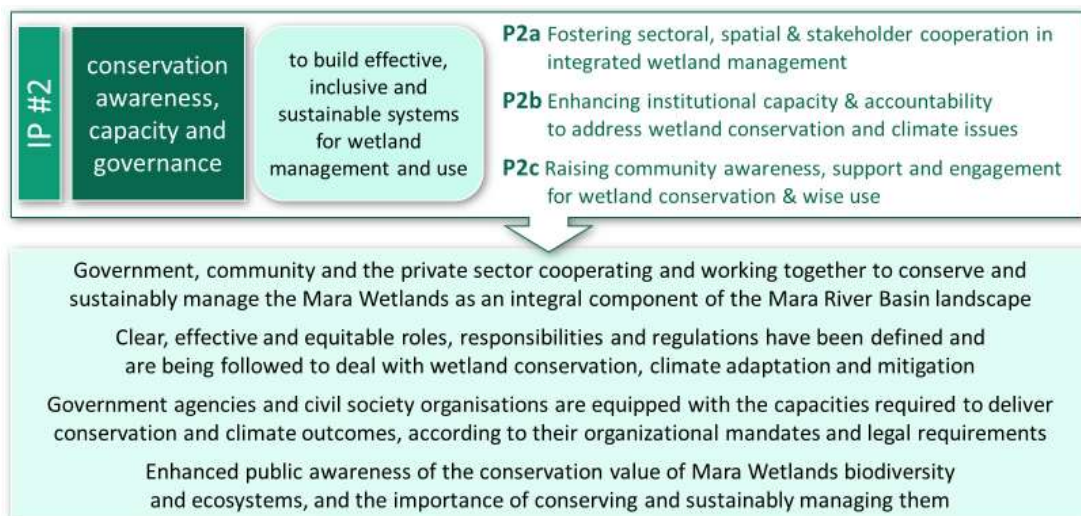
While the Mara Wetlands have no formal protected status, different parts of the landscape are subject to various uses, management regimes, and ownership arrangements. As such, a broad array of laws and institutions have some bearing on the wetland landscape, and many different private and public stakeholders have some stake, claim, or responsibility for the land and resources therein.

On the one hand, this multiplicity of legal, institutional, and organizational provisions implies existence of a comprehensive body of rules, regulations, and procedures relating to wetland management—some entailing conservation and wise use principles. However, gaps, inconsistencies, and contradictions have become evident among the many sectors, organizations, and stakeholders that depend on and impact wetland resources. There is a need for a more unified approach to wetland management that would accommodate these different interests and establish a coherent and comprehensive framework for wetland conservation, wise use, and sustainable management.



By strengthening wetland governance structures while building awareness and capacity among different stakeholders, IP 2 aims to develop effective, inclusive, and sustainable systems for wetland management and use. It targets three project interventions that would enable/enhance important conditions for integrated wetland management: enhancing institutional and legal frameworks (including government accountability and capacity), fostering stakeholder collaboration, and raising public awareness.

**Figure 7. Investment Package 2 consists of three projects at combined cost of TZS 520 million or USD 230,000**



**Table 2. Summary of Investment Package 2 (Conservation awareness, capacity, and governance)**

<b>P2A ENHANCING SECTORAL, SPATIAL, AND STAKEHOLDER COOPERATION IN INTEGRATED WETLAND MANAGEMENT</b>	
<b>Investment</b>	TZS 160 million or USD 70,000
<b>Priority</b>	Very essential
<b>Need &amp; basis for action</b>	Many agencies, sectors, and stakeholder groups depend on, affect, or assume roles in managing different parts of the Mara Wetlands. This includes land and water users and managers in the upper Mara Basin, whose actions exert a strong influence on the status of the wetlands (e.g., by influencing river flow, water quality, siltation, and other processes). Accordingly, a multiplicity of laws, policies, programs, and plans touch on wetland ecosystems and on activities affecting them. While some of these activities, institutions, and regulations are well coordinated, consistent, and supportive of conservation and wise use goals, others are at odds with wise use principles, and some contradict or conflict with each other. No coherent or commonly agreed framework has been established that explicitly deals with sustainable management of the Mara Wetlands or trade-offs associated with balancing needs, goals, and claims of different managers and users.
<b>Scope &amp; content</b>	This project will support development of a strategy for integrated management of the Mara Wetlands. It will bring together different local and national government and line agencies, civil society groups, private sector businesses, and community representatives. The project will include efforts to engage at the basin level to address transboundary water and catchment management issues. The aim is to build an overarching framework for conservation, wise use, and sustainable management of the Mara Wetlands that the various programs, projects, and activities of stakeholders will adopt.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Identify and map interests, needs, and priorities of wetland stakeholders, as well as key laws, policies, and programs touching on the wetland landscape.</li> <li>• Establish a multi-stakeholder/multi-sector platform to discuss shared interests, principles, and approaches to wetland management and use.</li> <li>• Formulate and agree on a joint strategy for conservation, wise use, and sustainable management of the Mara Wetlands, clearly specifying roles and responsibilities of different actors and agencies.</li> <li>• Identify measures to address, harmonize, or resolve inconsistencies and gaps in existing policy and legal frameworks regarding wetland sustainable management, climate adaptation, and mitigation.</li> <li>• Facilitate active engagement of stakeholders and managers from the Mara Wetlands in basin-wide and transboundary processes.</li> </ul>
<b>Results &amp; beneficiaries</b>	Establishment of a permanent platform for multi-stakeholder/sectoral dialogue and action on wetlands, climate adaptation, and mitigation, resulting in an integrated and harmonized strategic policy and legal framework for conservation, wise use, and sustainable management of the Mara Wetlands. Primary beneficiaries will be local government and various line agencies, civil society organizations (CSOs), and community members showing interest in, depending on, or impacting the Mara Wetlands.
<b>Focal agency/ies</b>	Ministry of Water and Irrigation (MoWI)/LVBWB; Mara RAS
<b>Other partner(s)</b>	LGAs; MNRT; NGOs; CBOs

