ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Restoration of Lake Babati for Enhanced Climate Change Adaptation in Babati District
Country:	Tanzania (United Republic of)
Thematic Focal Area:	Adaptation
Type of Implementing Entity:	National Implementing Entity
Implementing Entity:	National Environment Management Council (NEMC)
Executing Entities:	Climate Action Network (CAN) Tanzania/ Babati Town Council
Amount of Financing Requested:	US$4,034,000 (in U.S Dollars Equivalent)
Letter of Endorsement (LOE) signed:	Yes ☒ No ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☒ This proposal has been submitted before, including at a different stage (concept, fully-developed proposal)

☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: 7/15/2026

Please note that the fully developed proposal documents should not exceed 100 pages for the main document and 100 pages for the annexes.

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List of Abbreviations

AF	Adaptation Fund
AIDS	Acquired Immuno-deficiency Syndrome
ASDP	Agriculture Sector Development Programme
BAWASA	Babati Water and Sanitation Authority
BD	Babati District
BDC	Babati District Council
BTC	Babati Town Council
CAN	Climate Action Network (Tanzania)
CBD	Convention on Biological Diversity
CBMEWS	Community-Based Monitoring and Early Warning System
CBOs	Community-Based Organizations
CCRP	Community Climate Response Plans
COSITA	Community Support Initiative Tanzania
CSA	Climate Smart Agriculture
CSO	Civil Society Organization
DDP	District Development Plan
DED	District Executive Director
DLDD	Desertification, Land Degradation, and Drought
DNA	Designated National Authority
EA	Environmental Audit
EbA	Ecosystem-based Adaptation
EE	Executing Entity
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FFS	Farmer Field School
FGD	Focus Group Discussion
GAAP	Generally Accepted Accounting Principles
GIS	Geographical Information System
GMOs	Genetically Modified Organisms
GPS	Global Positioning System
GRM	Grievance Redress Mechanisms
HIV	Human Immunodeficiency Virus
IAS	International Accounting Standards
ICT	Information, Communication, and Technology
IEC	Information, Education, and Communication
ILO	International Labour Organization
KAP	Knowledge, Attitude, and Practices
KII	Key Informant Interview
LB	Lake Babati
M & E	Monitoring and Evaluation
MDAs	Ministries, Departments, and Agencies
MDGs	Millennium Development Goals
MSME	Micro, Small, and Medium Enterprises.
NABSAP	National Biodiversity Strategy and Action Plan
NAP	National Action Programme
NAPA	National Adaptation Programme of Action
NBSAP	National Biodiversity Strategy and Action Plan

NBSAP	National Biodiversity Strategy and Action Plan
NCCRS	National Climate Change Response Strategy
NCCS	National Climate Change Strategy
NDC	Nationally Determined Contribution
NEAP	National Environmental Action Plan
NEMC	National Environmental Management Council
NEMPSI	National Environmental Masterplan for Strategic Interventions
NEP	National Environmental Policy
NGO's	Non-Governmental Organization
NIE	National Implementing Entity
NSGRP	National Strategy for Growth and Poverty Reduction
NTU	Nephelometric Turbidity Unit
PIR	Project Implementation Review
PMU	Project Management Unit
PPEs	Personal Protective Equipment
PPR	Project Progress Review
PSC	Project Steering Committee
SACCOS	Savings and Credit Cooperative Societies
SEA	Strategic Environmental Assessment
SI	Strategic Intervention
SLM	Sustainable Land Management
SMS	Short Message Service
TASAF	Tanzania Social Action Fund
TBS	Tanzania Bureau of Standards
TFS	Tanzania Forestry Services Agency
THRIVE	Transforming Household Resilience in Vulnerable Environments
ToC	Theory of Change
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Framework on Climate Change Convention
USD	United States Dollar
VEC	Village Environmental Committees
VNRMC	Village Natural Resource Management Committee
VPO	Vice President's Office
WCF	Workers Compensation Fund
WSDP	Water Sector Development Programme
WSDP	Water Sector Development Plan
WUA	Water User Association
WVT	World Vision Tanzania

Project/Programme Background and Context:

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic, social, development, and environmental context in which the project would operate.

1.0. Project Background and Context

The Babati District (BD) is one of five districts in the Manyara region, located in northern Tanzania, East Africa. It consists of a district council and a town council, namely the Babati District Council (BDC) and the Babati Town Council (BTC). The BTC serves the district's urban areas, while the BDC addresses the needs of the larger rural population. The BDC has a population of approximately 390,737 residents, while the BTC serves around 116,458. The district's landscape features numerous undulating hills and mountains, which are part of the East African Rift Valley Highlands. A significant portion of Babati District is semi-arid, receiving average annual rainfall that ranges from 450 mm in the lowlands to 1,200 mm in the highlands, with two distinct rainy seasons. The short rainy season, which is becoming increasingly problematic, runs from October to December, while the long rainy season runs from March to May, marked by an increasing number of dry spells.

The soils in this area are volcanic in origin, ranging from sandy loam to clay alluvial soils. Scientific literature suggests that rising temperatures, coupled with prolonged droughts and unpredictable rainfall, are negatively affecting the district and its communities' livelihoods. The unpredictability of rainfall patterns and communities' limited capacity to adapt to the effects of prolonged droughts have exacerbated poverty. To address the climate-induced challenges facing the communities and their livelihoods in Babati District, it is crucial to implement effective interventions to enhance climate resilience. The semi-arid conditions, along with prolonged dry spells and erratic rainfall, heighten the vulnerability of community livelihoods to climate risks. Lake Babati, including its shoreline, has historically supported various livelihood activities during dry periods. However, its ability to do so is increasingly diminished due to ongoing, severe droughts driven by high human demand, which are degrading the lake. Therefore, sustainable management of the lake is essential to improve climate change adaptation for the communities and their livelihoods.

Socio-economic context

The primary livelihood activities in the region are agriculture, livestock keeping, and fisheries. However, these livelihoods are significantly affected by climate variability and ecosystem degradation. Rainfed agriculture, predominantly practiced in upland areas, yields poorly due to prolonged dry spells and unpredictable rainfall. Additionally, soil quality is deteriorating due to high erosion, which washes away essential nutrients into the lowlands. As a result, many people have moved to the lowlands along the shores of Lake Babati to engage in alternative livelihoods after experiencing failed rainfed agriculture in the uplands. These alternative activities depend heavily on the already drought-affected lake, which is crucial for irrigation agriculture, fishing, and brick making. While irrigation agriculture can ensure year-round food availability, it is often practiced in ways that contribute to lake siltation.

The prolonged dry spells have adversely affected the availability of pasture and water for livestock, forcing pastoralists to move to the lake to graze and water their cattle. Brick making, which provides an income for many men and boys, is also a response to failed upland agriculture, with sites near the lake being used for clay extraction. Lake Babati serves as the primary water source for dry-season agriculture, enabling farms to be irrigated from the lake. This ensures a continuous supply of food and income from crop sales. However, the ongoing dry spells have reduced the availability of farmland, pasture, and water, leading pastoralists to flock to the lake for cattle grazing. This situation has exacerbated resource degradation and led to conflicts over resources.

Furthermore, since many agricultural activities are already strained by climate variability and are conducted in proximity to the lake, there is a substantial risk of flooding and challenges in resource management. Agricultural practices along the lakeshore not only harm the lake ecosystem but also generate conflicts between humans and resources. Hippos inhabiting the lake are particularly active at night, and as they graze, they often stray into nearby farmlands, damaging crops. This encroachment is mainly due to the significant reduction in the lake buffer zone, making it difficult for hippos to find adequate grazing. In addition, the available pastures are grazed by livestock from both Babati Town Council and the rural areas of Babati District Council. During the dry season, when pastures become scarce elsewhere, pastoralists increasingly rely on the lake for grazing and watering their cattle. Illegal fishing, mainly conducted at night, is another source of conflict between humans and hippos. Male hippos, which are highly territorial, often attack fishermen encountered during nighttime fishing. There have been several reported cases of fatalities among fishermen due to hippo attacks at night.



Figure 1. Farmlands in vicinity of the lake shore



Figure 2. Cattle grazing and watering in the lake



Figure 3. Destructive Bricks making along the Buffer Zone of the Lake

Several national and local measures exist to address these unsustainable practices, including the Environmental Management Act (2004), the Fisheries Act (2003), the Forest Act (2002), and District by-laws on land use and environmental conservation. However, these frameworks have not been effective enough due to weak enforcement, limited technical capacity, and low community awareness. The project will strengthen and operationalize these existing measures by building the capacity of local authorities and community-based structures, supporting enforcement of by-laws, and promoting sustainable fishing, climate-smart agriculture, and restoration of degraded buffer zones. It will also enhance coordination among stakeholders and establish multi-stakeholder dialogue platforms to ensure improved governance, compliance, and sustainable management of the Lake Babati ecosystem.

Development Context

The Babati district recognizes Lake Babati and its surrounding areas as significant tourist attractions and as opportunities to promote adaptation strategies. Canoeing and sightseeing are particularly highlighted as potential tourist activities. According to the 2018 Manyara Region Investment Guide, Lake Babati is identified as a key investment area, especially in the tourism sector. While the lake's shores are suitable for constructing tourist hotels, it is essential to adhere to the existing policy and legal framework. Additionally, the lake can support livelihood diversification through sustainable fishing and farming practices.

If effectively restored and well-managed, Lake Babati has the potential to increase the Babati Town Council (BTC) 's revenues through various income streams. The fisheries sector could become the town council's largest revenue generator if properly regulated. In addition to artisanal fishing by local communities, many commercial fishermen from other regions of Tanzania seek fishing licenses to operate in Lake Babati. Currently, however, the abundance of water weeds has blocked waterways, impeding tourist activities and other revenue-generating ventures for BTC. Therefore, removing these water weeds would not only aid in restoring the ecosystem but also facilitate water-based economic activities, such as canoeing and other water sports.

Due to its favorable agricultural conditions, the Lake Babati basin attracts diverse groups from across Tanzania who settle in the area. For instance, by 2016, the population reached 132,000 residents, with 40% in the economically active age group of 15 to 44 years, and an average household size of 5.27. The current water supply system is inadequate to meet the demands of all water users, leading to competition for water between sectors such as agriculture and domestic use. This situation is worsened by a decline in the lake's water level, resulting in higher water costs from the Babati Water Supply and Sanitation Authority (BAWASA). Consequently, many residents in BTC are compelled to fetch water directly from Lake Babati.

Environmental Context

Babati District covers approximately 5569 km² and is rich in natural resources, including Lake Babati, located within the East African Rift Valley in the Manyara Region. However, these resources are currently facing challenges due to climate change and environmental degradation. The lake's freshwater exists in a semi-arid climate and has relatively shallow, highly fluctuating water levels. It is vital for the livelihoods of nearby communities, providing employment for about 1,000 artisanal fishers. Additionally, many women and girls sell fried fish caught in the lake. Some men and boys are involved in brick making, utilizing sites close to the lake for clay extraction. Overall, Lake Babati serves as the main source of water for irrigation farming, brick making, and livestock.

Since 1964, the lake has been subject to environmental stresses primarily resulting from climate and land-use changes. Various studies on the lake's flooding and drying patterns have linked these events to climate change and land-cover changes. For instance, a study conducted in 1995 concluded that “an analysis of rainfall trends in the region, a water-balance model simulating lake levels under both forested and deforested-degraded catchment conditions, and a series of interviews with senior citizens all indicate that changes in climate and landscape have led to both floods and droughts.” Furthermore, there have been limited specific investigations into how climate change has influenced recent flooding and water scarcity events, and “no rainfall trend has been found that can explain the flood events.”

A more recent study conducted in 2020 examined land use/land cover and climate change and revealed significant urban development in the town of Babati and an intensification of crop cultivation throughout the Lake Babati Basin between 1973 and 2018. A disproportionately large area of land that was once forested in 1973 has since been converted to farmland and urban development by 2018. Additionally, due to siltation and drought, the lake's depth has decreased from 8 meters to 4 meters between 2000 and the present.81.

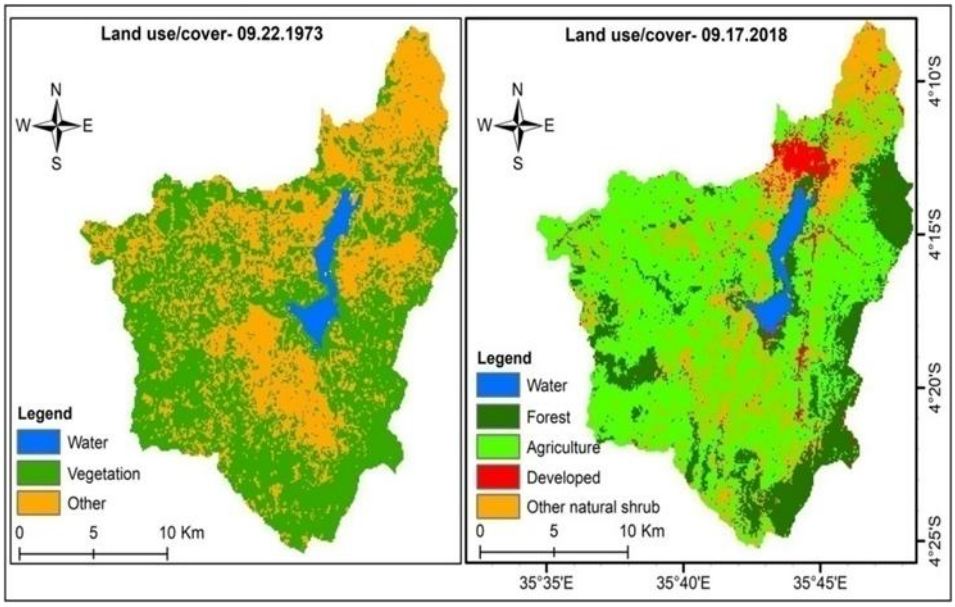


Figure 4. Land use /land cover change in Lake Babati Catchment between 1973 and 2018

Like many other parts in Tanzania, Babati district has been experiencing increasing frequency and severity of extreme climate events, including droughts, strong winds and higher temperatures[2] [3]. The detailed analysis and description of rainfall and temperature trends is presented in Figure 4. As shown, the variability of climate is significant, and under enhanced global warming, it is projected to increase further. Figure 4(a) shows a slight decreasing trend in mean annual rainfall, while Figures 4(b) and 4(c) illustrate the trends in maximum and minimum temperatures, respectively. Overall, the trends in both maximum and minimum temperatures are statistically significant, with minimum temperatures rising much faster than maximum temperatures. This indicates that, due to ongoing environmental degradation in Lake Babati and the rising trend of climate variability, the residents of Babati are already facing climate-related challenges and are likely to experience severe climate impacts in the near future. The unpredictable nature of rainfall makes it difficult for farmers to plan their agricultural production, leaving them with the option of relying on irrigation farming along the lakeshore and fishing. However, the lake is threatened by potential disappearance due to destructive activities and climate change. Consequently, the combined effects of climate variability and land degradation undermine community resilience, leading to increased poverty. Additionally, in-depth discussions with key informants and community groups indicate that the use of climate information and related services remains minimal, limiting their ability to make informed decisions for their livelihoods.

[2] Chang'a, Ladislaus Benedict, Japheth, L. P., Kijazi, A. L., Zobanya, E. H., Muhoma, L. F., Mliwa, M. A., & Chobo, J. S. (2021). Trends of Temperature Extreme Indices over Arusha and Kilimanjaro Regions in Tanzania. *Atmospheric and Climate Sciences*, *11*(03). https://doi.org/10.4236/acs.2021.113031

[3] Chang'a, Ladislaus B., Kijazi, A. L., Luhunga, P. M., Ng'ongolo, H. K., & Mtongor, H. I. (2017). Spatial and Temporal Analysis of Rainfall and Temperature Extreme Indices in Tanzania. *Atmospheric and Climate Sciences*, *07*(04), 525–539. https://doi.org/10.4236/acs.2017.74038

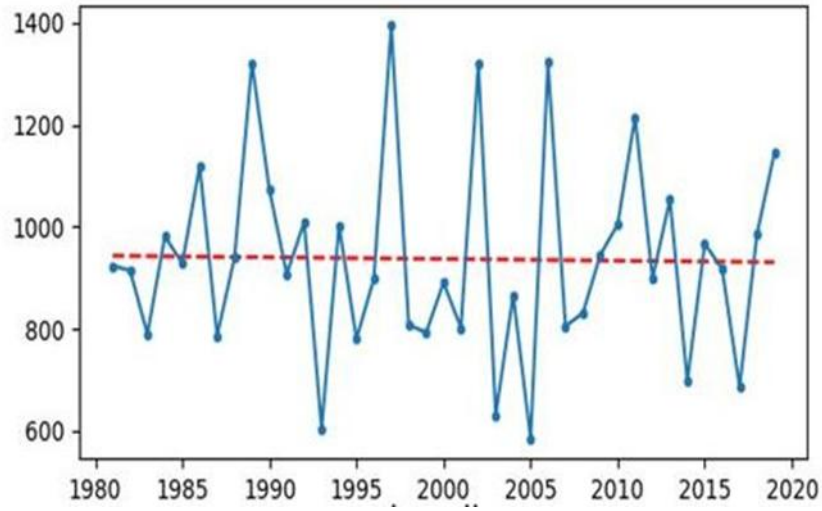


Figure 5. Mean annual rainfall for Babati district from 1981 to 2018 (mm)

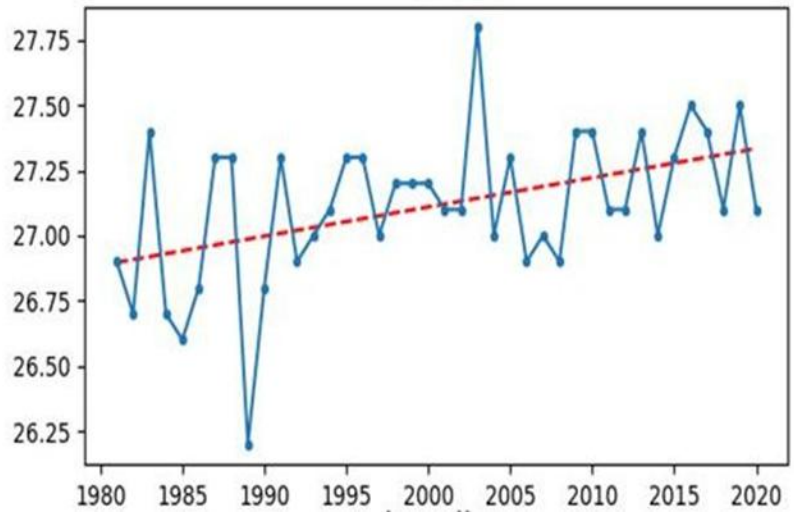


Figure 6. Mean annual maximum temperature for Babati district from 1981 to 2018 (0C)

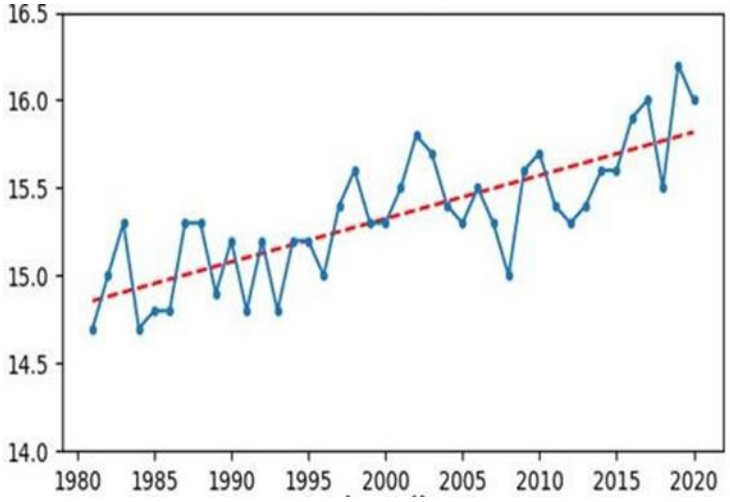


Figure 7. Mean annual minimum temperature for Babati district from 1981 to 2018 (0C)

Scope of the Project and Location of Project Areas

The project will be implemented in Babati District, particularly in the catchment and neighborhood areas of Lake Babati, which spans across both BTC and BDC. The lake faces on-site and off-site threats that ought to be addressed to foster restoration efforts and build climate change resilience of not only lake adjacent communities but also the economy of Babati district, Manyara region and the country at large. A combination of unsustainable fishing practices, unregulated agricultural expansion, overgrazing by livestock, deforestation, land use change, urban growth, and destructive brick-making activities along the lake shore has driven the degradation of the Lake Babati ecosystem. These practices have contributed to increased siltation, declining water quality, and loss of aquatic biodiversity.

To address these challenges, several national and local measures have been introduced. At the national level, the Environmental Management (Amendment) Act 2025, the Fisheries Act (2003, revised 2020), and the Water Resources Management (Amendment) Act 2022 form the primary legal framework guiding sustainable natural resource use and ecosystem protection. The National Environmental Policy (2021) and the National Fisheries Policy (2015) further emphasize integrated ecosystem management, community participation, and sustainable livelihoods as central to reversing environmental degradation.

At the local level, the Babati District Council has developed environmental by-laws that regulate fishing seasons, prohibit cultivation and livestock grazing within riparian buffer zones, and restrict clay and sand extraction near the lake shore. These measures are complemented and enforced by Village Environmental Committees (VECs), which oversee resource use and promote compliance with national and district-level regulations.

However, despite these frameworks, enforcement and coordination remain weak due to limited institutional capacity, inadequate awareness among local communities, competing livelihood needs, and climate change-related challenges. In some cases, overlapping mandates between local authorities and sectoral departments have led to fragmented interventions. Moreover, population growth, climate change, and limited access to alternative income sources have intensified pressure on natural resources, undermining compliance with existing laws and bylaws.

As a result, unsustainable resource use continues to threaten the ecological stability of Lake Babati and the livelihoods that depend on it, underscoring the need for an integrated, participatory, and livelihood-sensitive (socio-ecological) approach to restoration and conservation.

Interventions in BTC will involve 4 wards, namely Nangara, Bonga, Singe and Bagara (Figure 9). Such wards were selected due to their proximity to the lake, poverty and their climate change-related events. Moreover, most of the anthropogenic activities which adversely impact the lake are found in those wards. On the other hand, off-site threats are those emanating from deforestation and unsustainable farming practices upstream, and urbanization leading to soil erosion, which contributes to siltation and eutrophication. This results in an outgrowth of water hyacinth, water sedges, and other water weeds which block the underwater life and waterways. In particular, the water sedge has engulfed a significant portion of the lake, making boat movement impossible (Figure 8). The off-site activities occur partly in some hamlets of Babati town council and a large proportion of rural areas of Babati district council, which are upstream of the lake catchments. Interventions in BDC will involve 2 wards, namely Ayasanda and Riroba (Figure 9), whose communities practice unsustainable agricultural practices leading to soil erosion and low crop yield.



Figure 8. Water hyacinth and water sedges in the lake

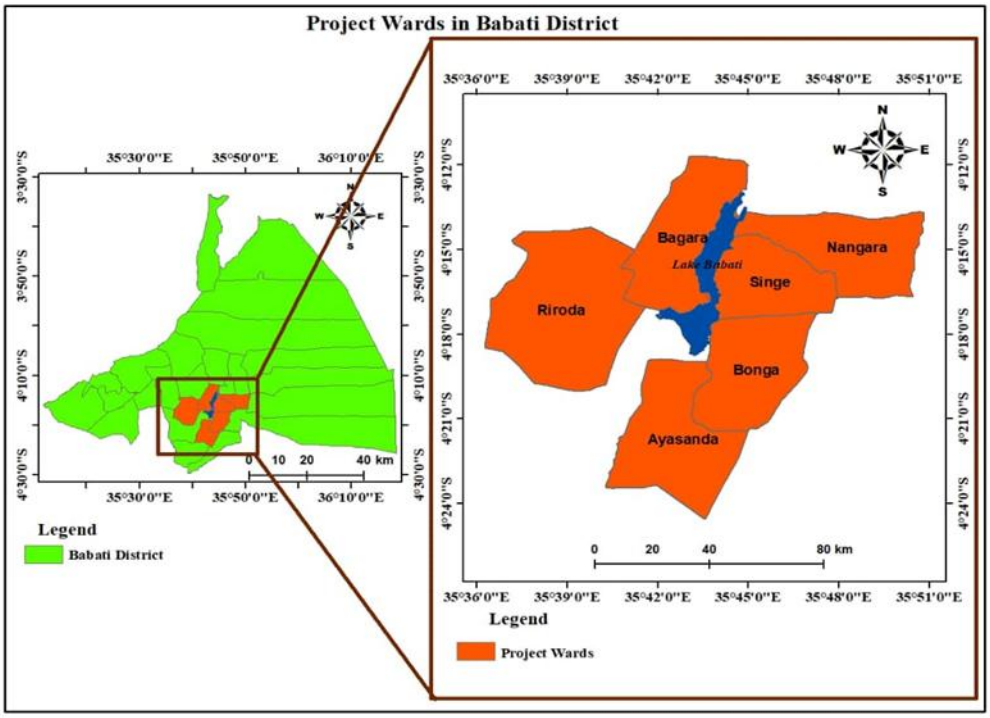


Figure 9. Project Wards in Babati District

Project/Programme Objectives:

The project will progress activities geared towards the restoration of Lake Babati and enabling climate-resilient livelihoods in climate-impacted and environmentally degraded areas of Babati District. Therefore, the project's main objective is to restore the degraded ecosystem of Lake Babati and enhance the capacity of adjacent communities and concerned institutions for climate change adaptation. Specifically, the project envisages achieving the following components:

i. To rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed.
   The component is aligned with:
   Adaptation Fund Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors.
   Adaptation Fund Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.

ii. To raise awareness and foster community participation in the restoration and protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms.
   The component is aligned with:
   Adaptation Fund Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at the local level.
   Adaptation Fund Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.

iii. To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change.
   The component is aligned with:
   Adaptation Fund Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.

iv. To establish a community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction.
   The component is aligned with:
   Adaptation fund Outcome 1: Reduced exposure to climate-related hazards and threats
   Adaptation Fund Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.
   Adaptation Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies.

v. To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning.
   The component is aligned with:
   Adaptation Fund Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses
   Adaptation Fund Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors.
   Adaptation Fund Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.
   Adaptation Fund Outcome 7: Improved policies and regulations that promote and enforce resilience measures.

Project/Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

For the case of a programme, individual components are likely to refer to specific sub- sets of stakeholders, regions and/or sectors that can be addressed through a set of well-defined interventions / projects.

Table 1. Project Components and Financing

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. To rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed.	1.1 Area (in hectares) of degraded land restored or rehabilitated through reforestation and soil conservation measures. 1.2 Number of environmentally friendly trees planted and survival rate after years. 1.3 Number of community-based watershed management plans developed and implemented. 1.4 Reduction in sediment load and soil erosion rates in tributaries feeding Lake Babati.	Improved management of Lake Babati Catchment	Component 1: 950,328 Output 1.1: 406,996 Output 1.2: 264,793 Output 1.3: 151,030 Output 1.4: 127,509
2. To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change.	2.1 Number of households adopting climate-smart agricultural and livelihood practices. 2.2 Percentage increase in household income from sustainable livelihood sources. 2.3 Number of functional climate-resilient enterprises (e.g., aquaculture, beekeeping, bricks making, eco-tourism). 2.4 Reduction in unsustainable resource use practices (e.g., illegal fishing, deforestation, overgrazing). 2.5 Percentage of target population is reporting improved food security or livelihood stability.	Enhanced climate resilience amongst communities and systems.	Component 2: 1,059,177 Output 2.1: 117,688 Output 2.2: 333,445 Output 2.3: 274,599 Output 2.4: 166,723 Output 2.5: 166,722
3. To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning.	3.1 Number of community members and institutional staff trained in ecosystem-based adaptation and watershed management. 3.2 Number of local adaptation and watershed management plans developed or updated. 3.3 Number of functional coordination or governance structures established for lake and watershed management. 3.4 Level of institutional integration of climate adaptation measures into	Local authorities and institutions demonstrate enhanced capacity for climate-resilient planning and watershed management.	Component 3: 578,626 Output 3.1: 58,844 Output 3.2: 78,458 Output 3.3: 102,977 Output 3.4: 132,397 Output 3.5: 205,950

	district and village development plans. 3.5 Percentage increase in knowledge and skills on climate adaptation among trained stakeholders (measured through pre- and post-training assessments).		
4. To establish a community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction.	4.1 Existence and functionality of a community-based monitoring and early warning system. 4.2 Number of community members trained in data collection, monitoring, and reporting. 4.3 Frequency and quality of lake water quality monitoring reports produced. 4.4 Timeliness and effectiveness of local responses to early warning alerts.	A functional community-based monitoring and early warning system enables a timely response to environmental and climate risks for sustainable lake management.	Component 4: 426,288 Output 4.1: 83,361 Output 4.2: 112,459 Output 4.3: 98,071 Output 4.4: 132,397
5. To raise awareness and foster community participation in the restoration and protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms .	5.1 Number of awareness campaigns, community dialogues, and school programs conducted. 5.2 Percentage of community members with increased knowledge of lake ecosystem conservation and climate adaptation. 5.3 Number of active community-based organizations or groups participating in restoration activities. 5.4 Number of stakeholder coordination and dialogue platforms established and operational.	Increased community awareness and engagement in Lake Babati restoration activities.	Component 5: 355,992 Output 5.1: 63,746 Output 5.2: 76,497 Output 5.3: 98,073 Output 5.4: 117,676
Total Project Component Costs			**3,370,411**
Project Execution costs			**350,225**
Total Project Costs (Components + Execution)			**3,720,636**
Project Cycle Management Fee charged by the Implementing Entity			**313,364**
Amount of financing requested			**4,034,000**

Theory of Change (Narrative)

The project's Theory of Change (ToC) is grounded in the understanding that a combination of unsustainable human activities, weak governance mechanisms, climate change-related challenges and limited livelihood alternatives for surrounding communities drives the degradation of the Lake Babati ecosystem. These pressures have led to declining water quality, loss of biodiversity, and reduced ecosystem services.

If local institutions and communities are empowered with the capacity, tools, and incentives to manage and restore natural resources collaboratively, and if sustainable livelihood options are promoted to reduce dependence on destructive practices, then ecosystem degradation will be reversed, and the lake's ecological integrity and productivity will be sustained in the long term. The project therefore adopts an integrated landscape and community-based approach, combining governance strengthening, livelihood diversification, and ecosystem restoration to achieve both ecological and socio-economic outcomes. This approach ensures that restoration efforts are not only technically sound but also socially inclusive and economically viable.