<b>P2B ENHANCING INSTITUTIONAL CAPACITY AND ACCOUNTABILITY TO ADDRESS WETLAND CONSERVATION AND CLIMATE ISSUES</b>	
<b>Investment</b>	TZS 290 million or USD 130,000
<b>Priority</b>	Essential
<b>Need &amp; basis for action</b>	The conservation, wise use, and sustainable management of the Mara Wetlands requires direct involvement of a wide range of LGAs, sectoral line ministries, and CSOs. There is a need to ensure that wetland managers and users within government, local communities, and the private sector fulfill their duties and mandates regarding wetland conservation, and manage impacts of their activities on the natural environment. Yet many do not possess the knowledge and competencies to engage in wetland and climate-related activities, and are not conversant with environmental rules and regulations governing their activities. There is urgent need to build institutional capacity and accountability regarding wetland-related environmental rights and responsibilities.
<b>Scope &amp; content</b>	This project will strengthen capacity, know-how, and competence regarding wetland conservation and climate issues among government agencies and CSOs. This will include providing technical knowledge and training, and instilling general awareness and knowledge required to increase accountability in planning and implementing conservation and development activities within the Mara Wetlands landscape.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a needs assessment of existing institutional capacities, gaps, and requirements for addressing wetland and climate issues.</li> <li>• Design and deliver targeted training on technical skills and knowledge pertaining to conservation.</li> <li>• Design and deliver awareness and information on (1) rights and responsibilities regarding compliance with environmental regulations; and (2) facilitation of wetland wise use, climate adaptation, and mitigation activities.</li> </ul>
<b>Results &amp; beneficiaries</b>	Management of the Mara Wetlands will be more effective, in a manner consistent with conservation, wise use, and sustainable management goals, and supportive of climate change adaptation and mitigation. Government officers and civil society will be better equipped to deliver on their mandates in ways that uphold environmental rules and regulations, as well as principles of wetland wise use. Primary beneficiaries will be technical and administrative staffs of local government and line agencies, the judiciary, law enforcement officers, and civil society groups.
<b>Focal agency/ies</b>	LGAs; Mara RAS
<b>Other partner(s)</b>	LGAs; LVBWB; MNRT; TFS; NEMC; NGOs; CBOs

<b>P2C RAISING COMMUNITY AWARENESS, SUPPORT, AND ENGAGEMENT FOR WETLAND CONSERVATION AND WISE USE</b>	
<b>Investment</b>	TZS 70 million or USD 30,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	Wetland conservation, wise use, and sustainable management cannot be achieved without the active cooperation and support of local communities. Yet, although almost all wetland households (as well as many other groups, sectors, and businesses farther afield) depend on or affect ecosystem services in some way, awareness is low regarding issues related to conservation and wise use. Generally, negative impacts of wetland degradation on human health, well-being, and resilience are not understood; neither are gains and economic opportunities associated with conservation. Building community awareness on these topics can lend important support to conservation efforts in and around the Mara Wetlands, and help identify entry points for better engagement, support, and maintenance of local livelihoods within a sustainable wetland management framework.

<b>Scope &amp; content</b>	This project will develop and deliver conservation awareness activities among wetland community members. It focuses especially on wetland resource users and land managers, and on local leaders (e.g., village office holders, educators, and religious leaders) who can influence others' preferences, aspirations, actions, and decisions. As such, it complements the more technical training and skills-building activities in support of sustainable livelihoods via IP 3. As well as raising awareness, these activities are expected to fulfill an important role in leveraging local support and buy-in for wetlands conservation, and empowering community members to better participate and engage in conservation activities.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a strategic assessment of community interests, influences, aspirations, and concerns regarding wetland ecosystems.</li> <li>• Design content and prepare targeted educational and awareness materials.</li> <li>• Develop visual and print materials, and social media campaigns.</li> <li>• Deliver education and awareness communications to target audiences.</li> </ul>
<b>Results &amp; beneficiaries</b>	Enhanced awareness and education among wetland land and resource users and influential local leaders will be passed on to other community members, resulting in enhanced support for wetland wise use, reduced threats to the environment, and increased engagement and participation in conservation activities. Primary beneficiaries will be wetland community members.
<b>Focal agency/ies</b>	MoWI/LVBWB
<b>Other partner(s)</b>	Ministry of Information, Youth, Culture and Sports (MoIYCS); Mara RAS; LGAs; NGOs; CBOs

### 3.3 INVESTMENT PACKAGE 3:

#### Sustainable and Climate-Resilient Local Livelihoods

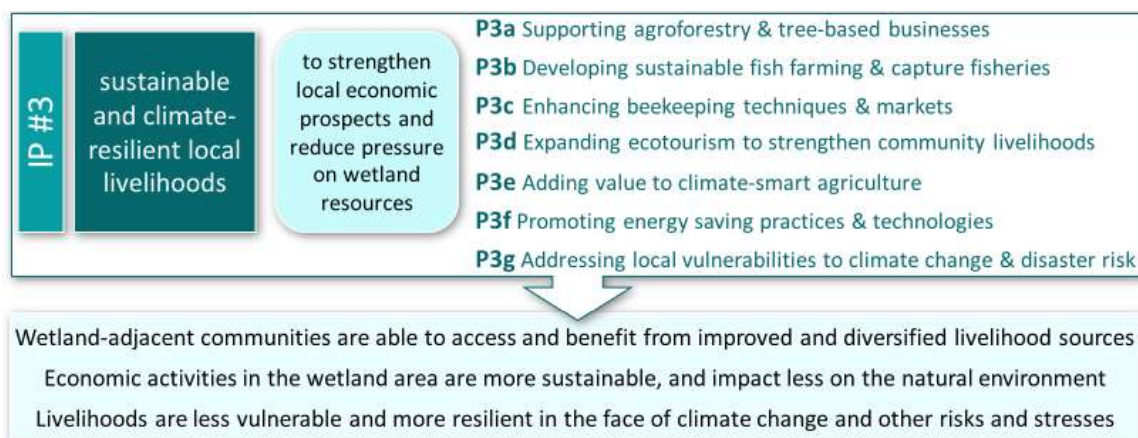
Communities within the Mara Wetlands landscape depend heavily on natural resources for their day-to-day needs. Farming and fishing provide the major source of food, income, and jobs. The bulk of fuel, construction, and craft materials are sourced from wetlands and woodlands, and many people also earn cash from harvesting, processing, and selling other nature-based products such as bricks, sand, clay, timber, charcoal, reeds, and grasses. These livelihood sources tend to be particularly important for poorer members of the community (who have limited economic opportunities), and also serve as critical fallbacks and safety nets in times of stress.



Meanwhile, incidence of poverty remains high in Butiama, Rorya, Serengeti, and Tarime Districts, and many parts of the wetland-adjacent area are remote from markets, other facilities, and services. Opportunities for local employment and income generation are scarce, and farmers face problems of low prices and unfavorable terms of trade. It is difficult for people to add value to production or to access improved business and marketing opportunities. To generate essential food and income, many households are forced into activities of land and resource use that are unsustainable.

By integrating biodiversity and sustainable livelihoods at the local level, IP 3 aims to strengthen economic prospects and reduce pressure on wetland resources. It emphasizes increased access to alternative, sustainable sources of income and production that will not delete or degrade natural ecosystems, and will be resilient and robust in the face of climate change. IP 3 targets seven project interventions that offer particularly good opportunities to improve economic wellbeing and security within all sectors of the wetland community: agroforestry, fish farming, beekeeping, ecotourism, climate-smart agriculture, energy-saving practices and technologies, and reduction in vulnerability to climate-induced risks and disasters. All of these activities have been and remain chronically under-funded.

**Figure 8. Investment Package 3 consists of seven projects with a combined cost of TZS 2.14 billion or USD 0.79 million**



**Table 3. Summary of Investment Package 3 (Sustainable and climate-resilient local livelihoods)**

<b>P3A SUPPORTING AGROFORESTRY &amp; TREE-BASED BUSINESSES</b>	
<b>Investment</b>	TZS 240 million or USD 110,000
<b>Priority</b>	Essential
<b>Need &amp; basis for action</b>	The Mara Wetlands landscape has been severely deforested over time, and continues to undergo tree loss due to intensifying land use pressures and growing demand for products such as wood fuel and construction materials. Not only does this affect provision of important ecosystem-regulating services (such as erosion control and watershed protection), but it reduces the supply of wood and non-wood products for local households. Need is clear for action to restore forest cover, and to make available alternative, accessible, and affordable sources of wood and non-wood products to wetland households and local institutions.
<b>Scope &amp; content</b>	This project will support on-farm tree planting, community and institutional woodlots across the landscape, and development of associated income-generating and value-adding opportunities (e.g., nurseries and seedling production, small-scale wood processing, and fruit and fodder production). The focus is on afforestation and reforestation on farms, institutions, and village lands-supplementing landscape-level restoration and reforestation activities on state lands via Project 1b.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a participatory assessment of household and community needs for tree products, and preferences for tree planting.</li> <li>• Conduct market research and feasibility studies of local tree-based, income-generating, and value-adding opportunities.</li> <li>• Provide key inputs, materials, training, and extension to enable on-farm agroforestry, tree planting, and woodlot establishment at private and community levels.</li> <li>• Provide key inputs, materials, training, and extension to support development of value-adding activities at private and community levels.</li> </ul>
<b>Results &amp; beneficiaries</b>	Tree cover will improve, pressure on natural forest areas will decrease, availability and affordability of wood and non-wood products will increase, and local livelihoods will diversify. Primary beneficiaries will be farmers, community groups, local businesses, and institutions (such as schools and prisons) within the Mara Wetlands landscape. Off-site water consumers and lake users will also benefit from reduced erosion and runoff, and improved water flow and quality.
<b>Focal agency(ies)</b>	Mara RAS; NEMC; MAFC/Department of Agriculture (DOA); LGAs; TFS
<b>Other partners</b>	DEDs; MAFC; MNRT; LVBC; LVBWB; Sokoine University of Agriculture; Ukiguru Research Institute; Mwalimu Nyerere University of Agriculture; Black Agriculture Centre; JKT Lwamkoma; Magereza Kiabakari; north and south Mara WUAs; WWF; ViAgroforestry Project; VIFAFIO; Global Resources Alliance; NGOs; CBOs; private sector
<b>P3B DEVELOPING SUSTAINABLE FISH FARMING AND CAPTURE FISHERIES</b>	
<b>Investment</b>	TZS 280 million or USD 120,000
<b>Priority</b>	Important
<b>Need &amp; basis for action</b>	Fish provide a major source of food and income to households within the Mara Wetlands landscape, and are traded in more distant markets. However, pressure on wild fish stocks has increased, along with a rising incidence of overfishing and applications of illegal or unsustainable fishing methods (such as small-mesh nets). Conversion of important wetland habitats and breeding sites has also affected local fisheries production. Catches have been decreasing, average size of fish caught has declined, and some species are becoming scarcer. Needs are urgent to better manage and regulate capture fishing activities and protect wild fish stocks, and to provide alternative sources of fish production through aquaculture.
<b>Scope &amp; content</b>	This project will promote sustainable best practices in capture fisheries and aquaculture as a supplementary form of production and income. It will also support associated processing and trading activities that seek to add local value to fisheries production.