Key pathways of change include:

i. Restoration of critical ecosystems, including riparian zones, wetlands, and fish breeding areas.
ii. Enhanced community awareness and participation in sustainable resource management.
iii. Adoption of climate-smart and eco-friendly practices in farming, livestock keeping, and small-scale enterprises.
iv. Strengthened governance and enforcement of environmental and conservation bylaws at district and village levels with informed data and early warning systems.
v. Improved coordination and policy alignment, linking local actions with national frameworks for environmental and water resource management.
vi. Ultimately, these combined interventions will restore Lake Babati's ecological balance, enhance climate resilience, and sustain livelihoods for the communities that depend on the lake ecosystem. Figure 10 illustrates vividly the project theory of change and the linkage between the project overall impact/goal, outcomes, outputs, and activities.

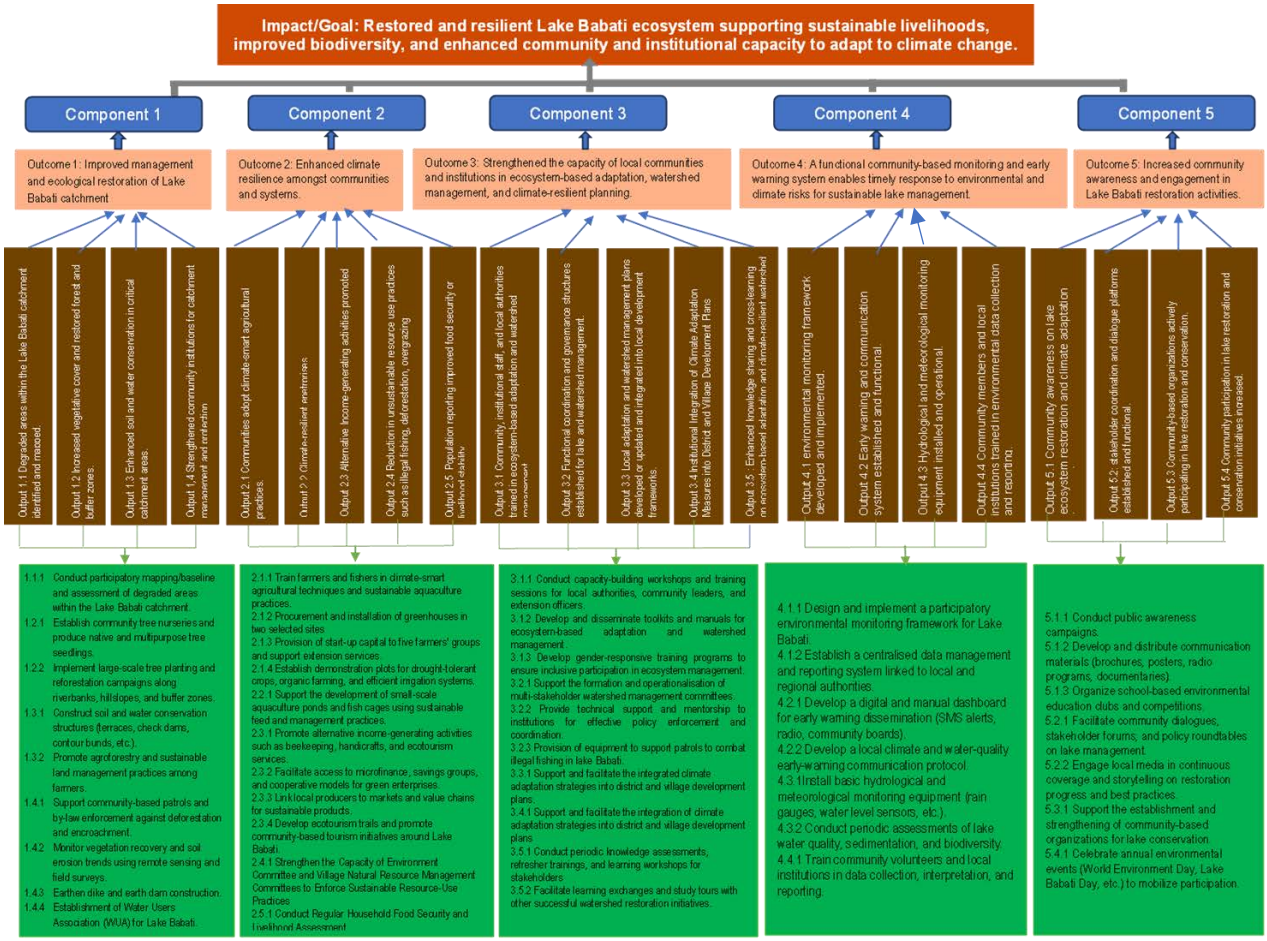


Figure 10. Project/Programme Theory of Change

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Table 2: Project Calendar

Milestones	Expected Dates
Start of Project/programme Implementation	January 2027
Mid-term Review	January 2029
Project/Programme Closing	December 2030
Terminal Evaluation	April 2031

PART II: PROJECT/PROGRAMME JUSTIFICATION

A. **Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.**

The project is conceptualized and designed in such a manner that it comprises of concrete activities which

contribute to lake ecosystem restoration and thus enhance the climate resilience of communities that solely depend on the lake as an adaptive measure for a climate-affected rainfed agriculture. Erratic rainfall patterns and prolonged dry spells limit agricultural and livestock production upstream of the lake, hence compelling the agro-pastoral communities to shift to the lowlands along the lake shoreline to access water and pastures While Lake Babati enables the communities to adapt to rainfall shortage conditions through irrigation farming, fishing and brick making, such activities are not sustainably done, leading to lake ecosystem degradation. Therefore, the proposed project is designed using the ecosystem-based adaptation concept, whereby it is envisaged that the proposed interventions for lake restoration will enhance the capacity of the lake to support sustainable and climate-smart livelihood activities, hence contributing to the climate resilience of the communities. The project will include five (5) components, the details of which are provided below.

Component 1: Rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed.

This component consists of a set of concrete activities that seek to restore the ecological integrity and productivity of the Lake Babati watershed by rehabilitating degraded catchment areas through targeted reforestation, soil and water conservation measures, and the promotion of sustainable land management practices. The interventions will stabilise eroded slopes, enhance groundwater recharge, reduce sedimentation, anthropogenic activities, and nutrient loading into the lake, and improve vegetation cover. By engaging local communities in tree planting, agroforestry, and climate-smart land use, the initiative will not only enhance ecosystem services and biodiversity but also strengthen livelihoods and resilience to climate variability across the catchment. A significant portion of the lake catchment area is severely degraded. Today many farmers in hilly slopes experience low crop yield due to soil erosion and weather variability. This resulted from deforestation activities and failure to implement soil and water management measures in their farmlands. The productive capacity of land has declined due to poor farming practices, which affect the soil health and cause unnecessary water loss. Besides poor farming practices, which cause soil erosion resulting from reduced water infiltration and increased runoff, the low crop yield is further exacerbated by rainfall shortage. In the semi-arid conditions of Babati district, it is critical to have interventions that enable sustainable management and conservation of natural resources, including water catchments.

Outcome 1: Improved management of Lake Babati Catchment

The proposed activities under outcome 1 are targeted towards improving management and restoration of the Lake Babati catchment, which will result in healthier ecosystems and enhanced community resilience. Through coordinated reforestation, soil and water conservation, and sustainable land management practices, degraded lands will be progressively rehabilitated, leading to reduced erosion, lower sediment loads, and improved water retention within the watershed. The increased vegetative cover, supported by the planting of indigenous and climate-resilient tree species, will contribute to soil stabilization and biodiversity recovery. Community-based watershed management plans will empower local stakeholders to adopt sustainable practices and to actively participate in protecting natural resources. As a result, the Lake Babati catchment will unveil clear signs of ecological recovery, with improved water quality, enhanced agricultural productivity, and strengthened local capacity for long-term resource management and climate adaptation. There are four outputs that collectively will contribute towards the achievement of outcome 1. These are briefly discussed with their respective activities below as follows.

Output 1.1 Area of degraded land restored or rehabilitated

Restoring degraded land is the foundation of climate-resilient watershed management and a critical pathway for securing livelihoods in the Lake Babati catchment. This output aims to rehabilitate 50 ha of areas severely degraded by deforestation, overgrazing, and unsustainable agricultural practices. Through reforestation, terracing, and soil stabilization measures, the project will restore ecosystem functionality, enhance soil fertility, and reduce surface runoff—thereby increasing water infiltration and retention. Restoration will directly boost agricultural productivity and strengthen the natural buffers that protect

communities against climate shocks such as floods and droughts. The resulting landscape regeneration will improve biodiversity, water security, and carbon sequestration delivering multiple adaptation and mitigation co-benefits. Measuring the hectares of land restored provides a tangible, trackable, and scalable metric for replication in other sub-catchments.

Activity 1.1.1* Conduct *participatory mapping/baseline and assessment of degraded areas within the Lake Babati catchment

At the outset of project implementation, a comprehensive participatory mapping and baseline assessment will be conducted of degraded land within the Lake Babati catchment to identify erosion hotspots, deforested areas, and degraded farmland. This exercise will be led by the District Environment Office and the project technical team, working in close collaboration with local village/street governments, and other community-based organizations (CBOs). Using GIS, drone imagery, and participatory rural appraisal tools, local communities (comprising all segments of the population, such as men, women, and youth) will contribute their knowledge of land-use changes and degradation drivers. Soil fertility, vegetation cover, and erosion levels will be quantified to create a "Catchment Degradation Atlas", which will be used to guide targeted restoration interventions. The participatory nature of the process will ensure community ownership, cost-effectiveness, and alignment with local priorities for rehabilitation and conservation.

Output 1.2 Increase in vegetative cover in targeted catchment areas (as measured by remote sensing or field surveys.

Vegetative cover is a key indicator of ecosystem health and resilience. Increasing cover through reforestation, agroforestry, and natural regeneration enhances carbon sequestration, supports wildlife habitats, and stabilizes soil and water cycles. Monitoring these changes via remote sensing and field surveys ensures accountability and demonstrates the tangible environmental benefits of project interventions. Moreover, increased vegetation contributes to microclimate regulation, providing long-term climate adaptation benefits for both natural ecosystems and human communities. The project activity under this output includes.

Activity 1.2.1 Establish community tree nurseries and produce native and multipurpose tree seedlings

Within the first year, the project will establish five (5) community-managed nurseries strategically located in degraded sub-catchments around Lake Babati to ensure equitable access to planting materials. Each nursery will be managed by trained local conservation community groups, including women and youth associations, under the supervision of district forestry and agriculture officers. These nurseries will produce a minimum of 10,000 seedlings annually, prioritizing native and multipurpose species for reforestation, agroforestry, and riparian restoration. A dedicated Training will be conducted for these conservation groups and will cover several relevant topics, including, among others, nursery establishment, seed collection, potting, pest management, and irrigation, supported by tools, shade nets, and water harvesting systems. Through this approach, communities will secure sustainable seedling supplies, create local employment, and build technical capacity for ongoing tree production beyond the project's lifespan.

Activity 1.2.2 Implement large-scale tree planting and reforestation campaigns along riverbanks, hillslopes, and buffer zones.

Starting from the second year and continuing annually throughout the project implementation period, large-scale reforestation campaigns will be implemented to restore at least 2,000 hectares of degraded hillslopes, riparian zones, and buffer areas. These campaigns will be coordinated by the project team, local environmental committees, and village governments, with strong community mobilization through schools, youth clubs, and farmer groups. Tree seedlings from community nurseries will be planted using native and climate-resilient species, with each site demarcated and geo-referenced for monitoring. Survival monitoring will occur biannually, with a target of at least 70% survival after two years. This activity will help to reduce erosion, improve water quality, enhance biodiversity, and strengthen community stewardship of natural resources.

Output 1.3 Enhanced soil and water conservation in critical catchment areas.

Engaging local communities in the development and implementation of watershed management plans is critical for ensuring sustainability. These plans define how land, water, and vegetation are managed collectively, aligning traditional knowledge with modern conservation practices. The process encourages participatory governance, where communities take ownership of interventions, such as agroforestry, controlled grazing, or riparian buffer management. Implementation of these plans ensures that land-use practices do not undermine the ecological gains achieved through reforestation and soil conservation. It also empowers communities to make informed decisions, fostering stewardship and resilience to climate change. The project activity under this output includes.

Activity 1.3.1 Construct soil and water conservation structures (terraces, check dams, contour bunds, etc.).

Between Years 2 and 3, the project will support the construction of terraces, contour bunds, and check dams across 1,500 hectares of degraded farmland and hillsides identified through the watershed management plans. Implementation will be community-driven using a cash-for-work model, with technical design and supervision provided by district engineers and agricultural officers. Farmers and community conservation groups will receive hands-on training in layout, construction, and maintenance techniques to ensure sustainability. Priority areas will include erosion-prone slopes and farmlands adjacent to watercourses. The structures will be vegetatively reinforced with grass and shrubs to reduce runoff, enhance infiltration, and retain topsoil. Monitoring by local committees will ensure functionality and long-term maintenance of these vital climate adaptation assets.

Activity 1.3.2 Promote agroforestry and sustainable land management practices among farmers.

Throughout the project period, at least 2,000 farmers, 60% of them women, will be trained and supported to adopt climate-smart agriculture and agroforestry practices across the targeted project wards. The activity will be led by the District Agriculture Office in collaboration with local extension officers and farm field schools. Demonstration plots will be established in each participating village to showcase best practices such as intercropping, contour planting, mulching, crop rotation, and integration of fruit and fodder trees. Farmers will be provided with seedlings, composting materials, and technical backstopping to enhance adoption. Peer-to-peer learning exchanges and farmer competitions will sustain motivation. These practices will improve soil fertility, increase yields, reduce erosion, and build household resilience to climate variability.

Output 1.4 Reduction in sediment load and soil erosion rates in tributaries feeding Lake Babati.

Sedimentation of Lake Babati due to soil erosion poses significant risks to water quality, aquatic life, and downstream water users. This output directly addresses these risks through interventions such as contour planting, check dams, gabions, and grass strips, which slow water flow and trap sediments. Reduced erosion preserves fertile topsoil, enhances agricultural productivity, and decreases the incidence of downstream flooding. Quantifying reductions in sediment load provides strong evidence of ecological improvement and ensures that the project contributes to both environmental sustainability and community welfare. Project activity under this output includes.

Activity 1.4.1 Support community-based patrols and by-law enforcement against deforestation and encroachment

By the end of year one of project implementation, five (5) community-based forest patrol units will be established and trained under village natural resource committees (VNRC) to safeguard restored and forested areas. The patrols comprising both men and women volunteers will work alongside local government and enforcement authorities to monitor illegal logging, charco burning, and land encroachment. They will be equipped with uniforms, GPS trackers, and reporting templates, conducting monthly surveillance and submitting reports to ward and district authorities. Awareness sessions and joint patrols will strengthen community compliance and accountability, aiming for at least a 60% reduction in deforestation incidents at the end of project implementation. Furthermore, the activity will contribute to the enactment of at least three (3) conservation-related by-laws and the approval of one integrated land-use plan**,** formalizing sustainable land management practices and institutionalizing community stewardship.

This approach institutionalizes local stewardship and reinforces conservation bylaws within the Lake Babati catchment area.

Activity 1.4.2 Monitor vegetation recovery and soil erosion trends using remote sensing and field surveys
Beginning in Year 1, a joint monitoring system will be established combining satellite imagery, drone surveys, and ground-based sediment measurements to track vegetation recovery and erosion dynamics across intervention zones. This activity will be coordinated by the project's Monitoring & Evaluation officer and district technical departments, with participation from trained community monitors. Sediment traps and turbidity sensors will be installed in major tributaries to measure sediment load quarterly, while field vegetation surveys will assess canopy cover and root stabilization effects. Data will be analyzed and shared in annual reports and community feedback meetings, enabling adaptive management and informed decision-making on future interventions.

Activity 1.4.3 Earthen dike and earth dam construction
This activity aims to enhance water retention, reduce soil erosion, and strengthen climate resilience through the construction of 4 kilometres of earthen dikes along the Lake Babati buffer and two (2) charco dams in strategic upstream areas. The earthen dikes will control surface runoff, reduce sediment inflow, and stabilize the lake's shoreline, thereby preventing siltation and protecting the buffer zone from encroachment. The charco dams will capture and store rainwater and surface runoff, holding up to 20,000 cubic meters collectively for agricultural irrigation, livestock watering, and limited domestic use during dry seasons. Site selection for both interventions will be guided by hydrological assessments and community consultations to ensure technical soundness, equity, and sustainability. Construction will be supervised by district engineers, with local labour engaged through cash-for-work arrangements to promote ownership and income generation.

Activity 1.4.4 Establishment of Water Users Association (WUA) for Lake Babati
Under this activity, a legally recognized Lake Babati Water Users Association (WUA) will be established to coordinate equitable and sustainable water resource management. The WUA will comprise representatives from village water committees, farmers, livestock keepers, women's groups, and local authorities, with at least 50% female representation. Supported by the project, the WUA will develop and enforce bylaws on water use, resolve water resource conflicts, and oversee maintenance of dikes and dams. Regular meetings, annual general assemblies, and public audits will ensure accountability and transparency. The WUA will be trained in leadership, governance, and financial management, and will enable the association to function as a long-term institutional mechanism sustaining the project's water and ecosystem gains.

Component 2: Promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change.

This objective aims to diversify and strengthen the livelihoods of communities around Lake Babati by promoting sustainable, climate-resilient economic activities. By introducing **climate-smart agriculture**, **sustainable aquaculture**, and **eco-tourism initiatives**, the project seeks to reduce dependency on unsustainable resource extraction and land-use practices that contribute to ecosystem degradation. These interventions will improve household incomes, enhance food security, and build adaptive capacity against climate variability. In doing so, the project will create incentives for conservation, foster local entrepreneurship, and ensure that community development aligns with environmental sustainability and long-term ecosystem health. Like other districts of Tanzania, the livelihoods of communities in Babati district depend on climate sensitive resources. Thus, it is important that adaptation strategies that target climate resilient livelihoods are promoted. Livelihood integration and diversification is recommended so as to maximize the resilience. This is because reliance on only one means of livelihood may risk increased climate vulnerability if that livelihood activity fails. Integration of livelihoods increases cost effectiveness as may generate some co-benefits and synergies. For example, the integration of tree planning, aquaculture

and beekeeping on the same farm creates synergies. Trees protect soils and enhance water infiltration in the soil, poultry farms supplies manure to the fishponds. The nutrient-rich water from the fishponds is then used to irrigate horticultural crops adjacent to the fishponds. Thus, this kind of integration enhances productivity while ensuring cost effectiveness. Furthermore, beekeeping may be integrated in the same farm for enhanced pollination and increased income accruing from sale of honey. About 1000 farm households are expected to benefit from the livelihood intervention in both BTC and BDC directly; and 20,000 farm households will benefit indirectly. The adoption of integrated climate resilient and environment friendly livelihoods is envisaged to improve the household income by at least 20% by the end of the project. This will eventually contribute to climate resilience of local communities in Babati district.

Outcome 2: Enhanced climate resilience amongst communities and systems

This second project outcome reflects on strengthened community resilience within the Lake Babati catchment, where households will transition from climate-vulnerable and resource-dependent livelihoods to diversified, climate-smart, and sustainable practices that will safeguard incomes and ecosystems. Through the promotion of climate-smart agriculture, sustainable aquaculture, and community-based eco-tourism, communities will be equipped with the knowledge, technologies, and financial means to withstand and recover from climate-induced shocks such as droughts and erratic rainfall. The proposed interventions under this outcome will strengthen adaptive capacity, promote sustainable natural resource management, and enhance economic stability, particularly for women and youth, thereby reducing vulnerability and ensuring that livelihoods and ecosystems remain productive, inclusive, and resilient under a changing climate.

Output 2.1: Number of Households Adopting Climate-Smart Agricultural and Livelihood Practices

This output aims to transform livelihoods and production systems in the Lake Babati catchment by enabling at least 300 smallholder farming and fishing households to adopt climate-smart agricultural (CSA) and sustainable livelihood practices that enhance productivity, conserve resources, and build resilience to climate-induced shocks such as prolonged droughts, erratic rainfall, and soil degradation. The intervention responds directly to local climate risks by promoting technologies and management systems that increase resource efficiency, improve water use, and protect ecosystems while sustaining household incomes. The initiative will be implemented jointly by the District Agriculture and Fisheries Offices, community-based organizations, and local training institutions, with strong participation of women, youth, and vulnerable groups. Capacity building, demonstration learning, and access to capital will be integrated to ensure that adoption of CSA practices is not only achieved but sustained beyond the project period. The proposed activities under this output include, among others;

Activity 2.1.1 Train farmers and fishers in climate-smart agricultural techniques and sustainable aquaculture practices.

The project will first build capacity among farmers and fishers through a structured, practical learning approach. Several training sessions will be conducted for at least 500 farmers and fishers. These sessions will be delivered through farmer field schools (FFS), community training centers, and demonstration farms. The sessions will cover several topics, including, among others, climate-smart agriculture, integrated soil fertility and pest management, agroforestry, efficient water harvesting and irrigation systems, and climate-resilient aquaculture practices such as sustainable feed production, stocking density management, and water quality control. Agricultural and fisheries extension officers, supported by experts from relevant district departments, will lead the training, ensuring that the curriculum blends indigenous knowledge with modern scientific technologies. Participants will be mentored through seasonal follow-up visits and peer-to-peer exchange visits, ensuring practical application. By Year 2, at least 300 (60%) of participants are expected to have adopted CSA or aquaculture practices, leading to improved yields and reduced vulnerability to climate shocks.

Activity 2.1.2 Procurement and installation of greenhouses in two selected sites

To support consistent food production and income generation, two fully functional community greenhouses will be established in strategic sub-catchments. Implemented through local contractors and youth groups,

the greenhouses will provide controlled-environment farming for high-value horticultural crops such as tomatoes, peppers, and leafy greens, enabling year-round production regardless of rainfall variability. Farmer groups managing these facilities will be trained in greenhouse operation, irrigation scheduling, pest management, and marketing. This will directly increase household income while reducing dependence on open field rainfed agriculture, one of the major sources of climate vulnerability in the catchment.

Activity 2.1.3 Provision of start-up capital to five farmers' groups and support extension services.
Under this activity, the project will provide start-up capital and extension support to five organized farmer groups, each consisting of approximately 25 members, to accelerate the adoption of climate-smart techniques. These grants will be administered transparently through existing local government financial systems, and they will enable investments in improved tools, small-scale irrigation equipment, drought-tolerant seed varieties, and organic fertilizers. Continuous mentorship from extension officers will guide beneficiaries in business planning, record-keeping, and reinvestment strategies. The initiative will strengthen the economic viability of CSA adoption by ensuring that farmers have both the knowledge and resources to implement and sustain new climate-smart technologies, particularly those that conserve water, reduce emissions, and restore degraded soils.

Activity 2.1.4 Establish demonstration plots for drought-tolerant crops, organic farming, and efficient irrigation systems.
To enhance learning and replication, this project will establish four demonstration plots across representative agro-ecological zones in the Lake Babati catchment during the first year of implementation. These plots, managed jointly by the project, district technical teams, and local farmer committees, will showcase integrated CSA practices such as drought-tolerant crop varieties, intercropping systems, mulching, composting, and efficient irrigation technologies like drip systems and soil moisture conservation. Each site will serve as a "living classroom" where at least 500 farmers per season will participate in hands-on demonstrations and peer learning sessions. Partnerships with agricultural research institutions and NGOs will ensure access to improved technologies and evidence-based best practices. Field days and exchange visits will foster cross-community learning and accelerate replication of successful models in the targeted project areas.

Output 2.2: Percentage Increase in Household Income from Sustainable Livelihoods
This project aims to increase the average household income of local communities in Lake Babati catchment by at least 20 percent by the end of the project lifespan through the development of sustainable, climate-resilient livelihood options that will enhance productivity while safeguarding ecosystems. It aims to directly link environmental conservation with economic empowerment by promoting diversified income-generating activities such as aquaculture, beekeeping, eco-tourism, and small-scale green enterprises. Implementation will be led by the District Agriculture, Livestock, and Fisheries Departments, working collaboratively with village governments, community-based organizations, and local cooperatives. Strong emphasis will be placed on ensuring that at least 60 percent of direct beneficiaries are women and youth, recognizing their high vulnerability to the impacts of climate change and low incomes. The initiative builds on the improved natural resource base created under Component 1, converting ecological restoration into tangible economic benefits that strengthen long-term community resilience, particularly for those who are disproportionately impacted by the changing climate.

Activity 2.2.1 Support the development of small-scale aquaculture ponds and fish cages using sustainable feed and management practices.
Under this activity, the project will promote sustainable aquaculture as a profitable and environmentally sound livelihood option. At least four small-scale fishponds and five floating cages will be established in strategic villages, benefiting approximately 100 households. Implementation will involve community cooperatives, local artisans, and fisheries extension officers under the supervision of the District Fisheries Department. Targeted training will be provided to the relevant individuals (mentioned above) to equip them with theoretical knowledge and practical skills in suitable site selection, construction, and management; appropriate stocking densities; sustainable feed formulation using local ingredients; and environmentally

friendly waste and water management techniques. Beneficiaries will also receive start-up fingerlings, feed inputs, and technical mentoring for at least two production cycles. The activity will diversify income sources, improve nutrition by increasing fish availability, and reduce pressure on overfished natural water bodies, such as Lake Babati. By the end of Year 3, households engaged in aquaculture are expected to record at least a 20% increase in monthly/annual income.

Output 2.3: Functional Climate-Resilient Enterprises Established and Operational

Establishment and operation of at least 15 functional, climate-resilient enterprises across the Lake Babati catchment will enhance community livelihoods, promote inclusive economic growth, and reduce dependence on environmentally destructive practices. These enterprises will be economically viable, socially inclusive, and environmentally sustainable, enabling communities to diversify income streams through beekeeping, aquaculture, eco-tourism, handicrafts, and small-scale green industries such as sustainable brickmaking. The output strengthens local adaptive capacity by linking nature-based solutions with livelihood diversification, ensuring that communities can withstand and recover from climate-induced shocks. Implementation will be coordinated by the District Cooperative, Tourism, and Natural Resources Offices in collaboration with community-based organizations, local financial institutions, private sector actors, and producer cooperatives, with at least 50 percent participation by women and youth. To achieve this output, the project will support communities through targeted training, access to finance, market linkages, and eco-enterprise development across different agro-ecological zones of the catchment. The following activities will be implemented under this output:

Activity 2.3.1 Promote alternative income-generating activities such as beekeeping, handicrafts, and ecotourism services.

Under this activity, the project will promote alternative income-generating activities that are environmentally friendly and climate-resilient. By the end of Year 2, at least 5 new climate-resilient enterprises will be established, including beekeeping cooperatives, handicraft groups, and eco-tourism ventures. The new eco-tourism ventures include, among others, hippo watching-point, bird watching, or guided lake tours. Beneficiaries will receive training in business management, production, and environmental compliance, as well as start-up inputs such as beehives, processing tools, and marketing materials. Beekeeping groups will learn hive management, honey harvesting, and packaging, while artisans and tourism operators will receive support in sustainable materials use, branding, and eco-cultural promotion.

Activity 2.3.2 Facilitate access to microfinance, savings groups, and cooperative models for green enterprises.

Through this activity, the project will facilitate access to microfinance, savings groups, and cooperative models for green enterprise financing. At least ten community Savings and Credit Cooperative Societies (SACCOs) will be established and linked to local microfinance institutions. Members will receive training in financial literacy, bookkeeping, and cooperative governance to enhance savings mobilization and responsible lending. By Year 3, these groups are expected to collectively mobilize at least USD 10,000 in savings to support the growth and sustainability of green enterprises.

Activity 2.3.3 Link local producers to markets and value chains for sustainable products.

Under this activity, the project will strengthen market access and value chain integration for local producers of sustainable products. By the end of Year 2, at least eight producer groups will establish formal partnerships with cooperatives, private buyers, or distributors for products such as honey, organic crops, and fish. Training will be provided on product quality assurance, value addition, packaging, and branding, with support for participation in trade fairs and digital marketing platforms. These linkages will ensure reliable market outlets and increase producer income by at least 15 percent, verified through sales data and partnership agreements.

Activity 2.3.4 Develop ecotourism trails and promote community-based tourism initiatives around Lake Babati.

This activity will promote community-based eco-tourism as a nature-positive economic opportunity. By Month 24, the project will develop two eco-tourism trails and three community-managed tourism facilities around Lake Babati. Community members will be trained as guides, conservation stewards, and hospitality providers to ensure that tourism activities adhere to environmental and cultural standards. The initiative will benefit at least 50 households, generate local employment, and raise awareness of ecosystem conservation.

Output 2.4 Reduction in unsustainable resource use practices such as illegal fishing, deforestation, overgrazing, etc.

This output reinforces the outcomes of preceding interventions by addressing the root causes of environmental degradation within the Lake Babati catchment. It builds directly on the achievements of Output 2.1 (adoption of climate-smart agriculture) and Output 2.3 (enterprise development), ensuring that improved production systems and alternative livelihoods translate into measurable reductions in unsustainable practices such as illegal fishing, deforestation, and overgrazing. Training delivered under Output 2.1 equips farmers and fishers with climate-resilient production techniques, while the livelihood diversification promoted under Output 2.3 provides economic alternatives that reduce pressure on fragile natural resources. To consolidate these gains, this output focuses on community-level behavior change, enforcement, and stewardship. Local groups will be empowered to monitor resource use, enforce bylaws, and promote collective responsibility for land and water conservation. The result will be a shift from exploitative resource dependence to community-led management systems that sustain both livelihoods and ecosystems.

Activity 2.4.1 Strengthen the Capacity of Environment Committee and Village Natural Resource Management Committees to Enforce Sustainable Resource-Use Practices

This activity will enhance the effectiveness of existing environmental or natural resource committees in promoting and enforcing sustainable resource-use practices within the Lake Babati catchment. The project will provide targeted training to committee members on environmental governance, by-law enforcement, participatory monitoring, conflict resolution, and climate adaptation planning. Working with the District Natural Resources, Agriculture, and Fisheries Offices, the committees will conduct community awareness campaigns, joint patrols, and dialogue forums to curb illegal fishing, deforestation, and overgrazing. VNRMCs will be supported with monitoring tools and reporting templates to document resource-use trends and ensure compliance with local by-laws. They will collaborate with village leaders, traditional institutions, and user groups to promote voluntary adherence to sustainable practices. By the end of the project, at least five functional VCRMCs will be actively managing local resources, reducing unsustainable exploitation, and strengthening community ownership of ecosystem protection efforts across the Lake Babati catchment.

Output 2.5 Percentage of target population reporting improved food security or livelihood stability.

This output builds upon the achievements of Outputs 2.1, 2.2, and 2.3 by consolidating improvements in productivity, income diversification, and enterprise development into measurable outcomes on household food security and livelihood stability. The activities under the above-mentioned outputs will equip communities with climate-smart farming skills, diversified income sources such as aquaculture and eco-tourism, and access to financial services. Output 2.5 ensures that these advances result in tangible and sustained improvements in nutrition, dietary diversity, and household economic resilience. By monitoring and documenting the impacts of these interventions, the project will provide evidence of how climate-smart and inclusive livelihood strategies translate into improved well-being and reduced vulnerability to shocks. Special attention will be given to women and youth, ensuring that they benefit equitably from increased food production and stable incomes, thereby enhancing community resilience at both household and system levels.

Activity 2.5.1 Conduct Periodic Household Food Security and Livelihood Assessment

This activity will establish a robust monitoring and learning mechanism to track how project interventions contribute to improved household food security and livelihood stability over time. The project, in

collaboration with the District Agriculture and Community Development Offices, will design and conduct baseline, mid-term, and end-line household surveys across all targeted communities. The surveys will be conducted annually from year 2 to assess indicators such as household dietary diversity, number of food-secure months, income stability, and coping capacity during climate shocks. The data collection process will combine quantitative surveys with focus group discussions and key informant interviews, ensuring that community voices, especially those of women and youth, inform adaptive management and planning. The results will help identify success stories, highlight gaps, and guide adjustments in implementation (for example, targeting additional support to households that remain food insecure). In addition to informing project performance, the surveys will strengthen local capacities in data collection, analysis, and the use of evidence for decision-making. District staff and community enumerators will be trained in participatory monitoring techniques, ensuring sustainability beyond the project period. Findings will be disseminated through community meetings and district planning forums to inform people about broader local development strategies. By project completion, at least 70% of targeted households are expected to report improved food availability and livelihood stability, verified through these periodic assessments.

Component 3: To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning.

Institutional capacity building for planning and management of climate adaptation actions is key to successful interventions. This component focuses on empowering local communities, government authorities, and key institutions in the Lake Babati catchment to plan, implement, and monitor ecosystem-based adaptation (EbA), climate-resilient watershed management, and climate-resilient planning, which include integration of climate aspects into local government plans and budgeting. It promotes coordinated governance, participatory decision-making, and integration of climate adaptation measures into district plans and budgeting. Through targeted training, institutional support, and knowledge sharing, the component will establish a network of skilled practitioners and functional governance structures capable of driving long-term adaptation efforts beyond the project lifespan.

Outcome 3: Local authorities and institutions demonstrate enhanced capacity for climate-resilient planning and watershed management.

Activities under Component 3 will result in strengthened institutional and community capacity for ecosystem-based adaptation, watershed management, and climate-resilient planning in Babati District Council. Through targeted training, mentorship, and development of practical tools, local authorities, institutions, and communities will be equipped to integrate climate adaptation into planning, budgeting, and natural resource management. The project will strengthen coordination through multi-stakeholder watershed committees and task forces, promote gender-responsive participation, and enhance enforcement of environmental bylaws. Climate adaptation measures will be mainstreamed into district and village development plans, ensuring long-term sustainability. Knowledge sharing, learning exchanges, and dissemination of lessons will further build a network of skilled practitioners capable of sustaining climate-resilient development beyond the project's duration.

Output 3.1: Community Members and Institutional Staff Trained in Ecosystem-Based Adaptation and Watershed Management.

To achieve this output, community members and institutional staff will be trained in ecosystem-based adaptation, watershed management, and climate-resilient practices to strengthen technical and community-level capacity for implementing and sustaining project interventions. Training will be led by the District Environmental and Agriculture Offices in partnership with local NGOs and national training institutions, using participatory, hands-on modules that combine theory with field demonstrations. Topics will include watershed restoration, climate risk assessment, sustainable land use, and gender-responsive adaptation. Continuous mentoring and exchange visits will reinforce learning, while pre- and post-training evaluations will measure a minimum 70% improvement in participants' knowledge and skills, ensuring a skilled network capable of driving long-term adaptation actions.

Activity 3.1.1.: Develop gender-responsive training programs to ensure inclusive participation in ecosystem management

Recognizing that climate impacts and adaptation capacities differ by gender, this activity will ensure that all capacity-building efforts are gender-responsive and socially inclusive. This activity will be preceded by a training needs assessment, which will provide crucial information on the design of the training programme. The project will design specialized training modules targeting women, youth, and marginalized groups, focusing on their roles in forest restoration, sustainable agriculture, and water resource management. Female extension officers and community facilitators will be prioritized in delivery to encourage participation and leadership. The project will also establish mentorship programs linking experienced practitioners with emerging women leaders in ecosystem management. This inclusive approach will enhance gender equity, strengthen social cohesion, and ensure that adaptation interventions reflect the needs and priorities of all community members.

Activity 3.1.2: Conduct capacity-building workshops and training sessions for local authorities, community leaders, and extension officers

This activity will involve organizing comprehensive training workshops targeting district and ward-level officers, village environmental committees, and farmer group leaders across the Lake Babati catchment. At least 120 individuals (40% women, 30% youth) will be trained under this activity. The trainings, facilitated by experts from relevant ministries, universities, and the National Environment Management Council, will cover key topics such as climate risk assessment, soil and water conservation, integrated watershed management, and participatory ecosystem restoration. Each session will combine theoretical lessons with field-based practical demonstrations in selected micro-catchments to ensure experiential learning. Training schedules will be tailored to local agricultural calendars to maximize attendance, and refresher sessions will be conducted annually to reinforce knowledge. By the end of the second year, participants will be equipped with the technical and managerial skills to design, implement, and monitor community-level adaptation interventions.

Activity 3.1.3: Develop and disseminate toolkits and manuals for ecosystem-based adaptation and watershed management

This activity will focus on producing practical, user-friendly toolkits, manuals, and visual learning materials that guide local practitioners in implementing EbA and watershed interventions. Developed collaboratively with technical experts and validated through stakeholder consultations, the toolkits will cover areas such as ecosystem mapping, restoration techniques, community-based monitoring, and climate-smart land use. Materials will be translated into Kiswahili and distributed to all participating institutions, schools, and community-based organizations. Dissemination will occur through workshops, farm field schools, and digital platforms, ensuring accessibility even in remote areas. The toolkits will serve as reference materials for ongoing training, scaling, and replication of best practices beyond the project period.

Output 3.2: Local Adaptation and Watershed Management Plans Developed or Updated

At least ten community-based adaptation and watershed management plans will be developed or updated through participatory planning processes that engage village governments, Water Users Associations, farmer organizations, women's groups, and district authorities. Facilitated by the District Planning and Environmental Offices, the plans will integrate local knowledge with scientific assessments to identify priority adaptation actions such as reforestation, soil conservation, and sustainable water use. Each plan will be validated in public forums, endorsed by local councils, and incorporated into district planning and budgeting systems. This process will institutionalize climate adaptation at the local level, ensuring that resource allocation and land-use decisions are evidence-based, inclusive, and climate-resilient.

Activity 3.2.1: Support the formation and operationalization of multi-stakeholder watershed management committees

This activity will establish and operationalize watershed management committees at catchment and sub-catchment levels to coordinate planning and implementation of EbA activities. Each committee will include

representatives from village governments, WUAs, farmer groups, women's associations, traditional leaders, and private sector stakeholders. The committees will be legally recognized under the district environmental bylaws and trained in participatory decision-making, monitoring, and resource mobilization. The project will provide initial logistical support, such as meeting facilities and facilitation allowances, for the committees to function effectively. Regular quarterly meetings will be held to review progress, resolve conflicts, and align activities with district development plans. These governance bodies will serve as long-term coordination platforms for watershed protection and climate adaptation efforts.

Activity 3.2.2: Provide technical support and mentorship to institutions for effective policy enforcement and coordination

This activity will build the technical and operational capacity of district and village institutions responsible for implementing adaptation policies. Through mentorship programs, environmental officers, ward extension agents, and planning staff will receive hands-on coaching in policy enforcement, environmental governance, and coordination mechanisms. Mentorship will be delivered jointly by the District Natural Resources Office and experienced institutions such as the Lake Zone Catchment Authority. On-the-job training will be complemented by experience-sharing sessions and the development of monitoring templates to track compliance with adaptation and conservation by-laws. This support will ensure that local institutions can enforce sustainable land use regulations and maintain accountability in ecosystem management.

Output 3.3: Functional Coordination and Governance Structures Established for Lake and Watershed Management

A multi-stakeholder governance structure, Lake Babati Ecosystem Management Committee, will be established and fully operational to coordinate watershed and climate adaptation efforts. Supported by the District Natural Resources and Water Departments, the committee will facilitate joint planning, cross-sectoral coordination, and enforcement of bylaws on sustainable resource management. Members will receive training in leadership, conflict resolution, and climate governance, ensuring transparent and inclusive decision-making. By the end of Year 3, these institutions will function as formal coordination platforms that harmonize local adaptation actions with regional and national frameworks, ensuring long-term continuity of watershed management.

Activity 3.3.1: Provision of equipment to support patrols to combat illegal fishing in Lake Babati

To address illegal and unsustainable practices threatening Lake Babati's ecosystem, the project will procure and supply essential equipment, including boats, protective gear, communication radios, and monitoring tools to support community-based patrol teams. These patrols, composed of trained local volunteers under the supervision of district fisheries officers, will conduct regular surveillance to prevent illegal fishing, deforestation, and encroachment around the lake and its tributaries. The project will also develop standard operating procedures and coordinate with local law enforcement to ensure effective enforcement of bylaws. This intervention will reduce illegal activities, promote sustainable fisheries management, and protect the ecological integrity of Lake Babati and its catchment.

Output 3.4: Institutional Integration of Climate Adaptation Measures into District and Village Development Plans

Climate adaptation measures will be mainstreamed into at least six district and village development plans, ensuring that resilience priorities are embedded in formal governance and resource allocation processes. The District Planning and Environmental Departments will receive technical assistance and training on risk-sensitive planning, climate budgeting, and ecosystem-based adaptation integration. Adaptation actions such as sustainable agriculture, afforestation, and water conservation will be incorporated into local plans with measurable indicators and allocated budgets. Verification will be based on approved plans and budget records, demonstrating institutional ownership and alignment with national climate adaptation policies. This integration will ensure that adaptation becomes a permanent, budgeted element of local development planning.

Activity 3.4.1: Support and facilitate the integration of climate adaptation strategies into district and village development plans

This activity will provide technical assistance and facilitation support to Babati District planning teams for mainstreaming adaptation priorities into Babati District Development Plans. The project will organize planning workshops with district officers, ward councils, and village assemblies to integrate ecosystem-based adaptation, sustainable land management, and climate-smart agriculture into sectoral and spatial plans. The process will include revising planning templates to incorporate climate risk indicators and resource allocation guidelines. The District Environmental and Planning Offices will coordinate this effort, supported by external technical advisors to ensure consistency with national adaptation and environmental policies. The result will be the institutionalization of climate adaptation across multiple governance levels, ensuring sustainability beyond the project's lifespan.

Output 3.5: Increased Knowledge and Skills on Climate Adaptation Among Trained Stakeholders

Under this output, at least 70% of targeted community members, district staff, and other relevant stakeholders demonstrate increased knowledge and awareness on climate adaptation. Continuous mentoring, refresher sessions, and cross-district learning exchanges will reinforce technical capacity, while success stories and policy briefs will be documented and disseminated, respectively, through print and digital platforms. Knowledge management activities will be led by the District Environmental Office and the project M&E unit, ensuring that lessons learned are captured, applied, and shared for replication. By project end, trained individuals and institutions will demonstrate improved decision-making and proactive management of climate risks, sustaining the project's impact beyond its implementation period.

Activity 3.5.1: Conduct periodic knowledge assessments, refresher training, and learning workshops for stakeholders

This activity will focus on reinforcing and tracking learning outcomes among project beneficiaries and institutional partners. The project will conduct pre- and post-training assessments to measure improvements in participants' understanding of ecosystem-based adaptation, watershed management, and climate risk planning. Refresher trainings and learning workshops will be organized twice a year for community leaders, extension officers, and local government staff to update them on emerging climate adaptation practices, technologies, and policy developments. Workshops will include case study discussions, peer-to-peer learning sessions, and practical field demonstrations to ensure applied learning. These continuous capacity-strengthening efforts will help translate knowledge into effective action, resulting in better resource management, informed planning, and adaptive decision-making across the catchment.

Activity 3.5.2: Facilitate learning exchanges and study tours with other successful watershed restoration initiatives

The project will organize four inter-district and regional learning exchanges and study tours for local leaders, extension officers, and watershed committee members to visit successful ecosystem restoration and climate adaptation initiatives within Tanzania and the broader East African region. Participants will learn from proven practices in community-based water management, sustainable financing models, eco-enterprise development, and participatory monitoring systems. The activity will be coordinated by the District Environmental Office and partner institutions, with documentation of lessons learned for replication in Lake Babati. Post-visit debriefs will be used to develop local action plans applying new approaches within their respective areas. This initiative will strengthen institutional networks, foster innovation, and promote continuous improvement in local climate governance and ecosystem management.

Component 4: Establishing a Community-Based Monitoring and Early Warning System for Sustainable Lake Management, Water Quality Protection, and Climate Risk Reduction

This component focuses on strengthening local adaptive capacity and environmental governance through the establishment of community-based monitoring and early warning systems (CBMEWS). It aims to enable timely detection, reporting, and response to environmental and climatic risks affecting Lake Babati and its surrounding catchment. The system will integrate traditional ecological knowledge, community-based observations, and modern technologies to monitor changes in water quality, hydrology, and climate

conditions. The component will enhance coordination among communities, district institutions, and regional authorities to prevent environmental incidents such as water pollution, while safeguarding ecosystem services and livelihoods. Through training, data-driven decision-making, and rapid communication protocols, communities will transition from reactive crisis response to proactive climate risk management and ecosystem stewardship.

Outcome 4: A functional community-based monitoring and early warning system enables a timely response to environmental and climate risks for sustainable lake management.
Under this outcome, the project will enable local communities and institutions to develop the capability to anticipate, detect, and respond to environmental threats such as pollution and declining water quality across the Lake Babati catchment. The system will integrate traditional knowledge with modern monitoring tools to ensure timely decision-making and adaptive management. By project completion, communities will be able to access, interpret, and act upon early warning information, contributing to improved lake ecosystem health and reduced vulnerability to climate risks.

Output 4.1: Functional community-based monitoring and early warning system (CBMEWS) established and operational.
This output establishes a functional Community-Based Monitoring and Early Warning System (CBMEWS) for Lake Babati to enhance local capacity for timely detection and response to environmental and climate-related risks. The system integrates traditional knowledge, community observations, and modern monitoring technologies to track key indicators such as water quality, sedimentation, and rainfall. The system will institutionalize data collection, reporting, and coordination between communities, district authorities, and regional agencies. By project end, local stakeholders will be equipped to generate and act on real-time data, ensuring proactive and evidence-based management of the Lake Babati ecosystem.

Activity 4.1.1: Design and implement a participatory environmental monitoring framework for Lake Babati
This activity will involve the co-design of a participatory monitoring framework engaging local communities, Water Users Associations (WUAs), fisheries officers, and district environmental experts. The framework will define key indicators such as water level, turbidity, rainfall, sedimentation, and biodiversity trends alongside community reporting procedures. Facilitated workshops will identify monitoring sites and assign responsibilities to trained participants. The process will blend scientific knowledge with indigenous ecological knowledge to ensure cultural relevance and practicality. Implementation will start in the first project year, with quarterly review meetings to evaluate data accuracy and community participation.
Activity 4.1.2: Establish a centralized data management and reporting system linked to local and regional authorities
This activity will create a centralized data management platform hosted by the District Environmental Office and connected to regional environmental and water authorities. The system will compile, store, and analyze data from community observers, hydrological sensors, and remote sensing sources. A digital dashboard will visualize trends in lake health and climate indicators for timely reporting and decision-making. Training will be provided for district staff and data managers on system operation, analysis, and communication. Regular reports will be shared with other stakeholders such as internal drainage water basins to ensure alignment with regional monitoring frameworks.

Output 4.2: Number of Community Members Trained in Data Collection, Monitoring, and Reporting
This output strengthens local capacity to support the Community-based Monitoring and Early Warning System (CBMEWS) through targeted training and skills development. At least 60 community members, including women and youth, will be trained in environmental data collection, monitoring, and reporting to enhance community ownership and participation. The training will build practical skills in using monitoring tools, recording key indicators, and communicating findings to local authorities. By equipping community members with these competencies, the project ensures accurate, timely data generation and fosters inclusive, sustained engagement in environmental management and climate risk reduction within the Lake Babati catchment.

Activity 4.2.1: Develop a digital and manual dashboard for early warning dissemination (SMS alerts, radio, community boards)

This activity will establish an inclusive, multi-channel communication system for rapid early warning dissemination. The project will design both digital (SMS and online dashboards) and manual (community noticeboards, local radio broadcasts) tools to share real-time alerts on climate-related risks, water contamination, and other risks. In collaboration with telecommunications providers and local radio stations, alerts will be tailored in both Kiswahili and local dialects for accessibility and easy comprehension of the message by the local communities in project areas. Through this activity, it is expected that it would result in 80% of timely response or preventive action.

Activity 4.2.2: Develop a local climate and water-quality early-warning communication protocol

This activity will create a standardized communication protocol defining how, when, and by whom early warnings are issued, verified, and responded to. The protocol will outline reporting hierarchies from community monitors to ward offices and district authorities and detail thresholds for alerts (e.g., rainfall levels or water turbidity). Participatory simulations and drills will be conducted twice annually to test system functionality and ensure community readiness. By project end, all target villages will have operational, community-endorsed communication chains that facilitate timely, coordinated responses to climate-related risks.

Output 4.3: Frequency and Quality of Lake Water Quality Monitoring Reports Produced

Under this output, the project will establish a structured lake monitoring program that produces regular, high-quality reports to guide adaptive management of Lake Babati's ecosystem. Quarterly water quality assessments will be conducted at ten sampling sites around the lake and its inflows, measuring key parameters such as turbidity, dissolved oxygen, sedimentation, and nutrient levels. The Babati District Environmental Office, in collaboration with NEMC and the Babati Water and Sanitation Authority (BAWASA), will analyze and validate the data, ensuring accuracy and consistency. Findings will be compiled into quarterly monitoring reports shared with district and community stakeholders to support evidence-based decision-making, pollution control, and restoration planning, thereby strengthening local capacity for sustainable Lake Babati management.

Activity 4.3.1: Install basic hydrological and meteorological monitoring equipment (rain gauges, water level sensors, etc.)

This activity involves the installation of four hydrological and meteorological monitoring stations at key sites around Lake Babati, including inflow streams, the lake center, and the outlet. These stations will be equipped with rain gauges, water level sensors, and turbidity meters, connected to the central database for automated data transmission. To ensure smooth operation of the stations, eight local technicians will be trained to manage and maintain the equipment, ensuring accurate data collection and functionality.

Activity 4.3.2: Conduct periodic assessments of lake water quality, sedimentation, and biodiversity

This activity will support quarterly assessments of lake and tributary water quality to monitor ecological health and pollution trends. Parameters such as pH, dissolved oxygen, turbidity, nutrient load, and heavy metal concentrations will be tested using portable kits and laboratory analysis. Sedimentation rates and biodiversity indicators (e.g., fish populations, aquatic vegetation) will also be tracked. Results will be compiled into biannual reports shared with local communities and district officials to inform management actions. Findings will guide the enforcement of bylaws, pollution control measures, and restoration priorities around the lake.

Output 4.4: Timeliness and Effectiveness of Local Responses to Early Warning Alerts

In many high-risk areas, early warning systems exist but are often underutilized due to weak local response mechanisms, delayed communication, and limited institutional coordination. Strengthening the "last mile" of early warning dissemination and response is therefore essential. This output addresses the critical gap between the issuance of early warning alerts and the on-the-ground actions that reduce disaster and

environmental risks. It focuses on strengthening the ability of communities and local institutions to translate early warning information into timely, coordinated, and effective response actions. To achieve this output, the following activities will be implemented

Activity 4.4.1: Train community volunteers and local institutions in data collection, interpretation, and response planning

This activity will train 60 participants from community and local institutions on collecting, monitoring data, and executing early warning responses. Training will cover response protocols, evacuation procedures, and ecosystem protection measures following alerts such as rising lake levels or contamination events. Practical simulations and community drills will be conducted to test coordination between WUAs, disaster response units, and local governments. Each village will develop a Community Climate Response Plan (CCRP) detailing actions, responsibilities, and resources for responding to various scenarios. The training will be delivered by the District Disaster Management Office in collaboration with the environmental and fisheries departments. By the end of the project's lifespan, response times to environmental incidents will be significantly reduced, and communities will demonstrate improved coordination and effectiveness in managing climate and ecosystem risks.

Component 5: Raising Awareness and Fostering Community Participation in the Restoration and Protection of Lake Babati's Ecosystem through Education, Advocacy, and Stakeholder Dialogue Platforms

This component aims to build a culture of environmental stewardship among communities, institutions, schools, and local leaders by strengthening awareness, education, and multi-stakeholder engagement around Lake Babati's ecosystem. The project recognizes that sustainable restoration and protection of the lake depend not only on technical interventions but also on collective understanding, ownership, and behavioral change of the local communities. Through targeted awareness campaigns, participatory dialogue platforms, and educational initiatives, the component includes interventions that will empower communities to make informed decisions and take active roles in environmental and natural resource conservation efforts. Partnerships with local media, schools, and civil society will ensure that conservation messages are widely disseminated, and that knowledge translates into action. This component will foster inclusive participation and lasting social transformation for sustainable lake management and climate resilience.

Outcome 5: Increased community awareness and engagement in Lake Babati restoration activities.

As a result of Component 5, community awareness and engagement in the restoration and protection of Lake Babati's ecosystem will be significantly strengthened, laying out the foundation for long-term sustainability of conservation efforts. Through sustained education, advocacy, and inclusive stakeholder dialogue platforms, communities living around Lake Babati will develop a deeper understanding of the ecological, social, and economic value of the lake, as well as the risks posed by environmental degradation and climate change. This increased awareness will translate into positive behavioral change, with community members adopting environmentally responsible practices and actively supporting lake restoration initiatives. Schools, local institutions, community groups, and traditional and political leaders will become key champions of environmental stewardship, integrating lake conservation messages into learning, decision-making, and community norms. Participatory dialogue platforms will enhance trust, collaboration, and shared responsibility among stakeholders, enabling communities to voice concerns, contribute local knowledge, and co-create solutions for sustainable lake management. Partnerships with local media and civil society organizations will ensure that conservation messages reach a wide audience, reinforcing awareness and motivating collective action.

Output 5.1: Awareness Campaigns, Community Dialogues, and School Programs on Lake Babati ecosystem restoration Conducted

This output will enhance community understanding of climate-related threats and ecosystem degradation affecting Lake Babati. Through participatory awareness campaigns, structured community dialogues, and school-based environmental programs, the project will foster behavioral change and collective responsibility for restoration. The interventions will integrate local knowledge and climate information to build a shared appreciation of the lake's ecological and economic importance. By equipping local communities, especially

youth and community leaders with environmental awareness, it will strengthen the social foundation for long-term climate resilience and adaptive lake management.

Activity 5.1.1: Conduct public awareness campaigns

Under this activity, at least 15 awareness and community dialogue sessions will be conducted across Lake Babati's catchment to promote ecosystem conservation, sustainable resource use, and climate resilience. Campaigns will combine community meetings, public rallies, cultural events, and roadshows to reach diverse audiences, including farmers, fisherfolk, youth, and women. Messages will emphasize the link between healthy ecosystems and livelihoods, highlighting local success stories to inspire replication. Implementation will be coordinated by the District Environmental Office in partnership with community-based organizations (CBOs), media, and local village leadership. Each campaign will be documented and evaluated for reach and impact using participation records and pre-/post-surveys. This activity will reach at least 6000 community members, with at least 60%, and 30% will be women, and youth, respectively.

Activity 5.1.2: Develop and distribute communication materials (brochures, posters, radio programs, documentaries)

To sustain visibility and reinforce public messaging, the project will further produce and distribute 1,000 IEC materials, including brochures, posters, flyers, and policy briefs on lake conservation and climate adaptation practices. In partnership with local media houses and community radio stations, at least four radio programs and one short documentary per year will be developed and broadcast, featuring local champions, restoration progress, and lessons learned. The messaging will highlight climate adaptation solutions and ecosystem restoration successes in local contexts, translated into Kiswahili and local dialects for accessibility and easy understanding of the information. Partnerships with schools, women's groups, and youth clubs will ensure that materials are widely shared and discussed. At least 15 media features and regular radio segments will be produced over the project period, resulting in a 50% increase in local media coverage of environmental and climate issues. This activity will strengthen the public's understanding of the importance of sustainable practices and foster long-term behavioral change supportive of adaptation efforts.

Activity 5.1.3: Organize school-based environmental education clubs and competitions

To cultivate the next generation of environmental stewards, the project will establish and support environmental education clubs in 15 schools surrounding Lake Babati. These clubs will serve as learning and action hubs where students engage in tree planting, waste reduction, clean-up drives, and debates on ecosystem protection and climate resilience. Teachers will receive training in integrating environmental themes into school curriculum, supported by customized learning materials co-developed with the Ministry of Education and local NGOs. To encourage creativity and ownership, the project will organize annual inter-school competitions such as essay writing, art exhibitions, and science fairs themed around lake restoration, climate adaptation, and sustainable living. Through these initiatives, at least 4 schools will maintain active, self-sustaining environmental clubs by the end of the project's lifespan. Students and teachers will become influential change agents, spreading awareness beyond classrooms to families and communities, reinforcing the project's goal of sustained local engagement in lake ecosystem restoration.

Output 5.2: Percentage of Community Members with Increased Knowledge of Lake Ecosystem Conservation and Climate Adaptation

This output will strengthen local capacity to apply sustainable ecosystem management and climate adaptation practices. Through targeted training, learning exchanges, and demonstration activities, communities will gain practical skills in soil and water conservation, sustainable land use, and catchment restoration. The focus will be on translating technical knowledge into actionable community practices that mitigate climate risks and support the restoration of Lake Babati's ecosystem services. Enhanced local knowledge will enable communities to make informed decisions, adapt to environmental changes, and reduce vulnerability to climate impacts.

Activity 5.2.1: Facilitate community dialogues, stakeholder forums, and policy roundtables on lake management

Regular community dialogues and stakeholder forums will be held to promote shared learning and consensus on lake restoration. These events will bring together residents, district officials, NGOs, and private sector actors to review progress, discuss adaptive strategies, and address policy and governance issues. At least eight stakeholder forums and community dialogues throughout the project duration will be organized, fostering collaboration, accountability, and knowledge exchange. Policy roundtables will further ensure that community insights inform district and regional decision-making on ecosystem management.

Activity 5.2.2: Engage local media in continuous coverage and storytelling on restoration progress and best practices

To sustain awareness and reinforce behavior change throughout the project implementation period, at least 15 media features or programmes will be produced and aired. This will be achieved by partnering with local radio, Television to feature restoration progress, community innovations, and climate solutions. Journalists will be trained in environmental and climate reporting to improve message accuracy and depth. Monthly features and radio segments will highlight local champions, women's initiatives, and youth-led actions, helping to normalize environmental stewardship. Continuous storytelling will broaden public understanding, strengthen accountability, and sustain momentum for ecosystem restoration.

Output 5.3: Community-Based Organizations or Groups Participating are active in Restoration Activities

This output will empower local organizations and community groups to take an active leadership role in restoration and conservation initiatives. The project will strengthen their technical, organizational, and governance capacities to plan, implement, and sustain climate-resilient ecosystem interventions. By mobilizing and supporting community-based organizations, women's and youth groups, the project will institutionalize community ownership of restoration efforts and enhance social cohesion. These strengthened local structures will serve as key drivers of collective action and ensure continuity of conservation activities beyond the project period.

Activity 5.3.1: Support the establishment and strengthening of community-based organizations for lake conservation

This activity will empower local groups such as farmer associations, women's cooperatives, youth clubs, and fishers' groups to form or formalize 10 CBOs focused on lake restoration and ecosystem protection. Each CBO will receive training on organizational management, proposal writing, and advocacy, enabling them to mobilize local resources and participate in project activities such as tree planting, shoreline clean-ups, and by-law enforcement. Small grants will be provided to at least five active groups to support micro-projects like mangrove planting, wetland restoration, or sustainable livelihood initiatives. Strengthened CBOs will serve as anchors for continued conservation efforts after project completion.

Output 5.4: Number of Stakeholder Coordination and Dialogue Platforms Established and Operational

Effective ecosystem restoration requires multi-level coordination among diverse actors from community groups and government departments to NGOs and private partners. Activities under this output will help to institutionalize inclusive and coordinated approaches to ecosystem management. The project will establish and operationalize stakeholder coordination and dialogue platforms that bring together government agencies, civil society, private sector actors, and community representatives. These platforms will facilitate shared planning, information exchange, and policy alignment to ensure that restoration activities are harmonized and sustainable. By creating formal mechanisms for stakeholder collaboration, the project will strengthen governance, transparency, and accountability in climate-resilient management of Lake Babati.

Activity 5.4.1: Celebrate annual environmental events (World Environment Day, Lake Babati Day, etc.) to mobilize participation

To strengthen coordination and visibility, the project will organize annual environmental celebrations such as World Environment Day, World Water Day, and Lake Babati Day. These events will bring together government officials, development partners, CBOs, schools, and private stakeholders to showcase

achievements, share lessons, and renew collective commitments. Activities will include exhibitions, restoration awards, cleanup drives, and cultural performances promoting conservation messages. Through these events, new partnerships will be forged, and ongoing initiatives will gain momentum. The events will also serve as annual accountability forums, where project progress and data from the monitoring system are shared publicly.