<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a participatory assessment to identify critically overfished areas and species.</li> <li>• Develop and enforce measures to regulate capture fisheries (e.g., enforce existing regulations, develop by-laws, establish no-take zones and breeding reserves).</li> <li>• Restock key fish species in wetland areas.</li> <li>• Provide key inputs, materials, training, and extension to enable aquaculture development and establish value-added processing and marketing activities at the community level.</li> </ul>
<b>Results &amp; beneficiaries</b>	Natural fish stocks will be restored and improved, and sustainability of capture fisheries will improve with availability of supplementary sources of fish via aquaculture—resulting in greater food and income security for local households. Primary beneficiaries will be fisher folk and farmers living within the Mara Wetlands landscape.
<b>Focal agency(ies)</b>	MLF
<b>Other partners</b>	Mara RAS; PO-RALG; VIFAFIO; Economic and Social Research Foundation (ESRF); NGOs; CBOs; private sector

<b>P3C ENHANCING BEEKEEPING TECHNIQUES &amp; MARKETS</b>	
<b>Investment</b>	TZS 160 million or USD 70,000
<b>Priority</b>	Essential
<b>Need &amp; basis for action</b>	While honey already provides an important source of income for many households within the Mara Wetlands landscape, production techniques remain somewhat outdated, yields are low, and local markets allow only limited possibilities for value addition. Potential for growth in beekeeping is high as a low-impact, sustainable source of income that can be part of an integrated livelihood strategy. Beekeeping has relatively low labor demands, investment costs, and requirements for other inputs. Opportunities are evident to improve productivity and profitability of beekeeping and associated processing and marketing activities to strengthen, diversify, and enhance local livelihoods.
<b>Scope &amp; content</b>	This project will provide technical, material, and capacity support for local beekeeping production, processing, and marketing. It will work with households currently depending on wetland products, and land uses, to develop alternative and supplementary livelihood options intended to replace unsustainable and illegal activities.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a participatory assessment to identify key partners and beneficiaries, including resource users groups, farmers groups, women groups, and other CBOs.</li> <li>• Scope the most appropriate beekeeping technologies and practices for the wetland area, and potential processing and marketing value-added opportunities.</li> <li>• Provide key inputs, materials, training, and extension to enable developing and improvement of beekeeping, and establish value-added processing and marketing activities at the community level.</li> </ul>
<b>Results &amp; beneficiaries</b>	Local livelihoods within wetland households will improve, diversify, and become more secure, leading to improved socioeconomic status and reduced pressures on the natural resource base. Primary beneficiaries will be farmers and small businesses in the wetland area.
<b>Focal agency(ies)</b>	MNRT/TFS; DESD
<b>Other partners</b>	Mara RAS; PO-RALG; LVBWB; NGOs; CBOs; private sector; VIFAFIO; WWF; Birdlife International