B. Describe how the project/programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

All five components of this project are designed to contribute to the environmental, economic, and social benefits, especially at the community level, whereby local farmers and marginalized groups (incl. women, youth, and people with disabilities) will directly benefit through the improved capacity to adapt to the impacts of climate change. This project also complies with the Environmental and Social Policy of the Adaptation Fund, whereby relevant risks are clearly identified, and mitigation measures are proposed.

Environmental benefits

The proposed project is expected to have multiple environmental benefits. The adoption of soil and water conservation techniques (which are also climate smart) and other best environmental conservation practices, such as tree plantation, will improve the natural vegetation cover, thereby contributing to proper management of soil and water resources, thus reducing siltation of Lake Babati. In particular, tree planting will significantly contribute to the restoration of forests which were previously cleared for various reasons. Restoration of lake Babati along its shorelines will reduce sediment inflow to the lake. Furthermore, the construction of an earthen dike will secure the lake buffer area from invasion by farmers and pastoralists. Removal of aquatic weeds will save the lives of many fish, which are currently overstressed by the presence of water hyacinth and water sedges, hence contributing to their ecological integrity. Furthermore, through the support to be provided under institutional capacity building, the lake ecosystem will be closely monitored ensuring that destructive and illegal activities stop. This is envisaged to safeguard the environment of the lake and its surroundings, thus ensuring environmental sustainability. The project will also contribute to environmental protection through the introduction of environmentally friendly brick making technology which eliminates use of fuelwood for burning bricks. Furthermore, the water stewardship approach to be employed by the project is envisaged to improve lake governance.

Economic benefits

This project has a significant economic contribution to the economy of Babati district and country at large. The project will combat crop damage done by hippos through fencing the lake, thus enabling farmers to harvest their crops and earn some income. With the drip irrigation system in place and greenhouse units over 1000 farm households are envisaged to produce more crops which will not only increase household food security but also income. The income of beneficiary households is expected to increase by at least 20% through implementing climate-resilient and environmentally friendly livelihood strategies as explained in component 4 of the project. The construction of charco dams will reduce siltation of the lake, hence enabling lake based economic activities to continue smoothly. The mechanical control of aquatic weeds will increase the fish population, thus improving the fisheries sector which employs many lakes in adjacent communities.

The activities to be implemented under components 1 – 4 will transform the economic status of communities from resource-poor and vulnerable to resource-rich and resilient to climate shocks. The implementation of livelihood-based enterprises such as aquaculture, cultivation of high value horticultural crops, and beekeeping offers many economic benefits.

Table 3. Projected annual average income from proposed livelihood activities (US $)

Livelihood activities	Project Component	Project time frame				
		Baseline	**2027**	**2028**	**2029**	**2030**
Environmentally friendly brick making	4	0	4000	8000	10,000	12,000
Eco-tourism		2500	6000	10,000	12,500	15,000
Aquaculture/fisheries		3000	5600	7000	9500	11,500
Beekeeping		1200	6,000	7,200	9,600	10,500

Social Benefits

The project is designed to provide significant social benefits through targeted interventions that enhance the resilience of vulnerable communities to climate-related challenges. In the Babati district, rainfall variability poses threats to the livelihoods and social fabric of the local population. To address this, the project includes initiatives such as the rehabilitation and regeneration of ecosystems along the lakeshore to mitigate conflicts between hippos and humans. This will help to reduce crop damage and enhance safety for community members, particularly fishermen. Additionally, interventions involving the construction of charco dams and the restoration of forests within the Babati watershed, along with mechanical removal of aquatic weeds, are planned to protect the lake's ecosystem. Ensuring a sustainable supply of ecosystem services from the lake will not only enhance recreational and cultural values but also improve the adaptive capacity of surrounding communities.

The project is expected to positively impact at least 1,000 smallholder farming and fishing households, creating a ripple effect that extends benefits to vulnerable and marginalised groups within the community. Women will be empowered through livelihood activities facilitated by women's groups, enabling them to play a more active role in socio-economic development initiatives. Furthermore, a significant number of youths will also be involved in these activities. By promoting economic opportunities for young people, the project aims to encourage them to remain in their local communities, fostering development and reducing urban migration. This initiative will also advance gender relations by increasing women's and youth's participation in decision-making across levels, promoting a more inclusive approach to community development.

C. **Describe or provide an analysis of the cost-effectiveness of the proposed project/programme.**

The cost-effectiveness of the project's adaptation interventions will be greatly enhanced by the executing entity. Considering the costs and benefits of implementing this project, it is worth noting that the implementation of this project will lead to more resources being saved and more livelihoods being improved. Failure to implement the project will lead to reduced wellbeing of people of Babati and reduced food security (crop damage by hippos and low fish catch from the lake due to aquatic weeds). The resources to be committed to this project will result in long-term and sustainable impacts on Lake Babati and adjacent communities.

All the construction activities will use a force account approach with a view to minimize the costs. Therefore, no contractor will be involved unless the work cannot be done by the government officers. For example, constructing an earthen dike, charco dams, water troughs, and the restoration of lake banks will be done by relevant government experts who will be paid allowances for their time spent on the project. Furthermore, the project will involve the communities that will volunteer to provide labour. Where necessary, some will be paid a modest allowance for their participation, especially for activities requiring some technical knowledge.

Cost effectiveness is also demonstrated in component 4, whereby the livelihood activities to be supported by the project were carefully selected after consultative meetings with the beneficiaries and economic feasibility analysis. Although the communities have some other livelihood activities such as small businesses and cultivation of staple food crops, their average income/day is below the poverty line. By supporting activities such as beekeeping, aquaculture, ecotourism and horticulture, the project will invest

AF resources in livelihoods with high economic returns, thus enhancing not only the livelihoods and well-being of the people of Babati but also their resilience to climate change impacts. Table 3 provides more analysis of cost-effectiveness.

Moreover, the project's integrated approach, combining ecosystem restoration, sustainable livelihood promotion, and capacity strengthening of local institutions, maximizes cost-effectiveness by addressing the root causes of ecosystem degradation while simultaneously improving community resilience and income opportunities. By investing in nature-based solutions and community-led management, the project minimizes long-term operational costs compared to infrastructure-heavy interventions. For example, restoring 1,000 hectares of degraded catchment and riparian zones is expected to prevent annual losses of approximately EUR 500,000 from reduced sedimentation, declining fisheries, climate resilience, and flood damage. Similarly, promoting innovative and diversified livelihood practices could avert productivity losses estimated at over EUR 250,000 per year, resulting in significant savings over the project's lifespan. This preventive, participatory, and ecosystem-based model therefore delivers high returns on investment by preventing environmental degradation and strengthening local economies

Table 4. Project/Programme Costs and Benefits

Project Component	Project Cost (USD)	Concrete adaptation benefits	Avoided losses	Trade-offs
1 To rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed.	957,000	Increased agricultural productivity Increased food security food Increased household income Increased knowledge on water resources management Reduction in sediment load and soil erosion rates in tributaries feeding Lake Babati. Increased availability of fish in the lake due to reduced siltation and water weeds Increased resilience to climate change Impacts Increased visibility of the lake Boat transport will be possible The fish population will increase because of the removal of water weeds. Increased conservation of hippos Restoration of the lake buffer vegetation	Reduced lake depth due to siltation Loss of fish due to increased water weeds Food insecurity Malnutrition Invasion of the lake buffer area	Siltation of may lead to the disappearance of the lake Construction of terraces and ridges in farmlands upstream alone may be effective in controlling sediment inflow in the lake. Government to spend more money compensating families whose loved ones are killed by hippos Increased crop damage by hippos Increased vulnerability to climate change impacts
2.To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and	1,080,000	Enhanced resilience to climate change impacts Increased household income Reduced income poverty Improved management of marine ecosystems.	Abject poverty Degradation of the lake catchment Food insecurity Malnutrition Health problems	Increased degradation of Lake Babati catchment Loss of biodiversity Increased vulnerability to climate change impacts High adaptation cost – especially when the rainfed agriculture fails, and communities have no alternative livelihoods.

enhance community resilience to climate change.				
3. To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning.	590,000	Increased capacity of local government authorities and communities to plan and implement climate change adaption interventions Increased coordination of climate actions at local level Increased resilience to climate change impacts Increased capacity to communicate project outcomes and key lessons learnt	Inability to foresee climate impacts Increased vulnerability to climate change impacts Loss of livelihoods Food insecurity Abject poverty	Increased victims of climate impacts due to poor planning and unpreparedness of local government authorities Increased adaptation cost Failure of climate change adaption interventions (any intervention should include a component for building the capacity of local institutions to coordinate and plan for climate actions otherwise such an intervention may fail)
4. To establish a community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction.	400,000	Enhanced preparedness and response to climate-related stress. Informed decision-making from the available data and early warning systems. Increased climate resilience amongst community members.	Uninformed decision making Increased vulnerability from climate change challenges. Shrinking of lake Babati ecosystems.	Threaten extinction of lake Babati vital ecosystems. Loss of lake Babati biodiversity Persistence of climate change-related challenges.

5. To raise awareness and foster community participation in the restoration and protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms.	463,000	Strengthened awareness amongst the community and stakeholders. Increased participation of the community in the conservation and management of the Lake Babati ecosystem. Enhanced climate resilience amongst the community and systems. and ownership of adaptation	Inability to foresee climate impacts Increased vulnerability to climate change impacts Loss of livelihoods Food insecurity Abject poverty	Increased climate change vulnerability amongst the community, especially women and marginalized castes. Threat the shrinking of the Lake Babati ecosystems. of adaptation

D. **Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.**

This project is designed to maintain consistency with national and sub-national policies, sustainable development strategies, and climate change action plans, as well as with cross-sectoral frameworks in forestry, agriculture, livestock, fisheries, water, and environment. The United Republic of Tanzania is a signatory and Party to several multilateral environmental agreements, including the United Nations Framework Convention on Climate Change (UNFCCC, 1992; ratified 1996), the United Nations Convention to Combat Desertification (UNCCD, 1994; ratified 1997), and the Convention on Biological Diversity (CBD, 1992; ratified 1996). National-level policies and legislation incorporate the obligations set out in these agreements. The project directly contributes to the implementation of the National Climate Change Response Strategy (NCCRS 2021–2026), the National Environmental Policy (NEP, 2021), the National Forest Policy (1998, under review 2023), the Agriculture Sector Development Programme Phase II (ASDP II, 2017–2028), the Water Sector Development Programme (WSDP II, 2016–2025), and the National Biodiversity Strategy and Action Plan (NBSAP II, 2015–2020, under revision). By aligning these frameworks, the project addresses climate change–related challenges affecting communities around Lake Babati, enhancing their adaptive capacity and resilience to the adverse impacts of climate variability and ecosystem degradation. The key policies, strategies, and plans this project aligns with are summarized in the following paragraphs.

United Nations Convention to Combat Desertification (UNCCD, 1994; ratified 1997)
The project also aligns with the national obligations under the UNCCD and the associated NAP. Tanzania's NAP (August 1999) sets out the strategic framework for combating land degradation, desertification, and drought (DLDD) following its ratification of the UNCCD in 1997. By restoring degraded catchments and riparian zones around Lake Babati, promoting sustainable land-use, and strengthening community adaptive capacity, the project directly contributes to the NAP's objectives of reducing land degradation and enhancing ecosystem resilience. Moreover, the project helps address the persistent implementation gaps (noted in the 2023/24 audit) by focusing on measurable local-level interventions, improved land productivity, and governance mechanisms that the NAP emphasizes.

United Nations Framework Convention on Climate Change (UNFCCC, 1992; ratified 1996),
Tanzania signed the UNFCCC on 12 June 1992 and ratified it on 17 April 1996. As a Party to the Convention, Tanzania committed to preparing national communications and climate action strategies. For example, the 2012 National Climate Change Strategy (NCCS) sets out broad adaptation and mitigation actions across sectors such as water, agriculture, forestry, and land use. More recently, the 2021-2026 National Climate Change Response Strategy (NCCRS) provides the current roadmap for mainstreaming climate change into sectoral and local government plans, aligning with Tanzania's Nationally Determined Contribution (NDC) under the Paris Agreement (which is nested under the UNFCCC).

Convention on Biological Diversity (CBD, 1992; ratified 1996).
By ratifying the CBD in 1996, Tanzania committed to the global objectives of conserving biodiversity, promoting sustainable use of its components, and ensuring the fair and equitable sharing of benefits from genetic resources. The development of the NBSAP provides the national roadmap for implementing these international commitments in Tanzanian policy, programming, and institutional arrangements. As the Lake Babati proposed project involves ecosystem restoration, fisheries/aquaculture governance, water/land use, and community resilience in a biodiverse catchment area, alignment with the CBD and the NBSAP strengthens its relevance to national commitments. It demonstrates that the project is anchored within the country's biodiversity governance framework and contributes to implementing the NBSAP's priority actions

National Water Policy 2002 version of 2025
The proposed project is consistent with Tanzanian National Water Policy 2002, which, among other things,

underscores the importance of integrated water resources management, including the establishment of water users' associations. The proposed water stewardship approach in addressing lake governance issues is well aligned with the Water Policy.

Water Resources Management Act 2009
The proposed project will progress the establishment of Water Users Associations (WUAs) for Lake Babati. This is consistent with the Water Resources Act 2009 which provides a definition of WUA and its functions. The Act also stresses the need for integrated water resources management which is at the centre of the project interventions.

Water Sector Development Programme (WSDP II, 2006–2025)
This programme provides a framework for integrated water resources management, focusing on **equitable** access, efficiency, and sustainability. The project aligns with WSDP II by protecting water catchments, improving watershed management, and reducing sedimentation and pollution entering Lake Babati—thereby supporting water security for local communities.

The National Climate Change Response Strategy (2021-2026)
Water is perceived among the main sources of livelihoods, harnessed for domestic, agriculture, and industrial use. Climate change is negatively impacting water sources, therefore addressing these climate change-induced impacts will allow continuous availability for these elements which are important for sustaining livelihoods, economic growth and social development. In response, as due to the growing concerns over negative climate changes and climate variability, Tanzania like many other countries has vested into several initiatives to curb the situation include developing the National Climate Change Strategy. The National Climate Change Strategy was devised seeking to enhance the technical, institutional and individual capacity of the country to address the impacts of climate change. In order to achieve this aim, the National Climate Change Strategy has identified several strategic interventions (SI), among which are proposed by this project, such as interventions to control soil erosion which leads to siltation of water bodies such as ponds and lakes hence affecting water quality and quantity.

Forest Policy (1998)
Climate change is reported to have affected the forestry sub-sector by dwindling forest ecosystems. The National Forest Policy of 1998 and subsequent Acts programs and plans have the overall goal of enhancing the contribution of forests to sustainable development and conservation of biodiversity for the benefit of current and future generations. In Tanzania, forests play a major role in building adaptive capacities and resilience of poor and marginalized vulnerable communities. Protecting and conserving biodiversity through application of best practices in soil and water conservation; expanding forest cover and use of adaptive species as well as linking conservation areas is pivotal in adapting to climate change and ensuring continuity in the availability of ecosystem goods and services hence improving the livelihoods of Tanzanians. The proposed project will strengthen efforts invested by the Government Forestry Sector particularly to(a) Enhance conservation of forests biodiversity and control of invasive species; (b) Supporting alternative livelihood initiatives for forest dependent communities; and (c) Strengthening and up scaling of community-based forest management best practices.

Agriculture Sector Development Programme Phase II (ASDP II, 2017–2028)
ASDP II aims to transform agriculture into a modern, commercial, and resilient sector through climate-smart and sustainable production systems. The project complemented ASDP II by promoting sustainable land-use practices, agroforestry, and alternative livelihoods that reduce land degradation and enhance food security in the Lake Babati catchment

Agriculture Policy (2013:
In Tanzania, the agricultural sector is considered as the backbone of the national economy, employing more than 80% of the country population of about 60 million people. The agricultural sector in the country, unfortunately, suffers from dependency on climate-sensitive rain-fed agriculture. Adverse effects of climate change have been recorded within different government reports as cited by the World Bank. The dependence of agriculture on rainfall increases the risks of droughts and floods. Therefore, reducing vulnerability of the sector to climate change will significantly contribute to socio-economic development and ensure food security. The agriculture policy and plans

have set and implemented several priorities, which the project will also contribute to enhance the resilience of the more vulnerable farming communities to climate-induced impacts. These include installation of water efficient irrigation schemes; Promoting early maturing and drought tolerant crops; Addressing soil and land degradation by promoting improved soil and land management practices/techniques; Strengthen early warning systems at District level.

Fisheries Policy 2015:
As far as fisheries sector is concerned, the goal of Tanzanian Government is to have fisheries resource able to resist and/or adapt to climate change risks and continue supporting community livelihoods, productivity and diversity of the aquatic ecosystems and fisheries sector in general. The proposed interventions are also within the Government frameworks and most particularly on: Promoting aquaculture, Enhancing protection and conservation of aquatic ecosystems productivity, and diversity.

National Adaptation Programme of Action (NAPA 2007):
The Government of The United Republic of Tanzania recognizes that the extreme vulnerability of communities and the surrounding natural systems to the effects of climate change escalates poverty and slows down achievement of Millennium Development Goals (MDGs) and several other National Development Strategies such as National Strategy for Growth and Poverty Reduction (NSGPR/MKUKUTA) and Vision 2015. The National Adaptation Programme of Action (NAPA) of 2007 was developed to respond to these challenges particularly to identify and prioritize activities that address adaptation to climate change so as to avoid the risks of increased vulnerability and costs, which come along with effects of climate change. NAPA underscores that Agriculture, Water and Forestry are high-priority sectors that require interventions for adaptation to climate change. The project conforms with NAPA activities described in each sector, which aims to enhance the resilience to the vulnerable communities of Babati to the impacts of climate change.

Nationally Determined Contributions (NDC2.0, 2021)
The Nationally Determined Contribution (NDC) has put much emphasis on Intended Contributions to Agriculture, livestock, forest, energy, Coastal, Marine Environment and Fisheries, water resource, tourism, human settlement and health

National Environmental Action Plan (NEAP 2013-2018)
NEAP developed to support the country towards meeting key international environmental obligations, which include conventions related to Biodiversity and Forests, Climate Change, Sustainable Land Management; Environmental Pollution, Hazardous Waste and Chemicals Management; Sustainable Oceans, Coastal Zones, and protection of Coral Reefs.

National Environmental Master Plan for Strategic Interventions (2022–2032).
The National Environmental Master Plan for Strategic Interventions (NEMPSI, 2022–2032) provides Tanzania's overarching framework for coordinated **environmental** management and climate action, focusing on land degradation control, water catchment protection, sustainable livelihoods, and ecosystem restoration. The plan emphasizes integrated and landscape-based approaches that link environmental conservation with poverty reduction and economic resilience. The Lake Babati project aligns strongly with NEMPSI by implementing strategic interventions for catchment and riparian restoration, reducing sedimentation and pollution, enhancing water quality, and strengthening local governance structures for sustainable natural resource use. By addressing key NEMPSI priorities, particularly on ecosystem rehabilitation, community participation, and climate change adaptation, the project directly contributes to achieving the plan's long-term goals of sustainable environmental management and improved community resilience.

National Biodiversity Strategy and Action Plan (NABSAP) 2015-2020
As per requirements of Article 6 of the CBD, Tanzania formulated her 2nd National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020 to address national biodiversity targets based on the national priorities that contribute to the global targets popularly known as the Aichi targets. This plan addresses among other things, a number of emerging issues such as climate change and variability, invasive species, Genetically Modified Organisms (GMOs),

biofuel development, mining, oil and gas exploration and the continuous anthropogenic impacts that were not sufficiently addressed in the first NBSAP 2001.

E. **Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.**

The proposed project is fully aligned with and compliant with all key national, regional, and international technical standards and good practices. In particular, the project complies with the Strategic Environmental Assessments (SEA) guidelines 2017 and Environmental Impact Assessment and Audit (EIA/EA) requirements stipulated by the Environmental Management Act (Cap. 191 of 2004) and the Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulations (G.N. No. 349 of 2005). SEA guidelines aim to assist government authorities, SEA practitioners, and other stakeholders in designing, conducting, and implementing SEA for policies, bills, regulations, strategies, plans, and programmes that are likely to affect the management, conservation, and enhancement of the environment, or the sustainable management of natural resources. They give direction on how SEA practice in Tanzania should be conducted, following internationally accepted principles and good practice. See https://www.vpo.go.tz/uploads/publications/en-1592644741-NATIONAL-GUIDELINES-FOR-STRATEGIC-ENVIRONMENTAL-ASSESSMENT.pdf

On the other hand, EIA/EA regulations provide rules relative to the procedures for and carrying out environmental impact studies and environmental audits as provided under the Environmental Management Act. They prohibit carrying out projects without an environmental impact assessment required under the Environmental Management Act and define the contents and form of an environmental impact assessment and the basic principles of an environmental audit. For instance, they prohibit activities within 60 m from a water body and call for promotion of ecosystem preservation, Environmental Monitoring, Waste management, Coastal zone management, Precautionary principle, conservation of freshwater/wetlands and pollution control and operationalization of the Precautionary principle where necessary.

The design of this project has taken into account all the above requirements. Based on these provisions, all key activities with potential environmental risks such as small-scale construction works proposed under components 1, 3 and 4 have been subjected to EIA. A preliminary environmental for each activity has been conducted and corresponding environmental and social management plans prepared as presented in table 10. It should however be noted that some of the proposed interventions will contribute directly to environmental conservation and enhancement of ecosystem health which is critical for addressing climate change by strengthening ecological resilience and adaptive capacities of communities in project area. These interventions include tree planting, weed control, promotion of organic manure (compositing) and beekeeping as well as capacity building measures proposed under component 5 which will strengthen the institutional capacity of Babati Town Council, Babati District Council and lake adjacent communities in planning and implementation of climate Smart and restoration measures.

Below is a summary table of applicable national technical standards and guidelines for Tanzania, tailored to the proposed project focused on catchment and coastal ecosystem restoration, sustainable tourism, and MSME development in the Lake Babati region.

Table 5. Applicable national technical standards and guideline for Tanzania

S/N	Standard / Regulation	Date or Year	Project activities to which it applies	How the project will meet it
1	Water Utilisation (Control & Regulation) Act (Cap. 318)	1974	Water abstraction, water-use regulation, and discharge of effluents in catchment/ lake/tributaries	Ensure permits are in place for abstraction; monitor water use/quality; design interventions to maintain minimum flows & avoid harmful discharges.
2	Environmental	2007	Any effluent discharge,	Reference to the water quality categories

	Management (Water Quality Standards) Regulations		sediment run-off from restoration, tourism infrastructure, and wastewater	and effluent limits in the Regulations; sample and monitor water downstream of project sites; design drainage/ponds/settling appropriately.
3	Waterworks Regulations (GN 371)	1997	Community water supply infrastructure, boreholes, piped systems in tourism/MSME zones	Ensure design and installation comply with the Regulations (water supply quality and service reliability); obtain local authority approvals.
4	Water Supply & Sanitation Services (Licensing & Quality of Service) Rules	2020 (GN 849)	MSME sanitation, visitor accommodation infrastructure, small tourism facilities, and aquaculture processing plants	If water/sanitation services are provided, ensure compliance with licensing requirements; embed service standards (design and operations) into contracts; and monitor service delivery.
5	Tanzania Bureau of Standards (TBS) – National Standards (e.g., potable water, wastewater)	e.g., TZS 789:2018 (Potable Water), TZS 860:2006 (Wastewater)	Infrastructure for water supply, wastewater, aquaculture ponds, fish processing, and tourism buildings	Specify the relevant TZS standards in procurement/engineering documents; require certified materials/products; include inspection & certification by qualified engineers.
6	Town and Country Planning Act	2007	Land use change (tourism site development), infrastructure siting, catchment restoration involving land subdivision or new structures	Ensure compliance with land-use zoning, building siting, permissible use as per the Act; obtain required planning permissions. (Tanzania Laws)
7	Statistics (Building & Construction) Regulations	1974 (GN 284)	Construction works for infrastructure (buildings, fish-pond structures, kiosks, tourist accommodation)	While a complete national building code is not yet legally adopted, ensure recording of building works; engage registered contractors; adhere to professional best practices. (TanzLII)
8	Contractors Registration Board – rules for registered contractors	Amendment Act No. 15/2008	Any civil works, infrastructure contracts (catchment restoration, ponds, visitor facilities)	Use only registered contractors; include a contract clause that the contractor must comply with; monitor contractor performance and registration status. (Bank of Tanzania)
9	Disaster Risk / Construction sector reform legislation (new Building Act under prep)	2025 (in process)	Resilient infrastructure design (flood risk, climate change, erosion in catchments/coast)	While the Act is still under development, adopt international good-practice standards (e.g., climate-resilient design) and monitor the new Act's requirements for integration during project implementation. (The Citizen)

Notes and Implementation Tips

i. For catchment restoration, although many interventions are nature-based and low civil works, for any structural elements (bank stabilization, weirs, small dams), the project will reference the civil design standards (TBS, design manuals) and contractor registration rules.

ii. For tourism/visitor infrastructure (lodges, water supply/sanitation, MSME processing), the project will ensure compliance with both water/sanitation standards and local planning/building regulations.

iii. The project will ensure monitoring & compliance: assign roles/responsibilities (which partner or local authority will review/design approval and which partner will monitor compliance) with included budget line(s) for professional review/quality assurance.

iv. For building/infrastructure design, the project will adopt national and international standards, including building codes (e.g., for structural safety, fire safety, accessibility), and document how these standards will be applied. This strengthens the credibility of the proposal.

F. **Describe if there is duplication of project/programme with other funding sources, if any.**

The proposed project and its interventions will avoid any duplication of actions and funding sources. During conceptualization and designing of this project, consultations were made with officers from both BTC and BDC, whereby it was clear that no similar interventions exist in the selected wards. Furthermore, during the development of the project proposal, several stakeholders including NIE were involved. This ensures that no duplication of project or funding sources is done. However, there are some projects in other wards of BTC and BDC which were proposed or implemented or are implementing some of the aspects of the project. In particular, the THRIVE project implemented by World Vision, which comes to an end this year, may provide some lessons to the proposed project, especially on tree planting and community engagement in project interventions. Table 4 below shows some related projects for climate change adaptation conducted in Babati. More projects are found in Appendix 4.

Table 6. Climate Change Related Projects/Programme

Project title, Implementing entity, Timeline and Location	**Main project interventions and target population**	**Lessons learned and how they are reflected in the proposed project design**	**Overlaps and synergies with the proposed project**
Transforming Household Resilience in Vulnerable Environment (THRIVE) implemented by World Vision Tanzania for the period October 2017 – October 2021 in Magugu and Garowa in the Manyara region and Kisongo in the Arusha region	biblical worldview training(Mindset change), savings group formation, adoption of improved farming practices, income diversification, market and finance linkage, natural resource stewardship, and household preparedness for climate, disaster and market shock for smallholder farmers and agro-pastoral households.	Demonstrates integration of livelihoods, resilience and natural resource management which has been reflected in livelihood diversification and community-based restoration.	No duplication. The proposed project complements the interventions done by World Vision Tanzania (WVT) in Babati district. Moreover, the interventions by WVT were conducted in different wards which are not targeted by the proposed project. Furthermore, the project by WVT had no interventions directly related to lake Babati
Sustainable Nou Forest Ecosystem Management Project funded by EU and implemented by Farm Africa for the period 2013-2016 in Babati and Mbulu, Manyara region	Participatory forest management and livelihood support for forest-dependent communities.	Emphasizes participatory governance and livelihood alternatives. Reflected in catchment restoration and community governance.	No duplication. With the exception of beekeeping, the proposed livelihood interventions are different from those supported by this EU-funded project by Farm Africa. Furthermore, the project had no interventions for the restoration of Lake Babati. Moreover, the proposed wards focus on wards which Farm Africa did not cover
Strategic Water Harvesting Technologies for Enhancing Resilience to Climate Change in Rural Communities in Semi-Arid Areas of Tanzania	Water harvesting integrated with agriculture, aquaculture and livestock.	Shows effectiveness of integrated water management that is reflected in charco dams and watershed restoration.	No duplication. SWAHAT is implemented by the same NIE (NEMC) but in different regions (Dodoma, Singida and Tabora) and focuses on water-harvesting technologies rather than

(SWAHAT), funded by the Adaptation Fund and implemented by NEMC for the period 2021–2025 in Dodoma, Singida, Tabora			lake-ecosystem restoration. It offers useful institutional and implementation lessons for the proposed Babati project.
Ecosystem-Based Adaptation for Rural Resilience, funded by GEF and implemented by VPO-DOE with the Ministry of Agriculture, Livestock and Fisheries for the period 2016–2020 in Shinyanga, Manyara, Dodoma, Morogoro, and Zanzibar	To increase resilience to climate change in rural communities of Tanzania by strengthening ecosystem resilience and diversifying livelihoods	Demonstrates EbA approaches and participatory planning reflected in project design.	No duplication. Although it covered the Manyara region, this completed GEF project did not target Lake Babati or its catchment. Its ecosystem-based adaptation approach complements, and informs the design of, the proposed project.
Enhancing Climate Change Adaptation for Agro-Pastoral Communities implemented by the Foundation for Energy, Climate and Environment from 2021–2025 in Kongwa District of Mtanana and Ugogoni wards.	Strengthens climate-resilient rural water supply systems, supports transition to diversified, climate-smart and sustainable livelihoods, improves ecological functions that sustain climate-sensitive rural livelihoods and strengthens institutional, extension and trainer capacities to reduce climate-induced livelihood risks in Kongwa District.	Shows value of locally rooted adaptation solutions and diversified livelihood that is reflected in integrated livelihood and restoration activities.	No duplication. This Adaptation Fund project operates in Kongwa District (Dodoma) and does not address Lake Babati. It nonetheless provides relevant lessons on community-rooted ecosystem restoration and agro-pastoral livelihoods.
South West Indian Ocean Fisheries Governance and Shared Growth Project(SWIOFish) implemented by Ministry of Livestock and Fisheries from 2017-2021 in 17 LGAs along the Indian Ocean coast.	Improved co-management effectiveness of selected priority fisheries at regional, national and community levels, institutional strengthening and support to coastal fishing communities.	The importance of fisheries co-management, institutional coordination, community participation and evidence-based fisheries governance which has been reflected through community-based lake monitoring, fisheries-related livelihood support, local governance structures and by-law enforcement.	There is no geographic duplication because SWIOFish focused on coastal and marine fisheries, while the proposed project focuses on inland Lake Babati.
Reversing Land Degradation Trends and Increasing Food Security in Degraded Ecosystems of Semi-	Reversal of land degradation, sustainable land and water management, ecosystem-based	The project demonstrates that land degradation, poor farming practices and overgrazing must be addressed through integrated	There is no duplication because the project operated outside Lake Babati. Synergies exist in land restoration, food

Arid Areas Tanzania implemented by Ministry of Agriculture from 20128-2023 in Nzega, Kondoa, Mkalama, Magu and Micheweni, Pemba.	adaptation, food-security improvement and support to agro-pastoralist households in degraded semi-arid ecosystems.	land restoration, sustainable water management, baseline assessment and livelihood support. These lessons are reflected in the proposed project through catchment restoration, soil and water conservation, agroforestry, charco dams and climate-smart livelihood interventions.	security, sustainable land management, ecosystem-based adaptation and support to vulnerable agro-pastoral communities.
Tanzania Rural Electrification Expansion Program (TREEP) is implemented by the Rural Energy Agency (REA) and Ministry of Energy, with World Bank/IDA and partner financing from 2016-2026 in rural Tanzania, including Manyara and other regions.	Expands rural electricity access, renewable energy supply, off-grid/mini-grid services, productive-use connections and institutional capacity targeting groups include rural households, businesses, public facilities, productive enterprises and rural service providers.	TREEP shows that energy access supports livelihood diversification, value addition, water pumping, enterprise growth and service delivery.These lessons are reflected in the Babati project through the livelihood diversification, eco-tourism, aquaculture, early warning and community-based monitoring components, which will benefit from reliable and low-emission energy solutions.	No duplication. TREEP focuses on energy access, while the Babati project focuses on Lake Babati restoration and adaptation. Synergies exist through productive-use energy within the livelihood diversification, irrigation efficiency, eco-tourism, digital monitoring and early warning systems.
USAID Tuhifadhi Maliasili / Preserve Natural Resources Activity implemented by RTI International from 2021 to 2025 in key wildlife corridors including Kwakuchinja, Tarangire-Simanjiro, Amani-Nilo, Nyerere-Selous-Udzungwa, Kigosi-Moyowosi-Uvinza and PECCA.	Strengthens biodiversity conservation, wildlife corridor protection, conservation enterprises, CSO capacity, private-sector engagement, wildlife movement monitoring, policy support and participation of women and youth where target groups included corridor communities, CSOs, local conservation groups and natural-resource institutions.	The project shows the value of linking ecosystem protection, livelihoods, gender inclusion, private-sector engagement, wildlife data and land-use planning. These lessons inform Babati buffer-zone restoration, hippo-human conflict sensitivity, eco-tourism and stakeholder platforms.	No duplication. Tuhifadhi Maliasili focuses on wildlife corridors, while the Babati project focuses on lake restoration. Synergies relate to wildlife-sensitive planning, conservation enterprises, tourism, community governance and conflict-sensitive ecosystem management.
Global Framework for Climate Services Adaptation Programme in Africa — Tanzania / GFCS-APA Phase I and II implemented in Tanzania by TMA with WMO, WFP, WHO,	Strengthened access and use of weather and climate information for agriculture, food security, health and disaster risk reduction. Activities included seasonal forecasts,	The project showed that climate information is useful when translated into local, practical livelihood advice. Farmers and pastoralists need timely, understandable and location-specific information to guide	No duplication. GFCS-APA focused on climate-service delivery and use by rural communities, while Babati focuses on lake restoration and ecosystem-based adaptation. Synergies exist through Component 4 on

CCAFS and other partners, with support from Norway. Implemented in pilot districts including Kiteto, Longido and Kondoa, covering farmers and pastoralists.	agro-climatic advisories, radio programmes, training of extension workers, and support to farmers and pastoralists to use climate information in livelihood decisions.	planting, livestock movement, crop choices, water use and risk reduction. Babati should therefore link its community-based early warning system with TMA forecasts and convert climate information into practical messages for farmers, fishers, livestock keepers and lake-dependent households.	community-based monitoring and early warning, and Component 5 on awareness and stakeholder dialogue. The Babati project adapts GFCS lessons on radio messaging, extension-worker training, local-language advisories and participatory climate-risk planning.
Lake Victoria Environmental Management Project II (LVEMP-II) implemented regionally through the Lake Victoria Basin Commission and nationally by the Ministry of Water and Irrigation and partner institutions from 2009-2017 at Lake Victoria Basin, including Tanzania lake-basin areas.	Supported collaborative lake-basin management, pollution hotspot reduction, degraded sub-catchment restoration, water quality, sanitation, wastewater control, water hyacinth management, fisheries governance, wetland restoration and community livelihood sub-projects where target groups included lakeshore communities, local governments, water/fisheries institutions and resource users.	LVEMP-II shows that lake restoration requires simultaneous action on pollution control, catchment management, wetland/buffer protection, water hyacinth control, community livelihoods, water-quality monitoring and multi-institutional coordination. These lessons are reflected in the Babati project through catchment restoration, water-quality monitoring, aquatic weed control, livelihood alternatives, community-based institutions and local government capacity strengthening.	No duplication. LVEMP-II was implemented in the Lake Victoria Basin, not Lake Babati. It is useful as a comparable lake-basin restoration and pollution-management project. Synergies are analytical and methodological such as water-hyacinth management, wetland restoration, pollution hotspot control, BMU/community governance, water-quality monitoring and livelihood sub-project design can inform Babati implementation.

G. **If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.**

The project's learning and knowledge management component is captured under component 5. It will entail dissemination positive project results and lesson learned. The project will organize and conduct study visits within the project sites to help farmers learn and sharing experience. Study visits to areas with similar project will also be organized to enhance better learning. Communities will actively participate in project activities by learning and practicing climate change adaption technologies and practices. The lessons learnt by few community members are envisaged to diffuse to the wide community through peer training and hence impacting many community members in Babati district. At local level, the project will produce and distribute leaflets and brochures highlights key project achievements and lessons learnt.

In addition, the project will establish a user-friendly, dedicated web-based platform (website and interactive e-forum) on the NEMC website to document and showcase the progress of project activities, archive all project-related documentation, and disseminate lessons learned at both the district and national levels. This digital knowledge hub will be managed jointly by the Lake Babati Restoration Coordination Unit (LRCU) under the Babati District Council and Climate Action Network Tanzania (CAN Tanzania), with technical input from the NEMC and Vice President's Office – Division of Environment as a knowledge-sharing partner. To ensure dissemination strategies effectively deliver intended messages and reach target audiences, the project will employ audience reach analytics, a feedback

mechanism, content quality reviews, learning uptake indicators, and independent communication as its monitoring and evaluation (M&E) approaches.

Project results and lessons learnt will further be disseminated at national and international levels through conferences, symposia, meetings, workshops, various publications in peer reviewed journals. Furthermore, other means such as radio, TV, newspapers, YouTube, Facebook and video documentaries will be used as well to share and communicate project results, outcomes and lessons learnt. Furthermore, learning and knowledge management will be an integral part of the M& E framework.

H. **Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.**

The formulation of this project followed a participatory and iterative process whereby all key project stakeholders were involved from the community level to the highest level of government. A total of 72 people from various backgrounds and institutions participated in stakeholders' consultation process. Among the 72 participants 31 (43%) were women and 41 (57%) were men. The project idea was conceptualized during a meeting held in June 2021 which was organized by the NIE. This led to the formation of project design team which among others identified and visited communities adjacent to lake Babati. While in Babati the project design team visited some of the degradation hotspot areas including the farmlands.

Before visiting the sites, the team held meetings with local government officers and leaders who provided their concerns and insights to the project design process. Officers from Babati town council including the Executive Director and Member of Parliament for Babati Urban Constituency were very instrumental in proving information related to threats for lake Babati. The project design team visited 4 wards adjacent to the lake in Babati town council which included Nangara, Bonga, Singe and Bagara.

The stakeholder's consultation employed two main methods namely focus group discussions (FGDs) and key informant's interview (KII). FGDs involved men and women from the communities adjacent to the lake. During the discussions the facilitator had a checklist of questions which guided the discussions with a view of capturing the community perception regarding climate risks, importance of lake Babati, threats to the lake and interventions for lake restoration and enhancing climate resilience. From the discussions, several recommended interventions were obtained thus shaping the design of project components, outputs and activities. For example, interventions such as soil erosion control measures and fencing of the lake to avoid hippo-human conflicts were proposed by the communities from Bagara and Singe wards which are in close proximity to the lake.

The information collected through FGDs were supplemented/validated by information collected through KII. This involved senior government leaders and officers in Babati District. KII was also conducted to officers from NGOs found in Babati Town Council (World Vision Tanzania and COSITA). The analysis of the collected information in terms of climate risks, threats to the lake and recommended interventions shaped the project design.



Figure 11. Stakeholder consultation sessions

Findings of Stakeholder consultations

Key issues raised

i. The project should focus removal of aquatic weeds and hippo-human conflicts
ii. Deforestation is the underlying factor for siltation of lake Babati
iii. The project should support farmers to implement soil erosion measures upstream
iv. Support to establish fishponds will reduce fishing pressure in the lake
v. Finding alternative sites and technology for brick making
vi. Gender must be mainstreamed in project activities so that all groups in the community benefit from the project. In particular, special attention should be placed to the most vulnerable groups such as widows, people with disability, orphans and the elderly group
vii. Management of the lake must be improved. It has become an open access resource
viii. Small scale fishers must be considered in the project

Recommendations /Way Forward

i. Construction of water troughs for livestock
ii. Supporting the youth with brick making machines
iii. Construction of earthen dike and charco dams to trap sediments
iv. be encouraged to integrate trees in the farmlands so that they get alternative source of fuelwood instead of using mangroves
v. The most vulnerable groups notably widows, orphans, people with disabilities and the elderly group should be given priority during implementation of livelihood activities

Categories of Stakeholders consulted

Sectoral level Stakeholders (MDAs):

i. National Environmental Management Council (NEMC)
ii. Vice President's Office-Division of Environment
iii. President's Office Regional Administration and Local Governments
iv. Ministry of Water
v. Tanzania Meteorological Authority

vi. Sokoine University of Agriculture

LGAs Level Stakeholders:

i. Babati Town Council
ii. Babati District Council
iii. Ward offices of Nangara, Bonga, Singe and Bagara

NGOs

i. Word Vision Tanzania
ii. Community Support Initiatives Tanzania (COSITA)

Table 7. Stakeholders Analysis

Potential Stakeholders	Description of the Roles
Local government authorities (BTC and BDC)	The authorities have a role to mobilize community to participate in the project activities, monitor project progress, support community natural resources management program including approval of bylaws for safeguarding water resources.
Farmer groups/cooperatives	These are stakeholders that are part of the farmers but established to oversee and advocates farmer's rights in agriculture sector including managing rice fields, water utilization and follow up of access to farming inputs. In this project they will be used to mobilize farmers to actively engage in project activities. They will also receive training on how best to manage community groups, manage irrigation structures and enforcing the bylaws to realize positive projects outputs and outcomes. Members of the famer's associations are democratically elected, and they are about twenty with leadership structure.
Non-government organizations	These are specialized group of stakeholders that will be engaged by the project to raise community awareness on climate change issues, climate smart agriculture and water resource management. They will work under the guidance of project team and district authority and in close consultation with farmers associations. COSITA and many others found in Babati district. World Vision Tanzania (WVT) is an international NGO which was incorporated in Tanzania and has implemented enormous number of projects in Tanzania some of which are related to climate change.
Farmers	These are grass root project beneficiaries that will be mobilized through their local institutions to participate in project implementation including climate smart agriculture practices, trainings and awareness raising sessions, water sources protection and community meetings. Farmers are key stakeholders that will be used to provide feedback and lesson learned from project activities as they will practice the interventions on the ground.

Table 8: Summary Table of the Consultations

Date of consultation	Groups/Entities Consulted	Location	Number of participants (Women/Men)	Key Topic Discussed	How Outcomes Were Considered in Project Design
June 2021	NIE & Project Design Team	Dar es Salaam	3W / 5M	Project concept, climate risks	Project conceptualization and team formation
July 2021	Babati Town Council	Babati	4W / 6M	Environmental degradation, and	Informed institutional strengthening

				governance	component
July 2021	Community FGDs – Nangara Ward	Babati	5W / 8M	community perception regarding climate risks, importance of lake Babati, threats to the lake and interventions for lake restoration and enhancing climate resilience	Community perceptions identified key climate risks, threats to Lake Babati, and locally appropriate restoration and resilience measures, which were used to prioritize project components, define outputs, and design targeted adaptation activities.
July 2021	Community FGDs – Bonga Ward	Babati	6W / 6M	community perception regarding climate risks, importance of lake Babati, threats to the lake and interventions for lake restoration and enhancing climate resilience	Community perceptions identified key climate risks, threats to Lake Babati, and locally appropriate restoration and resilience measures, which were used to prioritize project components, define outputs, and design targeted adaptation activities.
July 2021	Community FGDs – Singe Ward	Babati	5W / 6M	community perception regarding climate risks, importance of lake Babati, threats to the lake and interventions for lake restoration and enhancing climate resilience	Community perceptions identified key climate risks, threats to Lake Babati, and locally appropriate restoration and resilience measures, which were used to prioritize project components, define outputs, and design targeted adaptation activities.
July 2021	Community FGDs – Bagara Ward	Babati	4W / 5M	community perception regarding climate risks, importance of lake Babati, threats to the lake and interventions for lake restoration and enhancing	Community perceptions identified key climate risks, threats to Lake Babati, and locally appropriate restoration and resilience measures, which were used to prioritize project

				climate resilience	components, define outputs, and design targeted adaptation activities.
July 2021	District Officials (KII)	Babati	2W / 4M	Policy alignment, climate risks	Ensured alignment with district plans
July 2021	NGOs (World Vision, COSITA)	Babati	2W / 2M	Gender, vulnerable groups, and perceived climate risks	Strengthened gender mainstreaming

Future Consultations

Further consultations with local communities, including women, youth, small-scale fishers, widows, people with disabilities, the elderly, and other vulnerable groups, will be conducted at the early start of project implementation. These consultations will aim to:

- Validate planned activities at community level
- Refine implementation modalities
- Ensure continued stakeholder engagement and ownership

I. **Provide justification for funding requested, focusing on the full cost of adaptation reasoning.**

Funds requested from the Adaptation Fund will be used to support building the capacity of Babati town council and District council and their communities to adapt to the impact of climate change through the implementation of practical interventions to produce tangible and sustainable impacts. Without funds from the Adaptation Fund, the communities will continue to be negatively affected by the impacts and fail to meet their livelihood needs. A more justification for funding can be evaluated by analysing the project and without project scenarios as described below:

Component 1: To rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed (USD 957,000)

Baseline:

Under ordinary conditions, local governments and communities implement limited afforestation and land rehabilitation activities focused on visible degradation spots. These efforts are generally small-scale, fragmented, and not climate-informed, often relying on conventional species and methods without considering future changes in rainfall intensity, temperature rise, or hydrological variability. As a result, restored areas often fail to survive or deliver lasting ecological benefits. Soil and water conservation measures are minimal and not designed to address climate-induced erosion or declining groundwater recharge. Consequently, catchment ecosystems remain vulnerable to climate variability, resulting in sedimentation, reduced water quality, and declining productivity downstream.

Adaptation Additionality:

AF funding will transform basic restoration efforts into climate-resilient, landscape-scale catchment rehabilitation that explicitly addresses climate change impacts. The project will deploy climate-informed reforestation, using drought-tolerant and native species suited to projected temperature and rainfall shifts. Integrated soil and water conservation (terracing, infiltration ditches, check dams, and vegetative barriers) will enhance infiltration, stabilize slopes, and prevent flood damage. By improving groundwater recharge, soil moisture retention, and ecosystem resilience, these actions strengthen the watershed's ability to buffer against extreme rainfall and drought events. The interventions will also reduce sedimentation, moderate local microclimates, and ensure long-term ecosystem functionality. Thus, AF support provides clear adaptation additionality by converting traditional, short-term restoration into a strategic climate-resilient watershed management system capable of withstanding future variability.

Component 2: To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change

(USD 1,080,000)
Baseline:
Conventional livelihood programs are primarily designed for income generation and productivity enhancement, assuming stable climatic conditions. Such programs often promote monocropping or single-income sources that are highly climate-sensitive and vulnerable to erratic rainfall, pest outbreaks, and prolonged droughts. They rarely integrate climate risk assessments, ecosystem limits, or adaptive production techniques. Consequently, when climate shocks occur, communities face significant income loss, food insecurity, and increased reliance on unsustainable coping strategies such as overgrazing, charco production, or forest encroachment. These conventional interventions therefore fail to strengthen long-term adaptive capacity or reduce vulnerability.

Adaptation Additionality:
AF funding will enable the introduction of climate-smart livelihood systems that explicitly integrate adaptation principles. This includes the promotion of drought-tolerant crops, water-efficient irrigation, conservation of agriculture, and agroforestry, as well as diversification into beekeeping, aquaculture, and eco-tourism. Such diversification spreads risk enhances food and income security, and strengthens the resilience of households to rainfall variability. These integrated enterprises improve soil fertility, restore microclimatic balance, and reduce dependency on climate-stressed natural resources. Moreover, AF resources will support capacity building, value chain development, and business models that embed climate resilience and reduce vulnerability for 20,000 households. This additionality transforms livelihood support from short-term economic enhancement into a climate-proofed, sustainable, and adaptive rural economy.

Component 3: To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning (USD 590,000)
Baseline:
Local governance and community institutions currently operate with limited technical expertise, data, and institutional frameworks for addressing climate risks. Climate change considerations are rarely mainstreamed into local development or watershed plans, which focus on immediate needs rather than long-term resilience. Planning cycles are typically reactive, responding to crises such as droughts or floods only after they occur. Additionally, the absence of climate risk information, training, and coordination mechanisms prevents the integration of adaptive measures into district budgets and land-use strategies. This leaves institutions ill-equipped to plan or sustain adaptation interventions beyond donor-driven projects.

Adaptation Additionality:
AF support will enable comprehensive capacity development and institutional strengthening to embed climate resilience into planning, budgeting, and implementation processes. Through targeted training programs, the project will equip local officials, extension workers, and community leaders with skills in climate risk assessment, adaptation planning, and data-driven decision-making. It will also finance the creation of climate information systems, planning tools, and policy frameworks to institutionalize adaptation at all governance levels. By mainstreaming climate change into district and community plans, AF resources ensure that adaptation becomes systemic and self-sustaining, persisting beyond the project period. This additionality transforms fragmented governance into a coordinated, climate-resilient institutional system that drives long-term adaptation outcomes.

Component 4: To establish a community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction (400,000)
Baseline:
Existing early warning and environmental monitoring systems are fragmented, under-resourced, and reactive. Data collection is often manual and inconsistent, with limited coverage of climate or hydrological parameters. Communities rely on traditional weather indicators or delayed national forecasts that lack local relevance. As a result, floods, droughts, and water quality threats frequently catch communities unprepared, causing avoidable losses of crops, livestock, infrastructure, and livelihoods. There is also limited coordination between agencies responsible for disaster risk management, environmental monitoring, and water management, reducing overall system effectiveness.

Adaptation Additionality:

AF funding will support the establishment of a climate-informed, community-based early warning and monitoring system that integrates modern technology with local knowledge. The system will collect real-time data on rainfall, river flows, and soil moisture to generate timely, actionable forecasts and alerts. Community monitors will be trained to manage and interpret this information, enabling anticipatory decision-making for water management, cropping, and disaster preparedness. The system will link local communities with regional and national agencies, improving coordination and response capacity. By shifting from reactive crisis management to proactive adaptation, AF investment will reduce climate-related losses and damages, safeguard livelihoods, and institutionalize resilience-building within local governance. Such functionality and foresight are unattainable under baseline funding, demonstrating strong adaptation of additionality.

Component 5: To raise awareness and foster community participation in the restoration and protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms (USD 463,000)

Baseline
Existing environmental education and awareness efforts are sporadic, generic, and disconnected from climate adaptation goals. They often focus on general environmental issues such as tree planting or waste management without linking them to local climate risks or adaptive behaviors. There is minimal inclusion of climate change topics in school curriculum or community training programs. As a result, knowledge of climate change causes, impacts, and solutions remains limited, leading to weak community ownership, poor behavioral change, and inconsistent participation in adaptation initiatives. Coordination among stakeholders is also weak, hindering collective climate action.

Adaptation Additionality
AF resources will enable a comprehensive climate-resilience education and stakeholder engagement program that fosters awareness, behavioral change, and long-term stewardship. The project will develop school-based curricula and learning materials on climate adaptation, organize community workshops, and establish multi-stakeholder platforms for dialogue and coordination. These initiatives will enhance public understanding of local climate risks, adaptation measures, and ecosystem interlinkages. Through participatory communication and capacity building, the project will strengthen social capital and ownership, ensuring sustained community engagement in adaptation efforts. The AF-funded awareness program thus transforms disconnected environmental education into a strategic, climate-focused social mobilization effort, embedding climate adaptation into cultural values and community practice for generational resilience.

J. **Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.**

During the design of this project, deliberate efforts have been made to embed sustainability aspects to ensure that all benefits, infrastructures, and capacities developed continue to deliver long-term impact beyond the project's lifespan in the Babati Catchment Area. The following sub-sections present the key sustainability dimensions: institutional, financial, economic, social, environmental, and policy/political, detailing how each has been addressed to guarantee the long-lasting effectiveness of the proposed project.

Institutional Sustainability:

Central to this approach is the reliance on existing local governance structures and the strengthening of institutional capacities at all levels. The Babati Town Council (BTC) and the Babati District Council (BDC), which possess the legal mandate to oversee development and service delivery within the project sites, are positioned as the long-term custodians of all infrastructures developed under the project. From project inception, these government institutions will be actively involved in planning and decision-making, allowing them to internalize project responsibilities and to prepare full ownership beyond the project period. Parallel to council-level engagement, the project will place significant emphasis on building the capacity of ward-level institutions, village local governments, and community committees such as Community-Based Water Supply Organizations (CBWSOs) and Irrigators Associations. This approach ensures that management responsibilities for infrastructure such as irrigation systems, water supply

schemes, and restored ecological areas are effectively devolved to capable grassroots structures that understand local needs and can maintain day-to-day operations.

Financial Sustainability:

Financial sustainability is reinforced through the introduction of cost-recovery mechanisms that allow communities to maintain established infrastructures without relying on external funding sources. Water use tariffs collected by CBWSOs and Irrigators Associations will be used to cover routine maintenance, replacement of worn-out components, and continued service delivery. The decision to power irrigation and water supply systems using solar technology further reduces operational costs and eliminates dependence on fluctuating grid electricity or expensive fuel sources. This low-cost energy solution will increase the likelihood that communities can sustain operations independently. Beyond infrastructure, the project will contribute to financial sustainability by strengthening the financial literacy and entrepreneurial capacity of beneficiaries engaged in climate-smart livelihood activities. Farmers and livestock keepers will be trained in budgeting, farm planning, savings practices, record-keeping, and market-oriented production. In addition, the project will facilitate the establishment of savings and credit associations, enabling communities to mobilize financial resources, reinvest in their livelihood ventures, and expand climate-resilient economic activities without relying on project funds. The project will also foster economic sustainability by promoting livelihood activities that offer long-term income streams and resilience to climate shocks. By introducing climate-smart agriculture practices, efficient irrigation technologies, and improved water access, the project enhances agricultural productivity and stabilizes household incomes. A significant contribution to economic sustainability comes from the transformation of aquatic weed management into a commercially viable activity. Mechanical removal of invasive aquatic weeds will continue after project closure because the weeds will be converted into valuable products such as livestock pasture and organic manure. Given that Babati District borders pastoral communities facing chronic fodder shortages, especially during the dry season, the commercial demand for processed weeds is expected to remain high. This market-driven model creates a financial incentive for communities to sustain weed removal activities, thereby supporting environmental restoration while generating income.

Social Sustainability:

Social sustainability is ensured through a participatory and inclusive project design that emphasizes community ownership and shared responsibility. By engaging communities in the selection of infrastructure sites, formation of management committees, and identification of livelihood priorities, the project will ensure strong local buy-in. Community-led structures such as CBWSOs and Irrigators Associations encourage collective management of shared resources, which strengthens social cohesion and reduces conflicts over water and land use. Improved water access, strengthened livelihoods, and enhanced ecosystem services directly contribute to social welfare and long-term community resilience. The continuous training and empowerment of vulnerable groups, including women, youth, and pastoral households, ensures that the benefits of the project are equitably distributed and that previously marginalized groups are capable of sustaining climate-resilient practices.

Environmental Sustainability:

Environmental sustainability is deeply embedded in the project's ecosystem restoration and resource management interventions. The project builds the capacity of district and ward-level officers to mobilize resources for continuation of catchment-wide restoration initiatives, including the planting of native trees, conservation of riparian zones, and implementation of soil and water conservation measures. These activities are essential for maintaining long-term ecological stability, enhancing groundwater recharge, improving water quality, and reducing erosion. The use of solar-powered infrastructure will also contribute to environmental conservation by reducing carbon emissions and minimizing the ecological footprint of water supply and irrigation systems. Additionally, the sustained mechanical removal of invasive aquatic weeds contributes to improved lake ecology, reduced eutrophication risks, and restoration of aquatic biodiversity while supporting income-generating opportunities.

Policy/Political Sustainability:

The project enjoys strong political support from local and national leadership, including the District Commissioner,

Regional Commissioner, and Members of Parliament. This political goodwill facilitates policy alignment, resource allocation, and institutional commitment to sustaining project gains. Many of the project's approaches, such as climate-smart agriculture, restoration activities, and water governance mechanisms, will be integrated into district development plans and Medium-Term Expenditure Frameworks. Such integration ensures that key activities receive ongoing financial allocation from local government budgets. Additionally, through extensive training provided under Component 5, district and ward-level officers will acquire the technical expertise necessary to continue offering extension services, monitoring, and advisory support to communities long after the project ends.

K. **Provide an overview of the environmental and social impacts and risks identified as being relevant to the project/programme.**

Identification and analysis of potential risks that would emanate from the implementation of project activities have been done purposely to ensure that all negative impacts are mitigated. The impact identification and analysis were conducted according to National Environmental Management Act (EMA) 2004.

Compliance with the Law

EMA 2004 explains all requirement to be done during implementation of development projects. This project conducted an Environmental and Social Impact assessment (ESIA) as per EMA 2004. ESIA sets out environmental and social guideline to be followed for mitigating the identified for the project.

Access and Equity

The project is set for the requirement of individuals living in Babati district, their presence and their need is the key factor towards this project. Touching each person and making improvement of livelihood grantee success of this. Participatory method will be used and selection of members for management of project will be done by selecting members from each group/ethnic area. Every person will be free to access the project following the set rules to ensure no conflict which arises.

Marginalized and Vulnerable Group

All development projects are safeguarded with National and local set rules in which no vulnerable group which appears, resources are accessed following laws, human rights in Tanzania are well controlled by government from local government level to national level. Tanzania Development Vision, 2025 enhances opportunity for and protection of vulnerable and disadvantaged groups as orphans, the physical, mentally and psychological disabled, old people with no relatives or other means of support, it extends opportunity to vulnerable groups and disadvantaged groups, assisting individuals, or disabled groups to cope with disability, advocates participatory roles for private enterprises, people's organization and community in collaboration with the private sector, in skills development and promotion of quality of life of people with disabilities and other disadvantaged groups.

Gender Equity and Women's Empowerment

Tanzania Vision 2025 empowers people of both gender, all ages to full participate in development process, it removes gender bias in access to resource, participation in decision making and ownership of property, ensure equal access to education and employment at all level, improves the position of women in society and it reviews laws regulations to eliminate all forms of gender based discrimination and improves severe penalties for sexual and other offences against women, hence development of this project will ensure compliance with this vision.

Core Labor Rights

During implementation of this project, all workforce will be sourced from Tanzania ranging from specific village to national level, different risk may arise like accidents this will be controlled through implementation of safety culture at workplace by using of personal protective equipment's, inducting and training workforce on proper safe way of performing their work and comprehensive risk assessment at field level but also the company/individual who will be involved in implementation of project will have to be a member of Workers Compensation fund (WCF), Workers will join Trade Union to ensure they know their rights and it will serves as the watchdog for implementation of labour rights.

Indigenous Peoples

The population of project site includes people of the same tribe though there is less immigrant from different location seeking life opportunity but still they are living by respecting each other and follows legal requirement, for this there is no risk involved.

Regarding the Adaptation Fund AF categorisation, the project can be categorised as Category B, meaning it has potential adverse impacts, but in small numbers and at a small scale, not widespread and easily mitigated through the respective ESMP developed for this project.

Table 9. Summary of Identified Environmental, Social and Safety Issues.