<b>P3D EXPANDING ECOTOURISM TO IMPROVE COMMUNITY LIVELIHOODS</b>	
<b>Investment</b>	TZS 440 million or USD 200,000
<b>Priority</b>	Essential
<b>Need &amp; basis for action</b>	Tourism currently occurs at a relatively low level in the Mara Wetlands, and ecotourism markets are undeveloped. However, the area hosts natural attributes and landscapes with great potential to support nature-based tourist activities, including bird watching, animal viewing, hiking, and water sports. A number of important historical sites are also present in the region. There may be opportunities to develop joint ecological and cultural tourism activities.
<b>Scope &amp; content</b>	This project will support and facilitate development of ecotourism within the Mara Wetlands landscape. It will formulate a coherent development strategy based on needs and preferences of key stakeholders, as well as on sound understanding of market demand and potentials. Efforts will occur to equip key government, private sector, and community stakeholders with capacity and means to deliver ecotourism.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct market assessment of ecotourism potential, visitor demand, and industry interest.</li> <li>• Identify possible attractions, routes, required supporting equipment, facilities, and infrastructure.</li> <li>• Conduct strategic environmental and social impact assessment of sector development.</li> <li>• Carry out stakeholder assessment to identify potential local service providers of cultural and nature-based tourism activities.</li> <li>• Identify training and capacity needs among local communities, government, and private sector.</li> <li>• Develop ecotourism strategy (including investment plan) for the Mara Wetlands.</li> <li>• Launch ecotourism strategy, alongside awareness-raising and publicity activities, at local and national levels.</li> <li>• Develop online Mara Wetlands ecotourism portal, and train local government and/or community groups to maintain it.</li> </ul>
<b>Results &amp; beneficiaries</b>	An integrated plan for ecotourism development in the Mara Wetlands will be developed and accepted following consultations with potential users and suppliers of tourist activities, including local communities, government, civil society, and the private sector. Primary beneficiaries will be local community members, as well as other public and private sector groups engaged in the tourism industry.
<b>Focal agency(ies)</b>	MNRT; PO-RALG
<b>Other partners</b>	Tanzania Tourism Board (TTB); LVBWB; LVBC; Vice President Office – Environment (VPO-E); NGOs; private sector

<b>P3E ADDING VALUE TO CLIMATE-SMART AGRICULTURE</b>	
<b>Investment</b>	TZS 250 million or USD 110,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	Agriculture forms the basis of rural livelihoods within the Mara Wetlands landscape. However, many households find themselves trapped in a vicious cycle of low agricultural productivity, poverty, and land degradation—inducing many people to engage in environmentally degrading activities (e.g., sand mining, brick-making, or charcoal production) to fill gaps in food and income. Ongoing processes are exacerbating this situation, rendering agriculture more risky and uncertain. Working to develop and extend climate-smart, sustainable, land management practices is a path not only to improved crop yields, income, and food supplies, but also to more secure and resilient livelihoods for farmers, and to decreased necessity of supplementing farm income by dependence on unsustainable sources.

<b>Scope &amp; content</b>	This project will work with farmers to identify, develop, and facilitate uptake of climate-smart agriculture (CSA) and sustainable land management (SLM) practices among farmers. Emphasis is on applying a participatory approach involving work with farmers to select techniques and practices that will enhance productive, profitable, and resilient outcomes targeted to local needs, conditions, constraints, and opportunities. Particular priorities will be to regulate access to and utilization of wetlands, and promote wise use and more sustainable farming practices in wetlands and woodland areas.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a participatory assessment of farmers' land management needs and constraints.</li> <li>• Identify and promote appropriate CSA and SLM techniques and practices in consultation with farmers (e.g., drought-resistant crops, high-value crops, soil and water conservation, soil fertility management, greenhouses).</li> <li>• Establish demonstration sites, open days, and other communications/ awareness activities regarding CSA and SLM.</li> <li>• Provide key inputs, materials, training, and extension to enable CSA and SLM investments at the community level.</li> </ul>
<b>Results &amp; beneficiaries</b>	Crop yields, productivity, and marketing opportunities will increase and stabilize with restoration of soil fertility on farms and reduction of pressures on wetland ecosystems. This will result in greater food and income security, enhanced resilience and adaptation capacity in the face of external shocks and stresses (including climate change), and improved environmental conditions on and around farms. Primary beneficiaries will be farmers living in the Mara Wetlands, while other sectors and groups within the broader landscape will also benefit from improvements in provision of agroecosystem services.
<b>Focal agency(ies)</b>	MAFC/DOA; NEMC
<b>Other partners</b>	Mara RAS; PO-RALG; LGAs; Sokoine University of Agriculture; Ukiguru Research Institute; Mwalimu Nyerere University of Agriculture; WWF; Vi-Agroforestry Project; VIFAFIO; Global Resources Alliance; NGOs; CBOs; private sector

<b>P3F PROMOTING ENERGY SAVING PRACTICES &amp; TECHNOLOGIES</b>	
<b>Investment</b>	TZS 270 million or USD 120,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	Most households within the Mara Wetlands landscape depend on firewood for domestic energy, and demand is high for wood fuel (both charcoal and firewood) from local businesses and institutions. These energy demands have led to wide-scale deforestation and resulted in greenhouse gas emissions, thereby contributing to climate change. As sourcing firewood locally becomes more and more difficult, women must walk increasingly longer distances to meet their household energy needs. Uses of more energy-efficient technologies and products can aid climate adaptation and mitigation, improve household energy security, and reduce women's labor.
<b>Scope &amp; content</b>	This project will introduce and disseminate various energy-saving technologies (e.g., energy-efficient stoves and charcoal kilns) and other alternative forms of renewable energy (e.g., biogas, solar, and briquettes). Training local artisans and community groups in construction and maintenance will ensure a readily available local supply of sustainable energy technologies and open up new sources of income and employment.