Checklist of Environmental and Social Principles	No further assessment Required for compliance	Potential Impacts and Risks -further assessment and management required for compliance
Principle 1: Compliance with the Law		There is a low risk that some activities may not fully comply with applicable national laws if they are not properly itemized, screened, permitted, and supervised. Although most proposed activities are small-scale and do not fall under the First Category of projects requiring full EIA under the Environmental Management Act, 2004, the EIA and Environmental Audit Regulations, 2005, and relevant sectoral regulations, legal screening is still required. Weak compliance could delay implementation, reduce public trust, and create cumulative non-compliance if several small works are implemented without proper screening. No transboundary impacts are anticipated because the activities are localized within the Lake Babati catchment. To mitigate this risk, the project will conduct continuous legal screening, comply with EMA, EIA/EA Regulations, sectoral laws and district by-laws, consult NEMC and district authorities, and integrate legal compliance measures into the ESMP. There is low risk of non-compliance with certain national laws arising from activities not fully itemized,
Principle 2: Access and Equity		There is a risk that vulnerable groups may have unequal access to, and benefit from, project resources, particularly under Component 2 livelihood interventions, which target selected households and groups directly involved in restoration and transition from unsustainable livelihood practices. Also given that the beneficiaries are rural people and marginalized poor families who are not often integrated in the village's politics and decision-making processes, there could be also a risk of insufficient access to the project resources by these people. This may directly result in impact on unequal participation and perceptions of being left out. Indirectly, it may create household or community tensions and weaken trust in the project. Cumulatively, repeated exclusion across project activities may deepen inequality and reduce project ownership. No transboundary impacts are anticipated. To mitigate this risk, the project will apply transparent beneficiary selection criteria, prioritize vulnerable households, conduct community sensitization on equitable access, and monitor participation using gender- and vulnerability-disaggregated data. The

		project will also ensure that activities do not restrict community access to essential services, land rights, decent working conditions, or other basic entitlements. Inclusion indicators will be integrated into the Monitoring and Evaluation Plan to track equitable participation and benefit-sharing among women, men, youth and vulnerable groups.
Principle 3: Marginalized and Vulnerable Group		There is a low risk that marginalized and vulnerable groups may not fully participate in or/and benefit from project activities. Such exclusion has direct impact of missed opportunity in reducing the adaptive capacity of those most affected by climate risks and cumulatively may weaken the equity and effectiveness of the project over time. No transboundary impacts are anticipated. To mitigate this risk, the project from its development (project design) has consulted marginalized and vulnerable groups, especially women and poor rural households, whose needs and considerations were considered in shaping project interventions. The project design also ensures that benefits such as livelihood support, technology transfer, training and awareness activities reach vulnerable groups and strengthen their adaptive capacity. During implementation, the project will continue targeted consultations with women, youth, people with disabilities, elderly persons and poor households. These groups will be involved in site-level planning, training, livelihood activities and decision-making processes. Beneficiary selection will prioritize vulnerable households, and participation will be monitored using gender- and vulnerability-disaggregated data to ensure inclusive and equitable access to project benefits.
Principle 4: Human Rights		There is a risk that rights to information, participation, non-discrimination and grievance redress may not be fully respected if safeguards are not properly applied. The direct impact is that beneficiary selection, land-use enforcement, patrols and access controls may affect people's participation, livelihood access or ability to raise complaints. The indirect impact is that weak safeguards may create social tension, misinformation, perceived discrimination or unresolved grievances. The cumulative impact is that repeated unresolved concerns may reduce community trust and project legitimacy. No transboundary impacts are anticipated. To mitigate this risk, the project will ensure inclusive consultation, public disclosure of project information, non-discriminatory beneficiary selection, an accessible grievance redress mechanism, and respect for human-rights safeguards throughout implementation.
Principle 5: Gender Equity		There is a risk that women and other gender sensitive groups may not benefit equally

andWomen's Empowerment		from the project if their participation is not transparent, fair and actively supported throughout implementation. The direct impact is that they may be inadequately represented in training, livelihood support, committees, Water Users Associations and decision-making platforms. This may limit their access to income, resources, technologies and adaptation benefits. The indirect impact is that their existing vulnerability to climate shocks may increase, since climate impacts are often experienced differently and more severely by women and gender groups. The cumulative impact is that repeated exclusion across project activities may reinforce existing gender inequalities and weaken women's and other gender groups role in climate resilience-building. No transboundary impacts are anticipated. To mitigate this risk, the project has already integrated gender equality and women's empowerment considerations into its design, including attention to equal rights, responsibilities, opportunities and access to project resources. Consultations during project preparation sought to include women's groups and use gender-disaggregated information. During implementation, the project will apply the Gender Action Plan, set minimum participation targets, collect sex-disaggregated data, engage gender experts and relevant women-focused institutions, and ensure women's active participation in planning, implementation, monitoring and decision-making.
Principle 6:Core LaborRights		There is a risk that workers and community laborers may be exposed to unsafe working conditions or unfair labour practices during implementation of activities under Components 1, 2, 3 and 4. The direct impact is that construction, restoration, reforestation, patrol and other labor-intensive activities may expose workers to accidents, injuries or inadequate protection. The indirect impact is that poor labour management may affect workers' households and may disproportionately affect casual workers, women and youth. The cumulative impact is that repeated unsafe practices may lead to increased injuries or labour-related grievances over time. No transboundary impacts are anticipated. To mitigate this risk, the project will enforce occupational health and safety procedures, provide PPE, conduct worker induction and toolbox talks, prohibit child and forced labour, apply fair wage practices, and comply with national labour laws such as Employment and Labor Relation Act, 2004. The Act makes provisions for core labor rights; establishes basic employment standards, provides a framework for collective bargaining; and provides for the prevention and settlement of disputes. In particular, national and regional stakeholders were involved in the design of project activities to ensure that labor legislations are adhered to. All of the labor involved will be daily wages where the wages will be determined by the tasks and according to best common practices in the districts and village.
Principle 7:Indigenous		There is a risk of unequitable access to project decision-making, benefits and resources by local people and to great extent, communities at the grassroots and relevant

Peoples		marginalised community groups. The direct impact is that local knowledge and resource-use concerns may not be adequately reflected in project decisions. The indirect impact is that weak inclusion may reduce ownership, compliance and sustainability. The cumulative impact is that repeated exclusion of local resource users may undermine long-term community stewardship. No transboundary impacts are anticipated. To mitigate this risk, the project will ensure inclusive consultations, integrate traditional/local knowledge into project design and execution, promote participatory planning, equitable access to benefits, and ensure representation of local resource users in relevant committees.
Principle 8: Involuntary Resettlement		There is a risk of land-use conflict or economic displacement if project activities restrict access to land, grazing, fishing or water-use areas or change land use for construction purpose or restoration. The direct impact is that buffer-zone protection, dikes, dams, fishponds, restoration areas and by-law enforcement may affect existing access to natural resources. The indirect impact is that affected users may experience livelihood stress if restrictions are not fairly managed. The cumulative impact is that multiple small access restrictions may increase pressure on alternative sites and deepen local conflict. No transboundary impacts are anticipated. To mitigate this risk, the project will avoid physical resettlement and land acquisition, use communal or voluntarily provided land only, document consent, conduct site screening, consult affected users, and resolve disputes through village councils and the grievance redress mechanism.
Principle 9: Protection of Natural Habitats		There is a low risk of natural habitats disturbance arising from intervention involving construction works if activities are poorly sited or supervised. The direct impact is localized habitats disturbance during construction work and indirect impact is that poor siting may affect wetlands, riparian zones or breeding areas. The cumulative impact is that several small disturbances may reduce habitat quality if unmanaged. No transboundary impacts are anticipated. To mitigate this risk, the project will conduct site screening, avoid sensitive habitats, minimize vegetation clearance, restore disturbed areas, apply ecosystem-based approaches, and ensure supervision by environmental and forestry officers.
Principle 10: Conservation of Biological Diversity		There is a risk of biodiversity loss, introduction of invasive species or disturbance of aquatic and terrestrial habitats if project activities are poorly planned or implemented. The direct impact is that tree planting, aquaculture, fish cages, weed management and restoration works may affect native species or habitats. The indirect impact is that unsuitable species, excessive water use or poor aquaculture practices may affect lake ecology. The cumulative impact is that repeated small disturbances may reduce ecosystem quality over time. No transboundary impacts are anticipated. To mitigate this risk, the project will conduct site-specific biodiversity screening, use indigenous

		and site-appropriate species, avoid invasive and unsuitable exotic species, promote water-efficient practices, apply environmentally sound aquaculture practices, establish village by-laws for biodiversity protection, and conduct periodic biodiversity monitoring.
Principle 11. Climate Change		There is a low risk of unintended greenhouse gas emissions or maladaptation if project activities are not climate-informed. The direct impact is that construction, transport and equipment use may generate limited emissions. The indirect impact is that poorly designed infrastructure may fail under future climate conditions. The cumulative impact is that repeated climate-insensitive investments may reduce long-term resilience. No transboundary impacts are anticipated. To mitigate this risk, the project will use low-carbon technologies where feasible, promote climate-smart agriculture, apply ecosystem restoration, ensure climate-resilient siting and design, and avoid fossil-fuel-intensive practices where possible..
Principle 12. Pollution Prevention and Resource Efficiency		Under-improper management, there is a risk that restoration works, construction, irrigation development, and climate-smart agriculture practices may generate solid and liquid waste, including vegetation debris, packaging materials, and excavated soils. Additionally, horticultural activities may lead to agrochemical runoff such as nitrates, ammonia, and pesticide residues entering nearby water bodies, which directly impact aquatic ecosystems and public health. Groundwater contamination may also occur if hazardous liquids, including fuel and oil residues from machinery, are not properly managed. Dust emissions and mismanagement of waste streams may direct impact local environmental degradation if left unaddressed. Cumulative impact is that repeated small pollution incidents may degrade Lake Babati over time. Localised effects may move within the catchment through water flows, but no international transboundary impacts are anticipated. To mitigate this the project will employ a comprehensive pollution prevention strategy aligned with national regulations and the ESMP. Waste management protocols ensure that waste is segregated, stored safely, and disposed of in accordance with EMA and TBS standards. Farmers receiving support under climate-smart agriculture are trained in safe and efficient agrochemical use, including appropriate application rates, timing, and storage. Quarterly pollution monitoring covering parameters such as heavy metals, chemical residues, oil content (as per TBS requirements), and biological contaminants provides early warning of any environmental risks. Drainage systems are designed to prevent contaminated runoff from entering water bodies. Fuel and oil storage areas are bunded and regularly inspected. Through these measures, the project ensures efficient resource use while minimizing pollution risks and protecting the ecological integrity of the Lake Babati watershed.
Principle 13. Public Health		There is a risk of HIV/AIDS and STI transmission, minor injuries and other public health concerns during project implementation. The direct impact is that labour-intensive works, community gatherings and movement of workers may increase

		exposure to health and safety risks. The indirect impact is that these risks may disproportionately affect vulnerable households, youth, women and economically disadvantaged groups. The cumulative impact is that repeated exposure without prevention may increase community health burdens. No transboundary impacts are anticipated. To mitigate this risk, the project will conduct HIV/AIDS and STI awareness campaigns, integrate behaviour-change communication materials into community meetings, provide occupational health and safety measures, and partner with district health facilities for testing, counselling and referral services.
Principle 14. Physical and Cultural Heritage		There is a low risk of accidental disturbance of unknown physical or cultural heritage resources during earthworks, although no known heritage sites have been identified in the project area. The direct impact is that excavation, dike construction, dam construction, fishpond development or restoration works may uncover or disturb cultural materials. The indirect impact is that poor handling of chance finds may create community conflict or damage heritage resources. The cumulative impact is that repeated earthworks without chance-find procedures may increase heritage risks. No transboundary impacts are anticipated. To mitigate this risk, the project will apply chance-find procedures, immediately suspend works if heritage materials are discovered, notify relevant authorities, and consult communities before works resume.
Principle 15. Lands and Soil Conservation		*There is a risk that excavation, dike and dam construction, fishpond development, vegetation clearance and material movement may cause localized soil disturbance, compaction, erosion and sediment runoff. The direct impact is that these activities may expose soil and increase erosion if not properly managed. The indirect impact is that sediment runoff may affect water quality and reduce soil productivity. The cumulative impact is that unmanaged soil disturbance across several sites may contribute to longer-term siltation of Lake Babati. Localized effects may move within the catchment through sediment and water flows, but no international transboundary impacts are anticipated.* *To mitigate this risk, the project will conduct site screening, undertake technical assessment, schedule works properly, stabilize exposed soils, manage excavated materials, ensure technical supervision, train communities, and monitor erosion, vegetation recovery, sediment load and compliance with land-use by-laws.*

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project/programme implementation.

The Designated National Authority (DNA) for the United Nations Framework Convention on Climate Change (UNFCCC) and all climate change–related projects in the United Republic of Tanzania is the Vice President's Office (VPO). The DNA provides national-level oversight, coordination, and strategic direction for all climate change actions and interventions in the country. It also serves as the formal communication channel between the Government of the United Republic of Tanzania and the UNFCCC and its associated Boards and Committees, including the Adaptation Fund Board. The DNA will ensure that all climate-related interventions, including this project, are consistent with national climate change policies, strategies, and priorities.

National Implementing Entity (NIE): The project will be implemented by an AF-accredited National Implementing Entity (NIE), the National Environment Management Council (NEMC). NEMC possesses extensive institutional experience and technical capacity to implement and manage complex, multi-sectoral environmental and climate change programs. The Council has a dedicated Climate Change Adaptation Unit that effectively executes the NIE mandate under the Adaptation Fund (AF) framework in the United Republic of Tanzania. As the NIE, NEMC will provide strategic leadership, coordination, fiduciary oversight, and quality assurance throughout the project cycle. Specifically, NEMC will implement the following roles;

i. Provide overall coordination, strategic guidance, and management of NIE functions and responsibilities in full alignment with AF operational and fiduciary standards.
ii. Facilitate high-level engagement and sustained interaction with the Adaptation Fund Secretariat, the Designated Authority, and other national and international stakeholders.
iii. Ensure comprehensive oversight of project implementation, including regular monitoring and transparent reporting on financial and programmatic performance.
iv. Guarantee quality assurance, technical soundness, and accountability of all project outputs, deliverables, and results across development, implementation, and completion stages.
v. Receive, manage, and disburse AF resources in accordance with AF financial management, audit, and procurement standards, ensuring full compliance and traceability.
vi. Oversee and ensure the quality and independence of monitoring, evaluation, and learning processes, ensuring lessons learned and best practices are systematically integrated into future adaptation initiatives in Tanzania.
vii. Manage administrative and institutional support functions, including legal, procurement, human resource management, ICT, and other operational services essential to project delivery.

A Project Steering Committee (PSC) will be established to provide strategic direction, oversight, coordination, and accountability for project execution. The PSC will be chaired by the Chairperson of Babati Town Council, and its Secretariat will be jointly hosted by the PMU through the District Executive Director (DED) and the Executive Director of CAN Tanzania. The PSC will be comprised of the following members: Representatives from VPO, NEMC, Ministry of Agriculture, Ministry of Natural Resources and Tourism, Ministry of Community Development, Gender, Women, and Special Groups, Ministry of Forestry, and TFS. The PSC will guide the project's strategic implementation, review and approve annual work plans and budgets, monitor progress, ensure policy coherence, and uphold accountability and transparency across all executing entities.

Executing Entities: The Climate Action Network Tanzania (CAN Tanzania), in collaboration with the Babati Town Council, will serve as the Executing Entities (EEs) responsible for direct and coordinated implementation of the project activities. Together, they will establish a Project Management Unit (PMU) that will operationalize and oversee the day-to-day management of project implementation at the local level. The Executing Entities will work closely with relevant Town Council departments, community representatives, and local institutions to ensure cross-sectoral integration, stakeholder participation, and local ownership, which will serve as a positive catalyst to ensure sustainability of the project's intended outcomes in Babati Town Council.

The Project Management Unit will be established and hosted at the Headquarters of the Babati Town Council, which

will be responsible for the day-to-day management and execution of the project activities. The PMU will be comprised of a full-time Project Coordinator, full-time Monitoring and Evaluation Officer, full-time Community Development Officer, and other staff who will be seconded by Babati Town Council, such as Water Irrigation Engineer, Agriculture Officer, and Driver. Officers from BTC who will be seconded to the project will receive a modest monthly allowance for their time spent in the project. Other officers from partner institutions and departments will receive an allowance when they participate in field activities. The M &E officer, apart from monitoring the project's progress, will also be responsible for coordinating ESMP activities. He/she will also be responsible for documenting and disseminating the project results and lessons learnt to fulfill the knowledge management aspect as stipulated in component 5. The PMU will report periodically to CAN Tanzania and Babati Town Council, ensuring that project implementation remains transparent, accountable, and aligned with AF and national standards.

The PMU will be supervised by an equally gender sensitive Project Steering Committee (PSC), which will be constituted by members from the relevant ministries and departments and agencies. The PSC shall have at least 3 female members based on skills, qualification and experience.

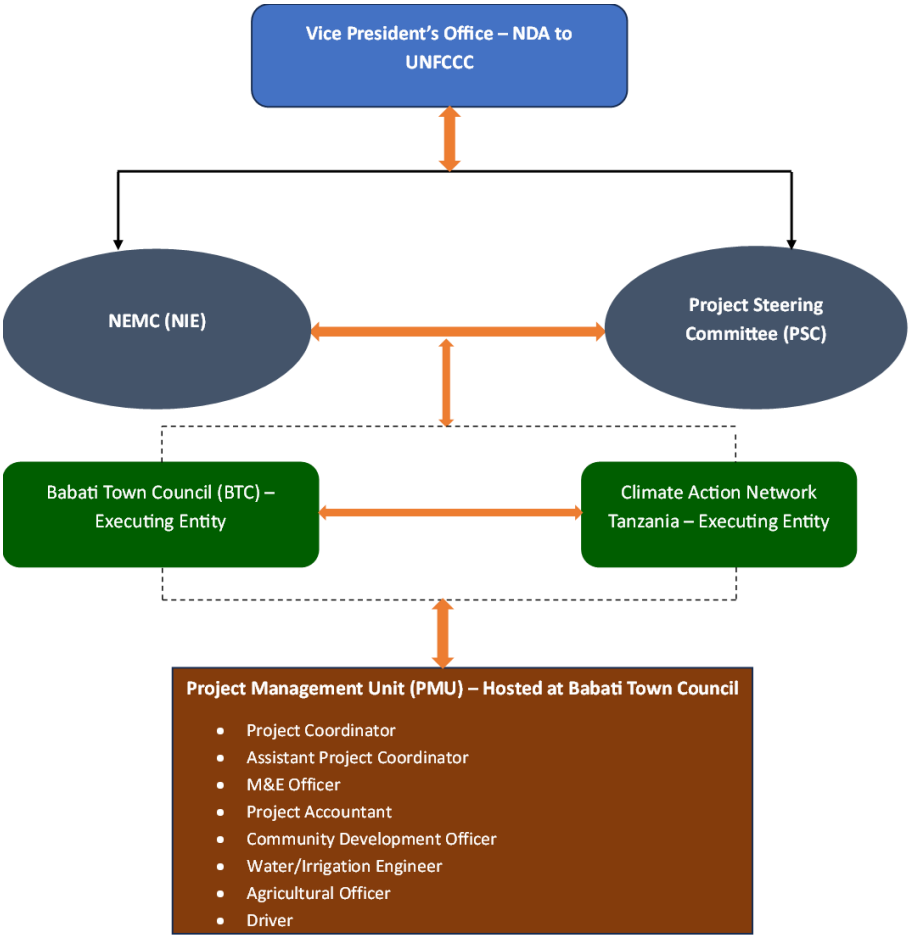


Figure 12. Organogram of the Project

Grievance Management

The executing entity will work towards ensuring that the project direct and indirect beneficiaries are served to the required standards. The PMU will work to ensure that expectations of the communities are met. Therefore, any grievance from the communities will be resolved using the existing governance structures. This project will adopt the Grievance Redress System used by the TASAF4 but with some modifications, whereby all attempts shall be made to settle grievances amicably. The grievance management mechanism is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to the national level government authorities or national courts for resolution.

Communicating the Grievance Management System

The Grievance Redress Mechanisms (GRM), as part of the Grievance Management System, is the project's mechanism that aims to ensure transparency and accountability to beneficiaries and provide channels for project stakeholders to give feedback on the project management system to be used. The designed GRM will be communicated to the project stakeholders during the project inception workshop. The stakeholders will have the opportunity to discuss it and propose any necessary changes. Moreover, the project staff will regularly remind the project beneficiaries of the procedures for submitting their grievances. Moreover, the project staff will regularly remind the project beneficiaries of the procedures for submitting their grievances.

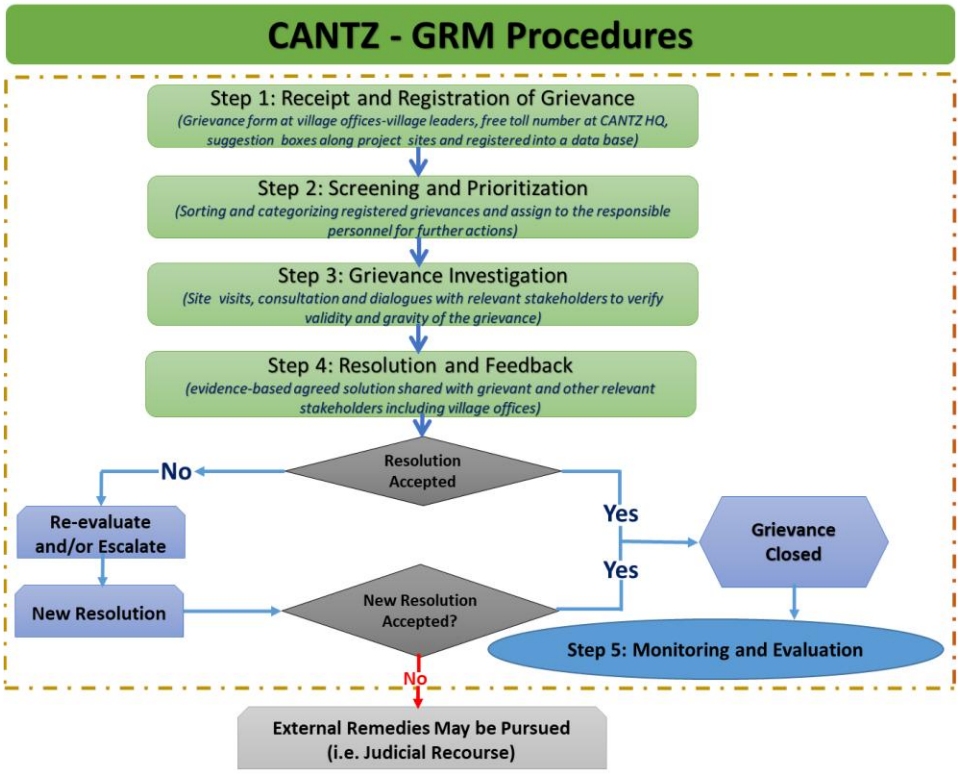


Figure 13. Project/Programme GRM Procedures

[4]URT, (2016). TASAF III Vulnerable Groups Planning Framework

B. Describe the measures for financial and project/programme risk management.

Table 10. Measures for Risk Management

Risk Type	Risks Category	Risk Level	Mitigation Measure
Financial risk	Late disbursement of funds	Low	Fund requests and project progress reports will be timely prepared, communicated and submitted to the Adaptation Fund and other relevant stakeholders to ensure adequate feedback is provided to speed up fund disbursement. The Project Team will follow the required standards and templates as provided by the Adaptation Fund to ensure proper reporting and avoid unnecessary delays.
	Financial control risk	Low	Appropriate structures at the ministerial level and local government authorities exist for proper management and control of the public funds. This project will, therefore, follow these structures and international accounting standards (IAS) and to all Generally Acceptable Accounting Principles (GAAP) to meet all accounting requirements related to reporting, control and transparency and auditing.
Project risk	Project performance	Low	Project Team will be carefully constituted based on skills and capacity to manage project on Climate change intervention as well good monitoring tools to facilitate implementation of this project. Detailed work plans will be developed and be approved by both the Project Steering Committee and NEMC.
Project delivery risks	Unavailability of the required equipment	Low	The project will ensue that all the needed equipment is procured timely as per existing procedures
	Delays in implementation of work plans	Low	The project team will be ensuring regular communications to ensure that the project activities are implemented in the allocated timeframe

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Pursuant to National Environmental Management Act, 2004 (Tanzania mainland) the project was subjected to an environmental and social assessment; and an environmental and social management plan was developed.

The construction of charco dams, earthen dike and fishpond are likely to cause some environmental impacts such as loss of biodiversity due to land clearing, oil spill from the equipment leading to the contamination of soil and dust pollution due to excavation. Moreover, dike construction may lead to soil erosion. The population and workers will be sensitized on health risks — and mainly HIV/AIDS-related risks.

Each project activity has been analyzed according to NEMC's and AF's Environmental and Social Policy requirements in order to identify potential risks and appropriate mitigation measures.

Environmental and Social Management Plan (ESMP) is based on those requirements, with the aim to:

i. Assessing possible measures to avoid minimizing and / or mitigate risks identified.
ii. Develop a monitoring plan
iii. Promote a policy for high quality environmental and social practices.

All the costs related to mitigation measures and monitoring of environmental and social parameters are included in the project budget.

Table 11. Environment and Social Monitoring Plan

AF E&S Principle	**Project Component / Activity**	**Identified Risk (from Part IIK)**	**Mitigation and Management Measures**	**Responsible Entity**	**Implementation Timeline**	**Estimated Budget (USD)**
Principle 1: Compliance with the Law	All project components	Risk of non-compliance with national laws for activities not fully itemized	• Conduct continuous legal screening of all activities• Ensure compliance with EMA (2004), EIA & EA Regulations (2005), sectoral laws and district bylaws• Maintain active consultation with NEMC and district authorities	PMU, District Authorities	Throughout the project lifecycle	2,000
Principle 2: Access and Equity	Livelihood improvement activities (Component 4)	Risk of unequal access to project benefits by marginalized households	• Apply transparent beneficiary selection criteria• Prioritize vulnerable households, women and youth• Sensitize communities on equitable benefit-sharing• Monitor inclusion through gender- and vulnerability-disaggregated data	PMU, District Authorities, and Village Committees	Throughout implementation	2,000
Principle 3: Marginalized and Vulnerable Groups	All components	Risk of exclusion of marginalized and vulnerable groups	• Conduct targeted consultations with marginalized groups• Ensure their representation in training and decision-making forums• Design activities tailored to their needs and capacities	PMU, Local NGOs	Design & implementation phases	2,500
Principle 4: Human Rights	All components	Potential infringement of basic human rights if safeguards are not enforced	• Ensure all activities respect national and international human rights conventions• Guarantee access to information, participation and grievance redress• Prevent discrimination in employment and benefit access	PMU	Throughout project	1,000

Principle 5: Gender Equity and Women's Empowerment	All components, especially Component 4	Risk of inadequate participation of women	• Implement gender action plan• Enforce minimum quotas for women participation• Collect and use gender-disaggregated data• Engage gender experts and women's organizations	PMU, Gender Desk	Throughout project	1,000
Principle 6: Core Labor Rights	Restoration, construction, reforestation works	Risk of minor accidents and unsafe working conditions	• Enforce OHS procedures• Provide PPE to all workers• Conduct OHS training and toolbox talks• Prohibit child labor and forced labor	PMU, Contractors, Village Leaders	Continuous	2,000
Principle 7: Indigenous Peoples	All components	Risk of exclusion of indigenous/local groups	• Ensure inclusive community consultations• Guarantee equitable access to benefits• Integrate traditional knowledge into project design	PMU, Community Leaders	Throughout	1,000
Principle 8: Involuntary Resettlement	All components	Risk of land-use conflict	• Avoid activities requiring land acquisition• Use communal or voluntarily provided land only• Resolve land issues through village councils	PMU, Village Councils	Design & implementation	1,500
Principle 9: Protection of Natural Habitats	Reforestation and ecosystem restoration	Risk of localized habitat disturbance	• Limit clearing to minimum required areas• Avoid sensitive habitats• Restore disturbed areas after works• Promote ecosystem-based adaptation	PMU, Forestry Officers	During field activities	1,000
Principle 10: Conservation of Biological Diversity	Tree planting, conservation activities	Risk of introduction of invasive species or biodiversity loss	• Use indigenous and site-appropriate species only• Conduct site-specific biodiversity baseline studies• Establish village bylaws for biodiversity protection	PMU, District Forestry Office	Before and during implementation	1,400
Principle 11: Climate Change	All components	Risk of unintended GHG emissions	• Promote low-carbon technologies• Avoid fossil-fuel-intensive practices•	PMU	Throughout	1,000

			Promote climate-smart agriculture and ecosystem restoration			
Principle 12: Pollution Prevention and Resource Efficiency	Construction, irrigation, agriculture	Risk of waste generation, agrochemical runoff, water pollution	• Implement waste management plans• Train farmers on safe agrochemical use• Proper storage of fuel and oils• Prevent contaminated runoff	PMU, Contractors	Throughout	2,000
Principle 13: Public Health	Labor-intensive activities	Risk of HIV/AIDS and STI transmission	• Conduct annual HIV/AIDS awareness campaigns• Integrate BCC materials into community meetings• Partner with district health facilities for testing and counseling	PMU, District Health Office	Annual	1,000
Principle 14: Physical and Cultural Heritage	All components	Risk of accidental disturbance of heritage sites	• Conduct chance-find procedures• Halt works if heritage is discovered• Notify relevant authorities	PMU, District Authorities	As required	1,000
Principle 15: Lands and Soil Conservation	Soil and water conservation activities	Risk of soil erosion during works	• Apply soil conservation measures (terracing, mulching) • Schedule works during appropriate seasons• Stabilize exposed soils immediately	PMU, Extension Officers	During implementation	2,000
					TOTAL COSTS	22,000

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund.

The Project will comply with formal guidelines, protocols and toolkits for quality assurance issued by the AF and NEMC. NEMC will develop a Supervision Plan during the project's inception phase which will be distributed and presented to all stakeholders during the Inception Workshop. The emphasis of the Supervision Plan will be on outcome monitoring, learning and sustainability and financial management. Project risks and assumptions will be regularly monitored by NEMC. Risk assessment and rating will be an integral part of the Project Implementation Review (PIR). The quality of the project's M&E will also be reviewed and rated as part of the PIR. Appropriate financial parameters will be monitored semi-annually to ensure the cost-effective use of financial resources.

An independent Mid Term Evaluation will be conducted towards the end of second year of the project while Final Project Evaluation will be done three months prior to the Project's end date in accordance with the available guidance of NEMC as the NIE. The Final Evaluation will focus on the delivery of the project's results as initially planned – and as corrected after the Mid-Term Evaluation, if any such correction took place. The Final Evaluation will assess the impact and sustainability of results, including their contribution to capacity development and the achievement of adaptation benefits. Both expected and un-expected impacts will be investigated to evidence the situation before and after project implementation.

In accordance with Adaptation Fund requirements, a Project Completion Summary Report will be prepared by the National Implementing Entity (NEMC) upon completion of the project. This report will summarize the project's achievements against approved objectives, indicators, and targets; document key lessons learned, best practices, and challenges; and outline sustainability and replication measures. The Completion Summary will be based on findings from the Final Evaluation and other performance reports,and will be submitted to the Adaptation Fund Secretariat as part of the mandatory final reporting process.

An Annual Project Progress Review (PPR will be undertaken and its results will be used for improving planned activities for the next financial year and phase. PPR will be prepared to monitor progress made since the project's start and in particular for the previous reporting period. The annual reviews will cover performance, output and outcome of the activities

Quantitative and qualitative approaches will be used for quantification and qualification of information gathered. A solid monitoring and evaluation system will be put in place and will base on the indicators and means of verification defined in the Results Framework. Monitoring and evaluation systems will be linked to the results framework, annual work plans, and budget. In addition, the project will commission an annual audit (to be conducted by a certified auditor) of project accounts to ensure compliance with the AF and Government rules and procedures. Table 12 summarizes the budget of the M&E plan.