<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Inventory energy demand, needs, and preferences in the wetland area.</li> <li>• Identify appropriate, affordable, and sustainable alternative energy sources and energy-efficient technologies.</li> <li>• Mobilize stakeholders, form dissemination groups, and establish demonstration sites.</li> <li>• Carry out community outreach, education, and training on manufacture and use of energy-saving technologies.</li> <li>• Provide key inputs and materials for development of sustainable, energy-based businesses and technologies.</li> </ul>
<b>Results &amp; beneficiaries</b>	For wetland households, demand for wood fuel will lessen, energy will be more affordable, sustainable energy sources will become locally available, and new sources of income will open up. Women and children particularly will benefit from reduced time needed to source firewood, and from less indoor air pollution. Moreover, pressure on natural woodland areas will decrease. Primary beneficiaries will be domestic, commercial, and institutional energy users; local artisans; and community groups. Other sectors and groups within the broader landscape will also benefit from recovery of natural forests and woodlands, and from associated ecosystem services.
<b>Focal agency(ies)</b>	Ministry of Energy (ME); Tanzania Mineral Agency (TMA); NEMC; PO-RALG
<b>Other partners</b>	Mara RAS; LGAs; Tanzania Renewable Energy Association (TAREA); Mobisol Simu solar companies; WWF; Birdlife International; VIFAFIO; Lake Victoria Ecosystem Sustainability Network (LVESNET); NGOs; CBOs; private sector

<b>P3G ADDRESSING LOCAL VULNERABILITIES TO CLIMATE CHANGE AND DISASTER RISK</b>	
<b>Investment</b>	TZS 500 million or USD 230,000
<b>Priority</b>	Essential
<b>Need &amp; basis for action</b>	Climate change poses a major threat to both the natural environment and community livelihoods within the Mara Wetlands landscape. Local households face a range of natural disasters, such as flooding, drought, and other extreme weather events. Much knowledge remains obscure about the likely scale of impacts from climate change and the role of climate change in incidences and impacts of disasters. This knowledge gap increases the difficulty of identifying and planning adaptation measures to reduce vulnerabilities to climate and disaster, and to increase resilience of natural and human systems (e.g., incorporating climate change into planning for conservation, helping farmers adapt to changing agricultural conditions, and climate-proofing livelihoods, services, and infrastructure).
<b>Scope &amp; content</b>	This project will identify key local vulnerabilities to climate change and disasters, and work at the community level to develop appropriate responses. Aims are to increase resilience of wetland natural, social, and economic systems to stresses and shocks; to reduce risk; and to manage uncertainty. Focuses are on information generation and dissemination, and on developing actions to climate-proof local livelihoods, key economic sectors, and institutional arrangements. Activities will occur in tandem with development of ecosystem-based adaptation measures (Project 1d) and promotion of CSA (Project 3d), as well as actions to enhance water security (Project 4a).

<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Map climate and disaster risk vulnerability and hazards, including documenting local knowledge, practices, and coping mechanisms relating to stresses, shocks, and emergencies.</li> <li>• Identify priority climate and disaster risks, uncertainties, and hazards relating to human and natural systems.</li> <li>• Develop climate/disaster responses and action plans for priority sites, sectors, and stakeholder groups.</li> <li>• Provide key inputs, materials, and training to support selected, locally driven climate adaptation, as well as measures to reduce risks from disasters.</li> <li>• Support education, awareness, and training to enhance community resilience and adaptive capacity.</li> </ul>
<b>Results &amp; beneficiaries</b>	<p>Resilience of natural and human systems to climate change and disaster risks will increase, and vulnerabilities of key sites, sectors, and stakeholders will decrease. Community members will be better empowered to cope with stresses, shocks, and emergencies, and to secure and safeguard their livelihoods in the face of uncertainty and change. Primary beneficiaries will be communities in the Mara Wetlands, and groups and sectors within the broader landscape that depend on ecosystem services provided by the Mara Wetlands.</p>
<b>Focal agency(ies)</b>	<p>Mara RAS</p>
<b>Other partners</b>	<p>LVBWB; PO-RALG; MNRT; MLF; MAFC; DEDs; Division of Environment (DOE); NGOs; CBOs; academic and research institutes; private sector</p>

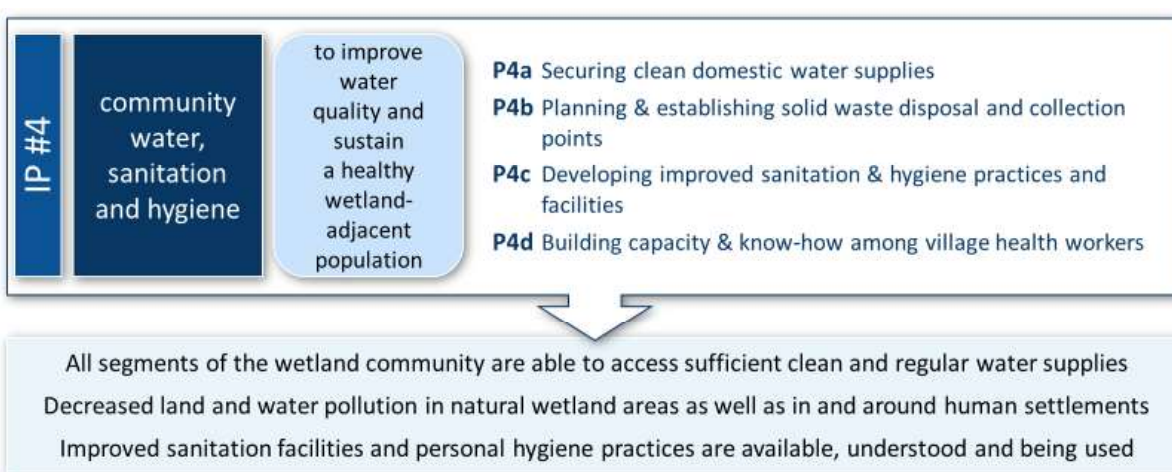
### 3.4 INVESTMENT PACKAGE 4:

#### Community Water, Sanitation, and Hygiene

About half or more households in the Mara Wetlands do not have regular access to clean, safe, drinking water. While most of the wetland community rely on shallow wells and boreholes as sources of domestic water supply, some still draw water directly from streams, rivers, and swamp areas. Poor waste disposal, sanitation, and hygiene practices pose a threat to water quality and local health. Incidence of water-borne disease remains high, negatively affecting people’s well-being and livelihoods.

By supporting improved water, waste, and sanitation facilities, IP 4 seeks to improve water quality and sustain a healthy wetland-adjacent population. It focuses on building awareness and capacity at the community level, and on working to empower wetland households to self-improve their own hygiene and waste management. IP 4 targets four project interventions particularly important to local water quality and health: domestic water supplies, solid waste disposal, sanitation and hygiene, and increased capacity of village health workers.

**Figure 9. Investment Package 4 consists of four projects with a combined cost of TZS 5.58 billion or USD 4.246 million**



**Table 4. Summary of Investment Package 4 (Community water, sanitation, and hygiene)**

P4A SECURING CLEAN DOMESTIC WATER SUPPLIES	
Investment	TZS 3.1 billion or USD 1,370,000
Priority	Very important
Need & basis for action	Some sectors of the wetland community face problems accessing clean and regular water supplies, and must obtain untreated water from open water bodies, rivers, and swamp areas. This water is often contaminated, and may be located at some distance from the household, placing high demands on women’s and children’s labor. The wetlands are also subject to heavy use for watering livestock. This has consequences for people’s health and livelihoods, and for the natural environment. Need is urgent to find ways of securing domestic water supplies for all households within the Mara Wetlands landscape.
Scope & content	This project will develop and safeguard clean water supplies for domestic (including livestock) use. It focuses on reducing pressure on the wetland environment, decreasing women’s labor burden, and enhancing households’ access to clean, regular water supplies. An additional concern is to ensure conservation and maintenance of the natural ecosystems that provide important water regulation services. While external support is required to assist with initial capital investments, the emphasis is on establishing systems that water users can easily and cheaply maintain.

<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a participatory assessment of water availability, access, and needs for wetland households.</li> <li>• Check feasibility and design studies of potential water supply and storage upgrades.</li> <li>• Formulate plans for enhancement of water supply and storage facilities at village and household levels, including maintenance arrangements with local WUAs.</li> <li>• Develop proposals for funding water supply enhancements.</li> </ul>
<b>Results &amp; beneficiaries</b>	Access to clean water supplies will improve, resulting in reduced demands on women's labor time, improved household health and well-being, and improvements in environmental quality within permanently and seasonally flooded areas of the wetland. Primary beneficiaries will be local households, especially those that currently lack access to wells and piped water.
<b>Focal agency(ies)</b>	LGAs; MoWI/LVBWB
<b>Other partners</b>	Mara RAS; Ministry of Finance (MoF); Ministry of Foreign Affairs (MoFA)

<b>P4B PLANNING AND ESTABLISHING SOLID WASTE DISPOSAL AND COLLECTION POINTS</b>	
<b>Investment</b>	TZS 1.1 billion or USD 490,000
<b>Priority</b>	Important
<b>Need &amp; basis for action</b>	Solid waste poses a major and increasing threat to the wetland landscape. A variety of pollutants and contaminants are entering the soil and water, and litter (some of it toxic or hazardous) is beginning to choke waterways and culverts. Waste disposal facilities in village centers, towns, and public institutions are currently inadequate, and some places lack waste management arrangements. There is an urgent need for actions to manage solid wastes, safeguard human health, and maintain the condition of the wetland ecosystem.
<b>Scope &amp; content</b>	This project will support planning and establishment of waste disposal, collection, and management facilities at key points in the Mara Wetlands (e.g., trading centers, institutions, industrial and business zones, and recreational sites). Emphases will be on encouraging waste-generating institutions and businesses to "reduce, reuse, recycle" wherever possible; on ensuring proper treatment of any residual, non-biodegradable, hazardous, and potentially polluting substances; and on preventing entry of those substances into the wetland ecosystem. Systems will be established that can be easily sustained at the community level, and managed by local-level agencies and organizations.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Identify main sources of solid waste generation, composition of wastes, and existing management practices.</li> <li>• Formulate solid waste management plan, including collection points, management approaches, and disposal needs.</li> <li>• Identify solid waste management service providers, the role of local government, and organizations and other arrangements with potential to achieve cost recovery.</li> <li>• Construct secure waste disposal and collection points.</li> <li>• Establish processing and management system for wastes that can be dealt with on site, and collection and transport arrangements for those that cannot.</li> <li>• Raise awareness of "reduce, reuse, recycle" principles, of need for proper waste management, and of penalties and sanctions for improper waste disposal and littering.</li> </ul>
<b>Results &amp; beneficiaries</b>	The amount of solid waste generated and entering the natural environment, particularly harmful and hazardous wastes, will decrease. Human health and wetland status (including land and water quality) are expected to improve as a result. Primary beneficiaries will be businesses and institutions that generate significant waste loads, as well as wetland communities that will gain a cleaner and healthier living and working environment.
<b>Focal agency(ies)</b>	Mara RAS with District Environmental Management Committees (DEMC)
<b>Other partners</b>	NEMC; Ministry of Health, Community Development, Gender, Children and Elderly (MHCDGCE)/District Health Office (DHO); LGAs