The project will implement monitoring of environmental and social parameters as part of the Environmental and Social Monitoring Plan (ESMP). This activity, budgeted at USD 22,000, will involve periodic monitoring of key environmental indicators such as water quality, soil fertility, vegetation cover, and biodiversity, as well as social indicators including participation, access to resources, and gender inclusion. Particular emphasis will be placed on ensuring that at least 50% of social monitoring parameters consider women and girls, reflecting the project's commitment to gender-responsive implementation. Monitoring will be conducted periodically by the Project Team in collaboration with the District Environmental Officer, community-based monitors, and relevant institutions. The budget will cover field assessments, laboratory analysis, community consultations, training local monitors, data collection tools, and preparation of environmental and social monitoring reports. The findings will inform adaptive management and compliance with safeguard standards

Table 12. Monitoring and Evaluation Framework

Activity	Sex- disaggregated indicators	Responsibility	Budget in US $	Timeframe
Inception and annual workshops	At least 50% of workshop participants are female, to maintain 50:50 gender ratio	Project Manager M& E Officer /Project Management Unit (PMU)	10,000	Will be done soon after receiving the funds
Baseline studies to document in-depth baseline, condition of the project sites and vulnerabilities	Procurement process of the consultant to consider gender at least 40% female available for evaluation process	National consultant, Project Manager and M&E Officer	10,000	Will be done at the begging of the project implementations
Monitoring Project implementation of activities and outputs under the Four Components	At least 50% of female benefits from the project in each village. The PMU to Consider 40% female	Project Manager and Monitoring and Evaluation Officer	18,000	Will be done quarterly and on need basis
Visits to field sites for joint review of status and project progress and reporting	At-least 50:50 male-female ration is maintained in execution of activities and benefits from each project activities under each component as per gender analysis study	Project team	20,000	Will be done on need basis
Independent Mid Term Evaluation	Mid Term Evaluation report to check if least 50% of project beneficiaries in village communities were female and girls	National Consultant	27,118	Will be done towards the end of Year 2
Independent Final Evaluation	Final evaluation report to check if least 50% of project beneficiaries in village communities were female and girls	National Consultant	46,200	Will be conducted 5 months after project closure
Monitoring of Environmental and Social Parameters	Monitoring ensures that 50% of social parameters considers women and girls	Project team	22,000	Done periodically as environmental and social monitoring plan
Quality assurance and field-based quality checks by the IE	IE to ensure at least maintain 50:50 gender ratio by the executing agency as indicated in the Gender assessment report	Quality Assurance Team and the Task Manager	30,000	It is a continuous process in every quarter
Total M & E costs			183,318	

E. Include a results framework for the project proposal, including milestones, targets and indicators, including one or more core outcome indicators of the Adaptation Fund Results Framework, and in compliance with the Gender Policy of the Adaptation Fund.

Table 13. Project/Programme Result Framework

Expected Results	Indicators	Baseline	Targets	Means of Verification	Milestones
Project Objective: To restore the degraded ecosystem of Lake Babati and enhance the capacity of adjacent communities and concerned institutions for climate change adaptation					
Enhanced resilience to climate change impacts caused by climate-related drought and floods	The percentage of community members resilient to climate shocks	To be established during project Inception, whereby a mapping/baseline study will be conducted	• At least 2000 female farmers and 1500 male farmers are practicing irrigation agriculture. • At least 40% of male farmers and up to 60% of female farmers have access to arable land following soil management and agroforestry practices. • Household income increased by at least 30% by the end of the project. • The income of women increased by at least 25% by the end of the project. • Crop yield increased at least by 20%.	• Project progress report. • Midterm review report. • End of project evaluation. • Publication in journal articles.	By the end of the project and beyond
Component 1: To rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed					
Improved ecological integrity and productivity of the Lake Babati watershed.	• Area of degraded land rehabilitated through reforestation and assisted natural regeneration • Number of charco dams constructed along the lake buffer • Number of community woodlots established for soil and water conservation. • Percentage of farmers adopting sustainable land management (SLM) and soil conservation practices. • Number of local by-laws and land-use plans developed/enforced for catchment protection. • Water quality improvement in Lake Babati (turbidity and nutrient concentration levels)	To be established during the baseline survey	• 50 ha restored and under sustainable management. • 2 charco dams constructed • 4 km length of earthen dike constructed along the lake buffer • 5 functional community woodlots established and managed. • ≥60% of target farmers adopting at least one SLM practice (e.g. contour bunds, agroforestry). • 3 by-laws enacted and one integrated land-use plan approved by Babati District Council. • 45% reduction in turbidity (below 55 NTU) and 20% reduction in nutrient load	• Field verification, project M&E reports, satellite imagery. • Site inspection reports; community management agreements. • Farmer surveys; extension service records; project M&E database. • District Council minutes; gazette by-laws; land-use plan documents. • Water quality monitoring data laboratory analysis reports	Year 1: 10 ha restored. Year 2: 30 ha restored. Year 3: 50 ha restored Year 1: 1 woodlot established. Year 2: 3 woodlots are functional. Year 3: 5 fully operational Year 1: 100 farmers trained. Year 2: 200 farmers adopting SLM. Year 3: 500 farmers implementing SLM. Year 1: Draft bylaws developed. Year 2: Public consultation and approval process completed. Year 3 and 4: By-laws enforced and monitored. Year 1: Baseline

					monitoring network established. Year 2 & 3: Midline monitoring shows improvement. Year 4: Final evaluation confirms targets met
Component 2: To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change					
Improved household income, food security, and climate resilience through sustainable livelihood diversification	• Number of households adopting climate-smart agricultural (CSA) practices. • Number of community-based aquaculture enterprises established and operational. • Number of eco-tourism products/initiatives established and marketed. • Percentage of participants (women/youth) benefiting from livelihood support activities. • Average household income is derived from new livelihood sources.	To be established during the baseline survey.	• 500 farmers and fishers trained and applied CSA techniques (e.g. drought-tolerant crops, conservation tillage, agroforestry). • At least four operational fishpond units generating income and food for local communities. • At least 2 eco-tourism ventures (e.g. hippo watch points, birdwatching, guided lake tours) developed and linked to markets. • At least 50% women and 40% youth among direct beneficiaries of the interventions. • 40% increase in household income from sustainable livelihoods by 2028.	• Training attendance records; extension officer reports; farmer field monitoring. • Site inspection reports; cooperative and business registration records. • Tourism development reports; visitor records; cooperative/CSO reports. • Training attendance and project beneficiary database. • Household income surveys; District Livelihood Baseline and Endline Reports.	Year 1: Baseline livelihood and income assessment completed. Year 2: 30% households adopt diversified livelihoods. Year 3 & 4: 60% households sustainably engaged. Year 1: 100 households trained. Year 2: 300 households practising CSA. Year 3 & 4: 500 households reached. Year 1: Site selection and technical training completed. Year 2: 2 units operational. Year 3 & 4: 4 units operational and profitable. Year 1: Feasibility and business model development. Year 2: 1 venture established. Year 3 & 4: 2 ventures operational and generating revenue. Year 1: Gender-responsive training curriculum designed. Year 2: 50% female participation achieved. Year 3 & 4: Sustained inclusion in management structures.

					Year 1: Baseline income assessment conducted. Year 2: 20% income increase observed. Year 3 & 4: 40% increase achieved.
Component 3: To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning					
Enhanced institutional coordination, governance frameworks, and community adaptive capacity for sustainable ecosystem management.	• Number of functional local and institutional structures established/strengthened for ecosystem management (e.g., committees, task forces). • Number of community members (men/women/youth) trained on climate adaptation, governance, and resource management. • Number of local by-laws and policy instruments developed and implemented for sustainable ecosystem management. • Integration of climate adaptation and ecosystem management into District Development Plans (DDPs). • Level of community awareness and participation in climate adaptation and natural resource governance (% of residents engaged).	To be established during the baseline surve	• The functional multi-stakeholder Lake Babati Ecosystem Management Committee is established, improving local governance and adaptive capacity among at least 10 communities. • 1 multi-stakeholder Lake Babati Ecosystem Management Committee and 4 community-level resource management groups are operational. • 120 individuals (40% women, 30% youth) trained and applying learned adaptation and governance skills. • 3 by-laws enacted and enforced by Babati District Council, and one integrated Lake Babati Ecosystem Management Plan adopted. • Climate adaptation and Lake Babati ecosystem management are mainstreamed in Babati DDP and sectoral plans. • ≥70% of community members are aware of and participating in climate and conservation actions.	• Committee reports; district and ward records; project monitoring reports. • Training attendance sheets; pre-/post-training evaluation; project M&E records. • District Council minutes; gazetted by-laws; policy documents. • District planning and budgeting documents; annual council reports. • KAP (Knowledge, Attitude, Practice) surveys; awareness campaign reports.	Year 1: Committee established. Year 2: Community-level structures trained. Year 3 & 4: All structures fully functional. Year 1: Training needs assessment completed. Year 2: 80 members trained. Year 3 & 4: 120 trained and active in committees. Year 1: Draft bylaws prepared. Year 2: Consultation and approval completed. Year 3 & 4: By-laws enforced and monitored. Year 1: Technical consultation with district planners. Year 2: Draft integrated DDP developed. Year 3 & 4: Adoption of revised DDP. Year 1: Awareness materials developed. Year 2: 50% awareness achieved. Year 3: 70% sustained participation
Component 4: To establish a community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction					
Strengthened local capacity to monitor, manage, and respond to environmental and climate-related risks affecting Lake Babati.	• Functional community-based monitoring and early warning system (CBMEWS) established and operational. • % of community alerts leading to timely response actions. • % reduction in climate-related	To be established during the baseline survey	• CBMEWS is established, operational, and integrated into district disaster management frameworks. • At least 80% of alerts trigger a timely response or preventive action.	• Project progress reports; District Disaster Management reports; system operational records. • Monitoring system database; community	Year 1: Framework and stakeholder roles defined. Year 2: Monitoring stations and reporting protocols established. Year 3: System operationalised and linked

	losses (floods, fish kills, water contamination) reported annually. • Number of trained community data recorders and monitors (sex-disaggregated). • Number of operational monitoring stations installed around Lake Babati. • Number of functional communication channels for early warning dissemination. • Frequency and quality of monitoring reports produced and shared with stakeholders.		• 30% reduction in climate-related losses by Year 4. • Sixty community members (at least 40% women) are trained and active. • 4 fully functional community-based monitoring stations. • At least three operational channels (SMS alerts, community radio, local noticeboards). • Quarterly monitoring reports produced and disseminated to stakeholders.	feedback reports; evaluation surveys. • Environmental monitoring reports; district disaster loss assessment reports. • Training attendance records; capacity assessment reports. • Installation reports; technical verification; photo documentation. • Communication logs; system data records; local administration reports. • Project M&E database; District Environmental Reports; community meeting minutes.	to District systems. Year 4: System evaluated and scaled up. Year 2: Alert channels tested. Year 3 & 4: Regular alert issuance and response tracking. Year 3: Baseline loss data established. Year 4: Post-intervention assessment. Year 1: Training materials and curriculum developed. Year 2: Community monitors trained and deployed. Year 2: Procurement and installation. Year 3: Calibration and data collection. Year 3: Alert system piloted. Year 4: Integrated into district communication system. Year 2: Reporting template developed. Year 3: Regular reporting initiated. Year 4: Reports integrated into planning processes
Component 5: To raise awareness and foster community participation in the restoration and protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms.					
Increased awareness and active participation of local communities and stakeholders in Lake Babati's ecosystem restoration and protection.	• % of community members demonstrating improved awareness of environmental protection and climate adaptation. • # of active community-based environmental groups participating in restoration activities. • % of local leaders and institutions incorporating lake conservation messages into their work. • # of awareness sessions and campaigns conducted. • # of community members	To be established during the baseline survey	• 70% of community members aware of lake restoration and protection efforts. • At least 10 active community-based groups established or strengthened. • 80% of ward and village leaders engaged in advocacy and awareness initiatives. • At least 15 awareness sessions and community dialogues conducted. • 6,000 community members reached (50% women, 30%	• KAP (Knowledge, Attitudes, Practices) surveys. • Meeting and training attendance registers. • Media and communication reports. • District environmental reports. • Campaign reports and attendance records. • Media coverage and	Year 1: Baseline assessment, awareness campaign strategy developed. Year 2: 10 groups trained and engaged in awareness programs. Year 3: 10 groups active; awareness campaigns implemented in all project wards. Year 4: Evaluation shows measurable improvement

	(disaggregated by gender and age) reached through campaigns. • # of schools and local institutions engaged in environmental education. • # of multi-stakeholder dialogue meetings held annually. • # of joint action plans developed through stakeholder consultations. • Level of stakeholder satisfaction and collaboration. • - # of media pieces (radio, TV, social media) on lake restoration and climate adaptation. • % increase in local media coverage on environmental issues. • # of communication materials distributed.		youth). • 4 schools actively participating in environmental clubs or campaigns. • Functional Lake Babati Ecosystem Dialogue Platform established by Year 2. • At least 8 dialogue sessions convened over the project period. • 3 joint action plans developed and implemented. • At least 15 media features or programs produced and aired. • 50% increase in local media coverage of environmental topics. • 1,000 IEC (Information, Education, Communication) materials distributed.	communication materials. • School activity records. • Meeting minutes and attendance records. • Action plans and follow-up reports. • Feedback surveys. • Media monitoring reports. • Distribution logs and campaign summaries. • Feedback from target audiences.	in awareness and participation. **Y1:** Awareness materials developed. **Y2:** 5 awareness events held. **Y3:** 15 events held and media engagement ongoing. **Y4:** Final evaluation of outreach effectiveness. **Y1:** Platform established and TOR approved. **Y2:** 2 meetings held; first action plan developed. **Y3:** 3 meetings held; progress review conducted. **Y4:** 3 meetings held; evaluation and sustainability plan. Y1: Media partnerships established. Y2: 5 media features aired. Y3: 15 media features aired and distributed materials. Y4: Communication impact evaluation completed.

F. Demonstrate how the project/programme aligns with the Results Framework of the Adaptation Fund

Table 14. Aligning project components with the Results Framework of the AF

Project Objective(s)	***Project Objective Indicator(s)***	***Adaptation Fund Outcome***	***Adaptation Fund Outcome Indicator***	***Grant Amount (USD)***
1. To rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed and the reduction	Area (in hectares) of degraded land restored or rehabilitated through reforestation and soil conservation measures. Number of trees planted and survival rate after 1 year. Number of community-based watershed management plans developed and	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. 5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	950,328

of human-hippo conflicts.	implemented. Reduction in sediment load and soil erosion rates in tributaries feeding Lake Babati. Increase in vegetative cover in targeted catchment areas (as measured by remote sensing or field surveys. Number of reported cases of crop damage by hippos.			
2. To raise awareness and foster community participation in the restoration and protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms.	Number of awareness campaigns, community dialogues, and school programs conducted. Percentage of community members with increased knowledge of lake ecosystem conservation and climate adaptation. Number of active community-based organisations or groups participating in restoration activities. Number of stakeholder coordination and dialogue platforms established and operational. Increase in voluntary community participation in lake restoration and conservation initiatives	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 3.2. Percentage of targeted population applying appropriate adaptation responses	400,000 178,626
3. To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change.	Number of households adopting climate-smart agricultural and livelihood practices. Percentage increase in household income from sustainable livelihood sources. Number of functional climate-resilient enterprises (e.g., aquaculture, beekeeping, eco-tourism). Reduction in unsustainable resource use practices (e.g., illegal fishing, deforestation, overgrazing). Percentage of target population reporting	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5 Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	1,059,177

	improved food security or livelihood stability.			
4. To establish a community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction.	Existence and functionality of a community-based monitoring and early warning system. Number of community members trained in data collection, monitoring, and reporting. Frequency and quality of lake water quality monitoring reports produced. Timeliness and effectiveness of local responses to early warning alerts. Reduction in reported cases of lake-related environmental incidents (e.g., fish kills, flooding, attacks from hippo, pollution).	**Outcome 1:** Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	426,288
5. To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning.	Number of community members and institutional staff trained on ecosystem-based adaptation and watershed management. Number of local adaptation and watershed management plans developed or updated. Number of functional coordination or governance structures established for lake and watershed management. Level of institutional integration of climate adaptation measures into district and village development plans. Percentage increase in knowledge and skills on climate adaptation among trained stakeholders (measured through pre- and post-training assessments).	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 3.2. Percentage of targeted population applying appropriate adaptation responses	200,000 155,992
Total Objective level grant amount				**3,370,411**
Project Outcome(s)	***Project Outcome Indicator(s)***	***Adaptation Fund Output***	***Adaptation Fund Output Indicator***	***Grant Amount (USD)***

1.Improved restoration of the lake and its ecosystem services	Number of charco dams for trapping sediments constructed Length of earthen dike constructed along the lake buffer area Number of soil and water conservation techniques implemented	**Output 5:** Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	950,328
Increased community awareness and engagement in Lake Babati restoration activities.	Number of awareness campaigns, community dialogues, and school programs conducted. Percentage of community members with increased knowledge of lake ecosystem conservation and climate adaptation. Number of active community-based organisations or groups participating in restoration activities. Number of stakeholder coordination and dialogue platforms established and operational. Increase in voluntary community participation in lake restoration and conservation initiatives	Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.1 No. of news outlets in the local press and media that have covered the topic 3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge 3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	100,000 378,626 100,0000
Enhanced climate resilience amongst communities and systems	Number of households adopting climate-smart agricultural (CSA) practices. Number of community-based aquaculture enterprises established and operational. Number of eco-tourism products/initiatives established and marketed. Percentage of participants (women/youth) benefiting from livelihood support activities. Average household income derived from new livelihood sources.	***Output 6:*** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies 6.2.1. Type of income sources for households generated under climate change scenario	800,000 259,177
Local authorities and institutions demonstrate enhanced capacity for	Number of community members and	***Output 2.1***: Strengthened capacity of national and sub-national centres and networks to	2.1.1. No. of staff trained to respond to, and mitigate	200,000

climate-resilient planning and watershed management.	institutional staff trained on ecosystem-based adaptation and watershed management. Number of local adaptation and watershed management plans developed or updated. Number of functional coordination or governance structures established for lake and watershed management. Level of institutional integration of climate adaptation measures into district and village development plans. Percentage increase in knowledge and skills on climate adaptation among trained stakeholders (measured through pre- and post-training assessments).	respond rapidly to extreme weather events	impacts of, climate-related events (by gender) 2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	 226,288
A functional community-based monitoring and early warning system enables a timely response to environmental and climate risks for sustainable lake management.	Existence and functionality of community-based monitoring and early warning system. Number of community members trained in data collection, monitoring, and reporting. Frequency and quality of lake water quality monitoring reports are produced. Timeliness and effectiveness of local responses to early warning alerts. Reduction in reported cases of lake-related environmental incidents (e.g., fish kills, flooding, attacks from hippo, pollution).	Output 1.1: Risk and vulnerability assessments conducted and updated Output 1.2: Targeted population groups covered by adequate risk reduction systems	1.1.1. No. of projects/programmes that conduct and update risk and vulnerability assessments (by sector and scale) 1.1.2. No. of early warning systems (by scale) and no. of beneficiaries covered 1.2.1. Percentage of target population covered by adequate risk-reduction systems	1.1.1: 120,000 1.1.2: 250,000 1.2.1: 56,288

Total Outcome level grant amount	**3,370,411**

Table 15. Adaptation Fund Core Indicator "Number of Beneficiaries"

	Baseline *(absolute number)*	Target at project approval *(absolute number)*	Adjusted target first year of implementation *(absolute number)*	Actual at completion[5] *(absolute number)*
Direct beneficiaries supported by the project	0	**2,500**	2,500	TBD
Female direct beneficiaries	0	**1,325** *(300 adult women + 25 girls + 1,000 women in households)*	1,325	TBD
Youth direct beneficiaries	0	**50** *(25 girls, 25 boys – students)*	50	TBD
Indirect beneficiaries supported by the project	0	**500,000**	500,000	TBD
Female indirect beneficiaries	0	Not available *(entire population impacted)*	Not available	TBD
Youth indirect beneficiaries	0	Not available	Not available	TBD

Table 16: Adaptation Fund Core Impact Indicator "Early Warning Systems"

	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion

[5] At project completion, the proponent could report on % targeted population reached or successfully supported (the absolute numbers could then be deduced from that figure)

Adopted Early Warning Systems *(Category targeted – 1, 2, 3, 4; and absolute number)* *(1) risk knowledge,* *(2) monitoring and warning service,* *(3) dissemination and communication,* *(4) response capability.* *(report for each project component)*	None	Not applicable	Not applicable	TBD
Hazard*(select from the list on page 2)* *(report for each project component)*	Not specified	Climate variability / flooding (ecosystem-based mitigation)	Same	TBD
Geographical coverage *(km2)* *(report for each project component)*	0	TBD *(lake buffer and wards)*	TBD	TBD
Number of municipalities *(number)* *(report for each project component)*	0	**4 wards** (Nangara, Bonga, Singe, Bagara)	4	TBD

Table 17: Adaptation Fund Impact Indicator "Increased income, or avoided decrease in income"

	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion
Income Source[6] *(name)*	None	Horticulture	Horticulture	TBD
Income Source	None	Beekeeping (honey production)	Beekeeping	TBD
Income level *(USD)*	0	**USD 15,000/year** (horticulture, from Year 4)	Same	TBD
		USD 10,000/year (honey, by project end)	Same	TBD
Number of households *(total number in the project area)* *(report for each project component)*	0	**500 households**	500	TBD

Table 18: Adaptation Fund Core Impact Indicator "Assets Produced, Developed, Improved, or Strengthened"

	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion

[6] When the numbers of livelihoods go through significant changes, such as when sources of income are diversified, it may be useful to illustrate the changes by primary livelihoods.

Sector	Environment / Livelihoods	Environment / Livelihoods	Same	TBD
Targeted Asset – Physical assets	None	Dikes, fencing, dams, greenhouses	Same	TBD
Changes in Asset *(Quantitative or qualitative depending on the asset)*				
– Earthen dike	0 km	4 km constructed	4 km	TBD
– Charco dams/water reservoirs	0	10 units constructed	10	TBD
– Greenhouses	0	2 units constructed	2	TBD
– Ecosystem restoration	0 ha	50 ha reforested	50 ha	TBD
Long-term strengthened assets	None	4 wards protected (Nangara, Bonga, Singe, Bagara)	Same	TBD

[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

Table 19: Detailed Project budget and notes

Component	Output	Activities	Year 1	Year 2	Year 3	Year 4	Notes
***Components 1:* To rehabilitate and conserve degraded catchment**	1.1	Conduct participatory mapping/baseline and assessment of degraded areas within the Lake Babati catchment	117686	152009	98072	39229	Funds will support community consultations, field data collection, and mapping of degraded areas. Includes GIS analysis, technical expert support,

areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed							and participatory baseline surveys to guide restoration priorities.
	Subtotal for Output 1.1	406,996					
	1.2	Establish community tree nurseries and produce native and multipurpose tree seedlings	29,422	58,843	19,614	19,614	The budget covers nursery establishment, seedling production, and local labour for planting. It also includes tools, protective gear, and maintenance to ensure high seedling survival rates.
		Implement large-scale tree planting and reforestation campaigns along riverbanks, hillslopes, and buffer zones	19,614	78,458	19614	19,614	Supports large-scale reforestation of degraded riverbanks, steep slopes, and buffer zones. Activities include seedling transportation, site preparation, community mobilization, planting supervision, and post-planting care. The budget also covers awareness campaigns and incentives for community participation to ensure high survival rates
	Subtotal for Output 1.2	264,793					
	1.3	Construct soil and water conservation structures (terraces, check dams, contour bunds, etc.)	19,614	58,843	19,614	0	Supports design and construction of key soil and water conservation structures to reduce erosion and improve soil fertility. Includes costs for tools, materials (stones, cement, pipes), training local artisans, and community labor mobilization. Technical supervision ensures proper siting and sustainability of terraces, bunds, and check dams.
		Promote agroforestry and	13,730	29,422	9,807	0	Funds will support farmer

		sustainable land management practices among farmers					field schools, demonstration plots, capacity-building sessions, and distribution of agroforestry seedlings. The activity builds resilience to climate change and enhances household income through diversified land use.
	Subtotal for Output 1.3	151,034					
	1.4	Support community-based patrols and by-law enforcement against deforestation and encroachment	7,846	19,614	17,653	0	Budget supports formation and training of community patrol teams, provision of uniforms, basic equipment, and stipends. Encourage collaboration between local authorities and communities to curb illegal logging, charco burning, and encroachment.
		Monitor vegetation recovery and soil erosion trends using remote sensing and field surveys	4,904	9,807	9,807	0	Provides technical support for continuous monitoring of vegetation recovery, soil erosion, and land-use changes. Activities include field visits, drone/satellite imagery analysis, periodic reports, and feedback sessions with community stakeholders to adapt management practices
		Earthen dike and earth dam construction	8826	14,711	14,711	0	Support construction and rehabilitation of small earthen dikes and dams to retain surface runoff, recharge groundwater, and provide water for livestock and small-scale irrigation. Includes engineering design, procurement of materials, labor, and environmental safeguards.
		Establishment of Water Users Association (WUA) for Lake	9,822	4,904	4,904	0	Facilitates the establishment, registration,

		Babati					and capacity building of Water Users Associations. Covers awareness meetings, leadership training, constitution development, and linkages with district water offices. Ensure community ownership and sustainability of water resource management interventions.
	Subtotal for Output 1.4	127,509					
Component 1 Total	**950,328**						
***Components 2:* To promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change**.	2.1	Train farmers and fishers in climate-smart agricultural techniques and sustainable aquaculture practices	9,807	14,711	19,614	-	Capacity building on improved land and water management, use of drought-tolerant crops, integrated pest management, and sustainable fish farming. Includes venue hire, training materials, demonstration kits, and facilitation costs for experts.
		Procurement and installation of greenhouses in two selected sites	9,807	14,711	19,614	-	Procurement of greenhouse structures, irrigation equipment, and tools for two pilot sites. Covers installation, training of operators, and maintenance support.
		Provision of start-up capital to five farmers' groups and support extension services	4,904	4,904	4,904	-	Provides grants and extension support to organized farmer and fisher groups to invest in climate-resilient enterprises. Encourages sustainability and replication.
		Establish demonstration plots for drought-tolerant crops, organic farming, and efficient irrigation systems	4,904	4,904	4,904	-	Establishes visible field demonstrations for technology transfer on water-efficient irrigation,

							organic composting, and climate-smart cropping. Includes technical supervision and seed/material procurement.
	Subtotal for Output 2.1	117,668					
	2.2	Support the development of small-scale aquaculture ponds and fish cages using sustainable feed and management practices	78,458	98,072	117,686	39,229	Supports establishment of aquaculture infrastructure ponds, cages, and hatchery inputs around Lake Babati and feeder streams. Includes procurement of feed, fingerlings, equipment, and farmer training. Emphasizes environmental safeguards and profitability.
	Subtotal for Output 2.2	333,445					
	2.3	Promote alternative income-generating activities such as beekeeping, handicrafts, and ecotourism services	19614	24518	29,422	9,807	Diversifies livelihoods by promoting beekeeping, value-added processing, and eco-friendly crafts. Includes training, starter kits, and branding/packaging support.
		Facilitate access to microfinance, Conduct Periodic Household Food Security and Livelihood Assessment savings groups, and cooperative models for green enterprises	9,807	14711	19,614	9,807	Strengthens financial inclusion by linking community groups to microfinance institutions, forming savings and credit associations, and providing business management training.
		Link local producers to markets and value chains for sustainable products	9,807	19,614	24518	9807	Facilitates value chain development through buyer linkages, trade fairs, product certification, and market access initiatives for honey, crafts, and eco-products.
		Develop ecotourism trails and promote community-based	19,614	19,614	24,518	9807	Develops community-managed ecotourism

		tourism initiatives around Lake Babati					routes, signage, visitor centers, and promotional materials to enhance tourism-based income while conserving nature.
	Subtotal for Output 2.3	274,599					
	2.4	Strengthen the Capacity of the Environment Committee and Village Natural Resource Management Committees to Enforce Sustainable Resource-Use Practices	29,422	49,036	58,843	29,422	Builds the capacity of village environment committees and natural resource management groups to enforce by-laws, plan sustainable resource use, and conduct awareness campaigns. Includes training, logistics, communication materials, and coordination with district authorities.
	Subtotal for Output 2.4	166,723					
	Output 2.5	Conduct Periodic Household Food Security and Livelihood Assessment	39,229	49,036	58,843	19,614	Funds comprehensive livelihood and food security assessments at the household level to track progress and inform adaptive management. Covers field surveys, enumerator training, data analysis, and report dissemination.
	Subtotal for output 2.5	166,722					
Component 2 Total	**1,059,177**						
***Component 4:* To establish a community-based monitoring and early warning system for**	3.1	Conduct capacity-building workshops and training sessions for local authorities, community leaders, and extension officers	14,711	9,807	4,904	-	Covers venue hire, training materials, facilitation, and participant logistics.
		Develop and disseminate toolkits and manuals for ecosystem-based adaptation and watershed management	9,807	4,904	2,942	-	Covers Printing, design, and distribution of toolkits/manuals.
		Develop gender-responsive	4,904	4,904	1,961	-	Covers Expert support and

sustainable lake management, water quality protection, and climate risk reduction.		training programs to ensure inclusive participation in ecosystem management					designing of community training programmes
	Subtotal for Output 3.1	58,844					
	3.2	Support the formation and operationalization of multi-stakeholder watershed management committees	9,807	9,807	19,614	-	Committee setup, training, and operational logistics.
		Provide technical support and mentorship to institutions for effective policy enforcement and coordination	4,904	4,904	9,807	-	Technical backstopping and institutional mentoring.
		Provision of equipment to support patrols to combat illegal fishing in Lake Babati	4,904	4,904	9,807	-	Purchase of patrol gear, fuel, and basic monitoring equipment.
	Subtotal for Output 3.2	78,458					
	3.3	Support and facilitate the integrated climate adaptation strategies into district and village development plans	29,422	29,422	14,711	29,422	Supports planning meetings, integration workshops, and technical facilitation.
	Subtotal for Output 3.3	102,977					
	3.4	Facilitate learning exchanges and study tours with other successful watershed restoration initiatives	68,650	29,422	19,614	14,711	Covers travel, logistics, coordination, and documentation of lessons learned.
	Subtotal for Output 3.4	132,397					
	3.5	Conduct periodic knowledge assessments, refresher trainings, and learning workshops for stakeholders	117,686	58,843	9,807	19,614	Assessment tools, facilitation, logistics, and documentation of learning outcomes.
	Subtotal for Output 3.5	205,950					
Component 3 Total	**578,626**						
***Component 4:* To establish a**	4.1	Design and implement a participatory environmental monitoring framework for Lake	24,518	14,711	9,807	-	Consultancy, stakeholder workshops, and monitoring design tools.