<b>P4C DEVELOPING IMPROVED SANITATION &amp; HYGIENE PRACTICES AND FACILITIES</b>	
<b>Investment</b>	TZS 1.300 billion or USD 560,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	Many households living in the Mara Wetlands lack adequate sanitation facilities within the households and in communally used spaces and institutions. Even where latrines have been built, these are not always safe or hygienic—for example, in areas of the district with waterlogged soils. Untreated human wastes are directly entering the environment, contaminating the soil and water. Along with clear and obvious impacts on human health (e.g., incidence of diarrhea and other fecal-transmitted diseases), lack of public and private sanitary facilities also undermines the dignity and well-being of wetland community members, particularly women and girls.
<b>Scope &amp; content</b>	This project will work to improve sanitation and hygiene practices and facilities among wetland communities. As well as raising awareness about basic public health and hygiene approaches, this project will encourage households to construct simple, safe latrine and washing facilities for family use, and to adopt hygiene safety principles such as handwashing and boiling drinking water. In addition, public latrines will be developed to serve local institutions (e.g., schools and health centers) and communal spaces (e.g., bus stands, restaurant and bar areas, and trading centers). An innovative approach to community sanitation and hygiene clubs will be followed to help change norms and encourage demand, develop community cohesion and a “culture of health,” and support establishment and maintenance of new facilities and practices.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Identify existing sanitary practices, facilities, and unmet needs.</li> <li>• Design and construct public latrines and handwashing facilities to serve key community institutions and spaces.</li> <li>• Identify modalities for operation and maintenance of public latrines and handwashing facilities, as well as possible mechanisms for cost recovery (e.g., via user fees, and public and institutional contributions).</li> <li>• Facilitate development and training of community sanitation and hygiene clubs, working through existing institutions and groups (e.g., women’s groups, schools, self-help groups, church associations).</li> <li>• Work with and through clubs and local health workers to conduct public awareness campaigns regarding personal, household, and public hygiene and sanitation issues (e.g., boiling drinking water, handwashing, proper use of toilets, etc.).</li> </ul>
<b>Results &amp; beneficiaries</b>	The number of latrines in place and in use will increase substantially within households and community areas. As a result, soil and water contamination is expected to decrease, and health of wetlands residents is anticipated to improve. Especially important and expected will be decreased incidences of gastro-intestinal diseases. All members of the wetland population are expected to benefit from these activities.
<b>Focal agency(ies)</b>	LGAs; MHCDGCE/DHO
<b>Other partners</b>	MoWI

<b>P4D BUILDING CAPACITY AND KNOW-HOW AMONG VILLAGE HEALTH WORKERS</b>	
<b>Investment</b>	TZS 80 million or USD 40,000
<b>Priority</b>	Very important
<b>Need &amp; basis for action</b>	Despite presence of a number of clinics, health centers, and dispensaries within the wetland-adjacent area, critical gaps remain in delivery of basic public health services. Village health workers play an essential and primary health care role, and offer a first point of contact with the health system for many community members. These workers deal with a wide range of public health issues, including immunization, family planning and childbirth, HIV/AIDS counselling, domestic violence, and alcohol abuse. Continuous training and skills development is required to equip them for delivery of these public health services.

<b>Scope &amp; content</b>	This project will develop and deliver targeted training to village health workers on community water, sanitation, and hygiene. Intent is to equip them with key messages and competencies to extend public health messages to wetland community members concerning clean water and personal hygiene practices. Basic awareness and guidance materials will be prepared for dissemination to local households. This project will open up channels of communication and opportunities for regular dialogue among village health workers and community sanitation and hygiene clubs.
<b>Indicative activities</b>	<ul style="list-style-type: none"> <li>• Conduct a training needs assessment based on village health workers' existing knowledge, needs, and areas of operation.</li> <li>• Design content and prepare targeted educational and awareness materials on key water, hygiene, and sanitation issues (e.g., boiling drinking water, handwashing, proper use of toilets, etc.).</li> <li>• Deliver training courses to village health workers.</li> <li>• Conduct post-training follow-up to ensure updates of skills and monitored dissemination of public health messages.</li> </ul>
<b>Results &amp; beneficiaries</b>	Capacity of village health workers to cope with water, hygiene, and sanitation issues will increase, resulting in changed practices and improved health status among wetland households. Village health workers and members of the wetland population are expected to benefit from these activities.
<b>Focal agency(ies)</b>	LGAs; MHCDGCE/DHO
<b>Other partners</b>	MoWI; health centers and dispensaries; village health workers' village sanitation and hygiene clubs; NGOs

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