community-based monitoring and early warning system for sustainable lake management, water quality protection, and climate risk reduction.		Babati					
		Establish a centralized data management and reporting system linked to local and regional authorities	14,711	9,807	9,807	-	Software setup, training, and IT equipment for data storage and sharing.
	Subtotal for Output 4.1	83,361					
	4.2	Develop a digital and manual dashboard for early warning dissemination (SMS alerts, radio, community boards)	48,518	9,807	4,904	4,904	Dashboard design, communication materials, and connectivity setup.
		Develop a local climate and water-quality early-warning communication protocol	24,711	9,807	4,904	4,904	Technical consultant support, validation meetings, and training.
	Subtotal for Output 4.2	112,459					
	4.3	Install basic hydrological and meteorological monitoring equipment (rain gauges, water level sensors, etc.)	19,614	19,614	4,904	19,614	Procurement, installation, and calibration of monitoring instruments.
		Conduct periodic assessments of lake water quality, sedimentation, and biodiversity	9,807	9,807	4,904	9,807	Field sampling, lab analysis, and data reporting.
	Subtotal for Output 4.3	98,071					
	4.4	Train community volunteers and local institutions in data collection, interpretation, and reporting	58,843	24,518	29,422	19,614	Training materials, field gear, facilitation, and stipends for community monitors.
	Subtotal for Output 4.4	132,397					
Component 4 Total	**426,288**						
***Component 5:* To raise awareness and foster community participation in the restoration and**	5.1	Conduct public awareness campaigns	9,807	7,846	2,942	-	Radio talks, public events, and community mobilization logistics.
		Develop and distribute communication materials (brochures, posters, radio programs, documentaries)	9,807	9,807	3,923	-	Design, printing, translation, and local radio airtime.
		Organize school-based environmental education clubs	9,807	6,865	2,942	-	Training materials, school awards, and logistics for

protection of Lake Babati's ecosystem through education, advocacy, and stakeholder dialogue platforms		and competitions					outreach events.
	Subtotal for Output 5.1	63,746					
	5.2	Facilitate community dialogues, stakeholder forums, and policy roundtables on lake management	19,614	14,711	9,807	4,904	Venue, facilitation, and stakeholder coordination costs.
		Engage local media in continuous coverage and storytelling on restoration progress and best practices	9,807	7,846	4,904	4,904	Media training, content production, and airtime for awareness.
	Subtotal for Output 5.2	76,497					
	5.3	Support the establishment and strengthening of community-based organizations for lake conservation	29,422	29,422	9,807	29,422	Registration support, capacity building, and operational grants for CBOs.
	Subtotal for Output 5.3	98,073					
	5.4	Celebrate annual environmental events (World Environment Day, Lake Babati Day, etc.) to mobilize participation	34,325	34,325	29,412	19,614	Event logistics, communication materials, coordination, and community mobilization.
	Subtotal for Output 5.4	117,676					
Component 5 Total	**355,992**						
Total project component & activities cost	**1,054,000**	**1,106,252**	**821,832**	**387,384**	**3,370,411**		
Project Execution Costs	**199,975**	**52,175**	**51,175**	**46,900**	**350,225**		
Total Project Cost	**3,720,636**						
Management fee	**62,271**	**89,389**	**59,258**	**102,446**	**313,364**		
GRAND TOTAL	**1,316,246**	**1,247,816**	**932,265**	**537,673**	**4,034,000**		

Table 20: Project Execution Budget Breakdown

Item	Year 1	Year 2	Year 3	Year 4	Total	Notes
Salary for project coordinator	15,175	15,175	15,175	15,175	60,700	Salary top-up for the project coordinator responsible for overseeing the day-to-day implementation of the project activities at $1,264.5833/month, which equates to 60,700 over 48 months
Salary for 2 project officers	17,000	17,000	17,000	17,000	68,000	This covers salary top-ups for two Project Officers responsible for field-level implementation support, community liaison, and routine reporting. Each officer receives $708.33/month,
computer and office consumables	7,000	1,500	1,000	1,928	11428	This covers equipment and supplies needed for project staff to carry out their duties. In Year 1, three laptops are procured at $1,500 each ($4,500) for the coordinator and two Officers, plus $2,500 for initial office consumables (stationery, printer. Recurring expenditures for office consumables are capped for at least 1000 for purchasing printer toner/cartridge, papers, and other minor repairs per each year
Inception Workshop	10,000	-	-	-	10,000	This covers a one-day inception workshop to formally launch the project with key stakeholders, including PSC members, EE/IE staff, government counterparts, and community representatives. With 45 participants expected, costs include daily subsistence allowance at $80/head ($3,600), venue and conference package (meals, hall hire, equipment) at $70/head ($3,150), transport reimbursement for participants traveling from project sites at $50/head ($2,250), and a lump sum of $1,000 for IEC materials and banners to support outreach and visibility
Monitoring visits by the Project Steering Committee	5,000	5,000	5,000	5,000	20,000	DSAs' costs for 5 PSC members conducting 2 monitoring visits per year, each visit lasting 2 days, with a DSA rate of $250/day per member, amounting to $5,000/year and $20,000 across the project's four years
Environmental and Social Management Plan (ESMP)	9,000	5,000	5,000	3,000	22,000	Costs for preparation, disclosure, and implementation monitoring of the project ESMP, in compliance with the AF Environmental and Social Policy.
Vehicles	120,000				120,000	Covers the costs of procuring two project vehicles each at $60,000 to support the implementation of project activities. Two field-suitable 4x4 vehicles are required to support project operations including timely implementation of activities, enhancing supervision and monitoring of project sites, covering lake-adjacent and upstream catchment areas with difficult rural access. One vehicle will support timely field execution, community activities and transport of light equipments, while the second will support EE and PMU oversight, safeguards monitoring, M&E and financial verification. The cost is based on current market checks at Toyota website (HILUX – Toyota Tanzania Ltd.), Car dealer sites and showrooms together, it reflects practical, non-luxury specifications suitable for rural field conditions. Procurement will follow competitive value-for-money procedures, and use will be controlled through asset registration, logbooks, approved travel plans, fuel controls and maintenance records. After project closure, the execution entity will continue to work with the community and local government authority to ensure continued sustainability of project interventions. This is built on common practice whereby vehicles will remain project assets under execution entity and will continue to be utilized to support the project interventions sustainability and well-being of the community.
Fuel and vehicle maintenance costs	6,000	7,500	7,000	5,000	25,500	Covers recurring operating costs for the project vehicle (fuel, routine servicing, repairs, insurance) across all four years of the project. Annual Vehicle Insurance capped at $2500,
Baseline Assessment	10,000	-	-	-	10,000	The budget includes consultant fees for 15 working days at $600/day ($9,000) to

						design tools, collect, and analyze data; field travel and logistics costs of $2,000 to reach assessment sites; $2,000 for data collection support/enumerators; and $2000 for production of the final baseline report
Bank charges	800	1000	1000	725	3,525	Bank charges are meant to cover unavoidable project financial transaction costs, including project account maintenance fees, bank transfer charges and payment processing fees for the various project activities and management interventions. The estimate is based on the expected volume of project transactions over the implementation period and will be charged only where directly related to approved project activities. All charges will be supported by bank statements, reconciled through project financial reports, and subject to audit..
	199,975	52,175	51,175	46,915	350,225	

Table 21: Project/Programme Management Budget for NIE

Item	Year 1	Year 2	Year 3	Year 4	Total	Notes
NEMC staff allowances	20,087	20,087	20,087	20,087	80,348	Salary top-up for 3 NEMC staff supporting project coordination and technical oversight, budgeted at a flat rate of $558/month per staff member × 3 staff × 12 months = $20,087/year, consistent across all four years of the project.
Project supervision and follow-up missions	25,109	25109	23101	20,087	93,406	Covers DSA, transport, vehicle hire/fuel reimbursement, and related field travel costs for Implementing Entity staff conducting project supervision and follow-up missions to project sites. Year 1: 4 missions × 2 staff × 3 days × USD 200/day DSA = USD 4,800; transport at USD 850/mission × 4 missions = USD 3,400; additional vehicle hire/fuel reimbursement and field travel support = USD 16,90. This gives a total Year 1 = USD 25,109. Year 2: 5 missions × 2 staff × 3 days × USD 200/day DSA = USD 6,000; transport, vehicle hire/fuel reimbursement and field travel support = USD 19,109; total Year 2 = USD 25,109. Year 3: 5 missions × 2 staff × 3 days × USD 200/day DSA = USD 6,000; transport, vehicle hire/fuel reimbursement and field travel support = USD 17,101; total Year 3 = USD 23,101. Year 4: 4 missions × 2 staff × 3 days × USD 200/day DSA = USD 4,800; transport, vehicle hire/fuel reimbursement and field travel support = USD 15,287; total Year 4 = USD 20,087. Total project supervision and follow-up missions cost

						= USD 93,4
Project Annual Audit	15,066	15,066	15,066	15,066	60,264	This covers administrative project audit costs for an independent annual audit of project finances and compliance, budgeted at a consistent $15,066/year across all four years to ensure financial accountability and donor reporting requirements are met throughout the project lifecycle.
Mid Term Review		27,118			27,118	Covers the cost of an independent Mid-Term Review to be conducted in Year 2. This includes an independent consultant fee for 30 working days × USD 400/day = USD 12,000; field travel and logistics to project sites, including transport, accommodation, and DSA support = USD 5,000; stakeholder consultation and validation workshop costs, including venue, refreshments, participant transport reimbursement, and facilitation costs = USD 7,000; and report production, editing, printing, communication, and administrative costs = USD 3,118. Total Mid-Term Review cost = USD 27,118.
Final Project Evaluation				46202	46,202	Covers the cost of an independent Final Evaluation to be conducted in Year 4. This includes an independent consultant (M & E Specialist) fee for 40 working days × USD 400/day = USD 16,000; field travel and logistics to project sites, including transport, accommodation, DSA support, vehicle hire and fuel = USD 10,000; stakeholder consultation and validation workshop costs, including venue, refreshments, participant transport reimbursement, facilitation and documentation = USD 12,000; and report production, editing, printing, dissemination, communication and administrative costs = USD 8,202. Total Final Evaluation cost = USD 46,202.
Bank charges	2009	2009	1004	1004	6,026	
	62,271	**89,389**	**59,258**	**102,446**	**313,364**	

H. Include a disbursement schedule with time-bound milestones.

Table 22: Budget Disbursement Schedule

	Upon signature of the Agreement	**One Year after Project Start**	**Year 3**	**Year 4**	**Total**

Scheduled date	**January 2027**	**January 2028**	**January 2029**	**January 2030**	
Project Funds	1,254,918	1,158,427	873,007	434,284	3,720,636
Implementing Entity Fees	62,271	89,389	59,258	102,446	313,364
Total	**1,317,189**	**1,247,816**	**932,265**	**536,730**	**4,034,000**

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A: Record of endorsement on behalf of the government2

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

(Enter Name, Position, Ministry) Amb. Baraka Haran Luvanda. Deputy Permanent Secretary, Vice President's Office	Date*: June, 10, 2026 (Month, day, year)*

B: Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

6. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (National Environmental Policy (20210; National Climate Change Response Strategy (2021-2026); Nationally Determined Contributions (2021-2030); National Adaptation Program of Action (2007); National Environmental Master Plan for Strategic Interventions (2022-2032); Tanzania Development Vision 2025-2050) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.



Fredrick F. Mulinda

Implementing Entity Coordinator

Date: *12th November 2025*	Tel. and email: **+255 753 240 517**, nieaf@nemc.or.tz /kasigazi.koku@gmail.com
Project Contact Person:	Dr Sixbert Mwanga
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VICE PRESIDENT'S OFFICE

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Our Ref: CBA.78/90/03

10th June, 2026

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

SUBJECT: ENDORSEMENT FOR RESTORATION OF LAKE BABATI FOR ENHANCED CLIMATE ADAPTATION

Please refer to the subject captioned above.

2. In my capacity as the designated authority for the Adaptation Fund in Tanzania, I confirm that the above national grant proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Babati District.

3. Accordingly, I am pleased to endorse the above grant proposal with support from the Adaptation Fund. If approved, the project will be implemented by National Environment Managament Council (NEMC) and executed by Climate Action Network Tanzania in collaboration with Babati District Council.

Thank you for your continued support.

Ambassador Baraka H. Luvanda
NATIONAL DESIGNATED AUTHORITY
DEPUTY PERMANENT SECRETARY (ENVIRONMENT)

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ANNEX 1 : List of individuals and institutions consulted

STAKEHOLDERS REGISTRATION FORM DURING SITE VISIT FOR COLLECTION OF PROJECT FORMULATION INFORMATION IN BABATI TOWN COUNCIL

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	FREDRICK MULINDA	M	NEMC
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	ENG.KISSINA SIMLIZY	F	MOW
	JONAS TULUHUNGWA	M	NEMC

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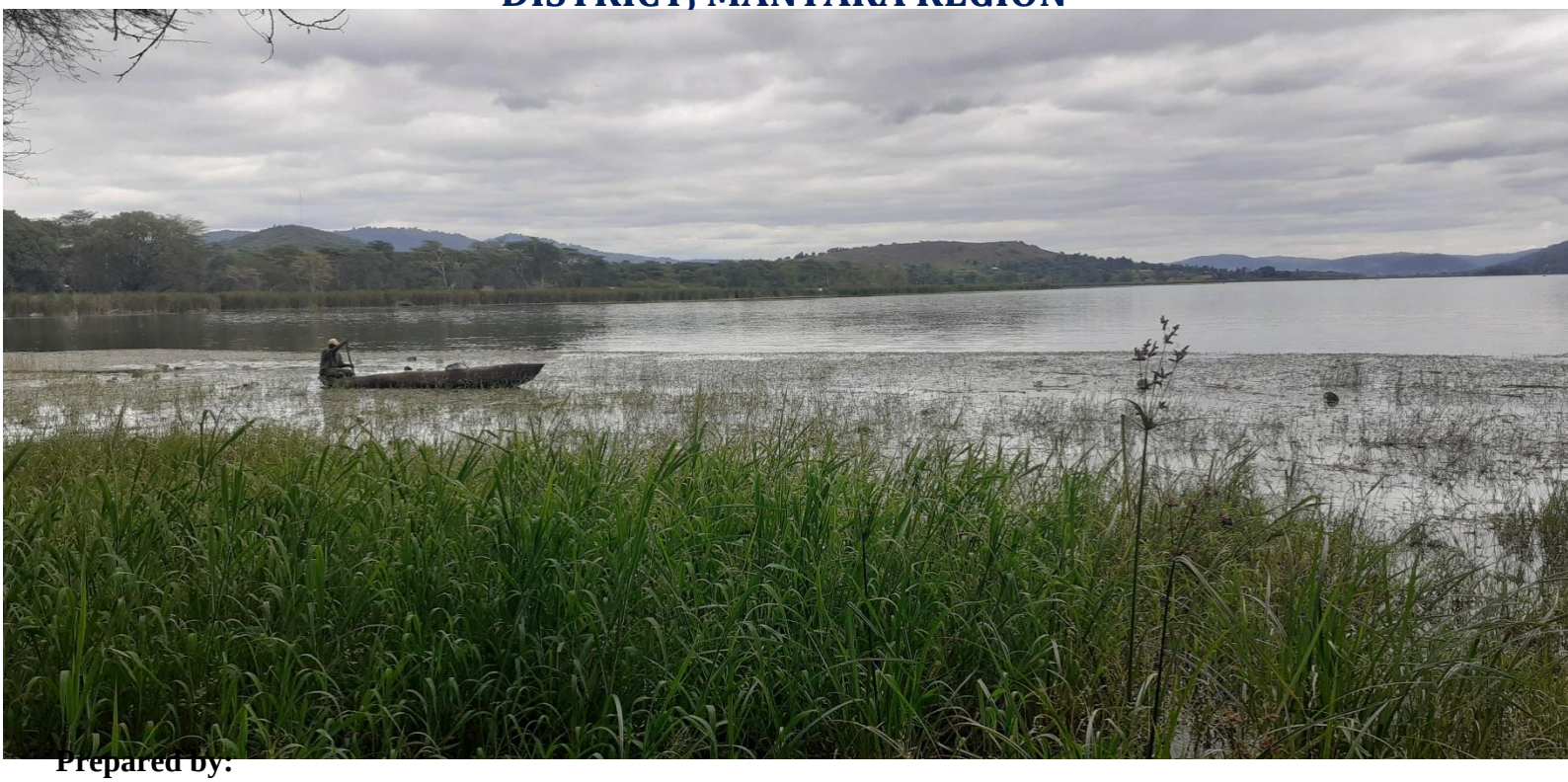
STAKEHOLDERS REGISTRATION FORM DURING SITE VISIT FOR COLLECTION OF PROJECT FORMULATION INFORMATION IN BABATI TOWN COUNCIL

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	YUSUFU S. DARA	MEMBER	M	0682099890
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Annex 2: Vulnerability assessment of Lake Babati

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL
BARAZA LA TAIFA LA HIFADHI NA USIMAMIZI WA MAZINGIRA

VULNERABILITY ASSESSMENT OF LAKE BABATI IN BABATI DISTRICT, MANYARA REGION



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EXECUTIVE SUMMARY

Lake Babati is within the East African Rift valley in Manyara region in Tanzania and it is a fresh water lake in semi-arid environment. Lake Babati basin covers approximately 18 km^2 whose water is collected from internal springs and surrounding hills of its catchment's areas.

In recent years, lake Babati has been experienced enormous spread of aquatic weeds, submerged in water with high growth rates. These aquatic weeds have rooted in the shallow water spreading towards the deep part of the lakes. The growth of these aquatic weeds is threatening other uses of the lake such as fishing and navigation activities. if no initiatives will be taken into consideration, there is a possibility that the surface area of the lake will be reduced rapidly. On this basis, Babati Town Council requested a support from National Environmental Management Council (NEMC) to uproot the aquatic weeds and propose the measures to reduce or eliminate these Aquatic weeds completely.

NEMC therefore, composed a team of experts from NEMC, UDSM, RS and BTC to assess at what extent the aquatic weeds affect the lake and the surrounding community. Specifically, the experts were requested to (i) identify anthropogenic activities associated with the increase of aquatic weeds in the lake, (ii) visit the lake and observe the aquatic plants and its coverage around and within the lake, and (iii) discuss with different stakeholders about ongoing activities/projects and measures to be taken to protect the lake.

The composed team visited the lake and collected the information for Four days from 8^{th} -12^{nd} June 2021. The information was collected through (i) Literature review (ii) Stakeholder consultations (iii) Physical field visits (iv) Field observation.

According to the group discussion with villagers, most of the activities that threaten the Lake include the poor farming upstream and around the lakes, over grazing, bricks making, illegal fishing, poor solid waste managements, Domestic uses (e.g., washing clothes around the lake and Car wash). The poor faming is the sources of nutrients input into Lake Babati. This nutrient which are in a form manure and fertilizers enter lakes through runoff. Both siltation and nutrients are the sources of the Aquatic weeds observed in the lake.

The aquatic weeds have been covering the large area around and, in the lake, Babati. The covered area with aquatic weeds starts from the shore spreading up to the depth of 3m of the lake. For the moment, the aquatic weeds are limited to around the depth of 3meters although there is a possibility of aquatic weeds spreading towards the deeper part of the lake. The growth and the spreading of these aquatic weeds has seriously affected about 760 fishers which relying on the fishing activities. The fishes hide into these submerged weeds and become difficulty to be trapped.

Without taking initiatives, the current situation shows the lake Babati is heading towards dying and disappearing. This situation will cause significant economic impact because a higher percentage of their communities are engaged and depends on fisheries, livestock, agriculture and small entrepreneurship. In this regards, the lake's disappearance will significantly affect their living conditions and the economy as a whole. To ensure effective and sustainable management of Lake Babati, the study team recommends, to review the lake Boundaries including reestablishment of adequate buffer zones (60 meters). The team also recommends that the local communities adjacent to Lake Babati and other relevant stakeholders should be well informed on the noted land use changes and the associated impacts to the Lake resources. This can be done through awareness creation and capacity building in terms of both technical and financial capacity among local communities and district officials on how to ensure sustainable management of the Lake and its resources. It also recommended that the current mitigation measures in particular law enforcement should be reviewed and emphasized to be participatory so as to develop sense of ownership among all Lake Stakeholders including local communities who are main users of the Lake and its resources.

ACKNOWLEDGEMENT

The success of this work is due to the efforts of many people. It is not possible for a single individual to cover all the aspects that has made this assessment study into being and the National Environment Management Council (NEMC), I therefore deeply grateful to all those who have, with such good grace given their time and energy to supply valuable opinions, facts or even moral support.

NEMC would especially like to thank Manyara Region-RAS office and Babati Town Council office for their cooperation during the study in their area of jurisdiction.
Heartfelt appreciation is also extended to UDSM- School of Aquatic Sciences and Fisheries Technology (Dr. Siajali Pamba); Manyara Regional Commissioner's office (Mr. Michael Gwandu- Regional Environmental Management Expert); Babati Town Council (Ms. Grace Rambau-Fisheries Officer and Ms. Monica Muhochi- Environmental Officer) as well as Wards and respective Mtaa offices for their kind co-operation and necessary information regarding the assessment which helped in the completion of this report.

Special thanks are extended to fellow staffs particularly from Directorate of Environment Research and Management (Ms. Ritha R. Said-Team leader, Mr. Noel Kikwale -NEMC Northern Zone and Ms. Janeth Mwakyusa-NEMC Intern) for their efforts to the success of this study.
May God bless you all.

LIST OF ABBREVIATION

NEMC	National Environment Management Council
RAS	Regional Administrative Secretary
GDP	Gross Domestic Product
UN	United Nation
EMA	Environmental Management Act
URT	United Republic of Tanzania
BTC	Babati Town Council
VEOs	Village Executive Officers
WEOs	Ward Executive Officers
RS	Regional Secretariat
UDSM	University of Dar es Salaam
FGD	Focus Group Discussion
BMUs	Beach management Units
DO	Dissolved Oxygen

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1.0 INTRODUCTION

1.1 General Introduction

The freshwater Lakes of Tanzania including Victoria, Nyasa and Lake Tanganyika (URT,2013), and Babati, are undergoing successive dramatic changes. Intensive non-selective fisheries, extreme changes in the drainage basin vegetation, industrialization, agricultural developments dams and the introduction and invasion of exotic species are among the factors that have led to the destruction of the native and endemic components of the Lakes (Nonga, 2012). The lakes have been loaded with nutrients which accelerate the growth of Aquatic weeds.

Aquatic weeds are those unabated plants which grow and complete their life cycle in water and cause harm to aquatic environment directly and to related eco-environment relatively. Aquatic weeds often reduce the effectiveness of water bodies for fish production. They can assimilate large quantities of nutrients from the water reducing their availability for planktonic algae (Lancar and Krake, 2002).

Aquatic weeds interfere also with navigation and recreation. They may also cause reduction in oxygen levels and present gaseous exchange with water resulting in adverse fish production. Although excessive weed growth may provide protective cover in water for small fish growth it may also interfere with fish harvesting. Dense growth of aquatic weeds may provide ideal habitat for the development of mosquitoes causing malaria, elephantiasis filariasis. These weeds may also serve as vectors for disease causing organisms and can greatly reduce the aesthetic value of water bodies from a recreational point of view (Lancar and Krake, 2002).

Free-floating plants (e.g., water hyacinth) attract attention because their often-massive infestations are so obvious. They move with wind and floods, and some have stopped river or lake navigation. They float free and never root in soil. Submersed plants (e.g., hydrilla) complete their life cycle beneath the water. Emersed aquatic weeds (e.g., common cattail) grow with their root system anchored in bottom mud and have leaves and stems that float on water or stand above it. They grow in shallow water, but all can impede flow, block boat movement, clog intakes of electric power plants and irrigation systems, and hasten eutrophication (Lancar and Krake, 2002).

In Tanzania the aquatic weeds especially water hyacinth was observed in 1955 in river Sigi (LVEMP, 1999). Since its first appearance in the Lake Victoria in 1987 water hyacinth has continued to invade water bodies and wetlands in most of Tanzania lakes (Ndunguru et al., 2001). Aquatic weeds have currently spreading in small lakes and lake Babati is not exception. They are progressively increasing in lake Babati due to ongoing siltation process. In late 1990s, Babati Lake was surrounded with Acacia trees and emersed aquatic plants such as cattils/Typha (Katonge, 2018); the submerged plants were not common. In recent years, lake Babati has experienced an enormous spread of aquatic weeds, submerged in water with high growth rates. These aquatic weeds have rooted in the shallow water spreading towards the deep part of the lakes. The growth of these aquatic weeds is threatening other uses of the lake such as fishing and navigation activities. Also, if no initiative is taken into consideration, there is a possibility that the surface area of the lake will be reduced rapidly. On this basis, Babati Town Council requested support from the National Environmental Management Council (NEMC) to uproot the aquatic weeds and propose measures to reduce or eliminate these Aquatic weeds completely.

1.2 Objectives of the Assignment

NEMC therefore, composed a team of experts to assess at what extent the aquatic weeds affect the lake and the surrounding community. Specifically, the experts were requested to do the following:

To identify anthropogenic activities associated with the increase of aquatic weeds in the lake.

To visit the lake and observe the aquatic plants and its coverage around and within the lake.

To discuss with different stakeholders about ongoing activities/projects and measures to be taken to protect the lake.

The team composed of experts from NEMC, UDSM, RS and BTC visited the lake and collected the information for Four days from 8th -12th June 2021.

Overview of Babati Town Council

1.3.1 Location, Boundaries and Geographical Setting

Babati is a small town in Babati District of Manyara Region of Tanzania. It is the administrative capital of the district and also the administrative capital of the Manyara Region. The new status boosted the town into rapid growth. Since Babati town received the role as district and regional capital, the urbanization process and economic activities increased. Babati town is accessible from the main road between the larger cities Arusha and Dodoma, which enable the food supply, marketing and retailing of processed and readymade foods from outside to Babati town (Lyding, 2009, Katonge 2018).

1.3.2 Climatic conditions and Vegetation

Babati receives an average rainfall between 450mm and 1,200mm per year, with two rainy seasons. The short rain begins in October and ends in December while the long rainy season starts in January with dry spell during February and ends in May. Also, the region has an average temperature ranging from 13ºC to 33ºC depending on altitude and season. The region is usually cool during June through September and warm from October to April. Some areas along the rift valley experience subtemperate type climate as a result of agroecological zone's influence.

1.3.3 Population

According to the 2002 population census, Babati town has a population of 31,077 people of which 28,000 equivalents to 90% of the total population live in the town proper, covering the areas of Babati, Maisaka, and Bagara. 3,077 people, equivalent to 10% live in the peri - urban area of Nangara village. The town's population Growth Rate is estimated at 3.8% annually (URT, 2003). Since 2002 Babati was promoted and become headquarter of Manyara Regional, many people from other regions immigrate into the town for business, work and looking for other opportunities. By 2009, population in Babati Town was estimated to be 74,000 of which 40,000 live in town proper and 34,000 in peri-urban (URT, 2003). According to the national population census of 2012, the Council had a population of 93,108.

1.3.4 Economic Activities

Main economic activities in Babati Township include agriculture, fisheries, livestock, small-scale industries and commercial activities. Agricultural and livestock keeping are the main economic activities carried out within the council at an average of 80% of total population. The main crops cultivated around Lake Babati are maize, beans sorghum, groundnuts, castor oil, pigeon peas and cotton. Agriculture is the major source of income in the area and maize is the main food crop. The vegetables most commonly cultivated are tomatoes, and cabbages which are grown around the lake and the horticultural crops cultivated are bananas, pawpaw, oranges, lemons, and guavas. A small amount of Robusta coffee and sugarcane is grown around the lake as cash crops; all these activities accelerate degradation of lake shores. Cattle are the dominant species of livestock kept around lake and other are goats and sheep (Waggoner, 2006; Gwandu, 2013).

1.4 Literature Reviews

1.4.1 Importance of Lakes

The importance of Lakes is not only accounted for their being highly productive, biologically rich and providing many ecological services, but also their support to both biodiversity and the economy (McCartney et al., 2004). They are natural assets which make significant contributions to the national economies (Munishi et al., 2003; McCartney et al., 2004; URT, 2007). Despite their large size, Lakes are sensitive to the effects of a broad range of environmental pollutants from anthropogenic activities such as agricultural and urban runoff, industrial and municipal facilities, spills and hazardous waste sites (Sunil and Chippa, 2013). Urbanization, accompanied by industrial growth, brings an increase in the number of municipal water and sewage treatment facilities and industrial plants that discharge effluents into the Lakes (Safari et al., 2012).

1.4.2 Description of Lake Babati

Lake Babati is within the East African Rift valley in Manyara region in Tanzania and it is a fresh water lake in semi-arid environment. Lake Babati basin covers approximately 18 km^2 whose water is collected from internal springs and surrounding hills of its catchment's areas. On the Northern East part of the lake there was mount Kwaraa and Ufyomi forest. However, the ecosystem of Lake Babati has been under pressure due to over exploitation of its resources mainly arable land, water resources, as well as fodder and its grazing land potential (Gwandu, 2013).

The Lake Babati is located in Babati town ship at a junction of equal distance from Arusha, Singida and Dodoma regions, which is about 168 km from Arusha, and 700 km from Dar es Salaam city and 650 km from Mwanza City. It is an approximate average attitude of 1300m above sea level. Lake Babati is located along longitude 35^o 45'E and latitude 4^o 15'S and 4^o 18'S and 35^o 42'E. The study was carried among local communities of five village namely: (i) Nangara Ziwani (ii) Nakwa (iii) Himiti (iv) Ngarenaro and (v) Majengo in Babati town ship.

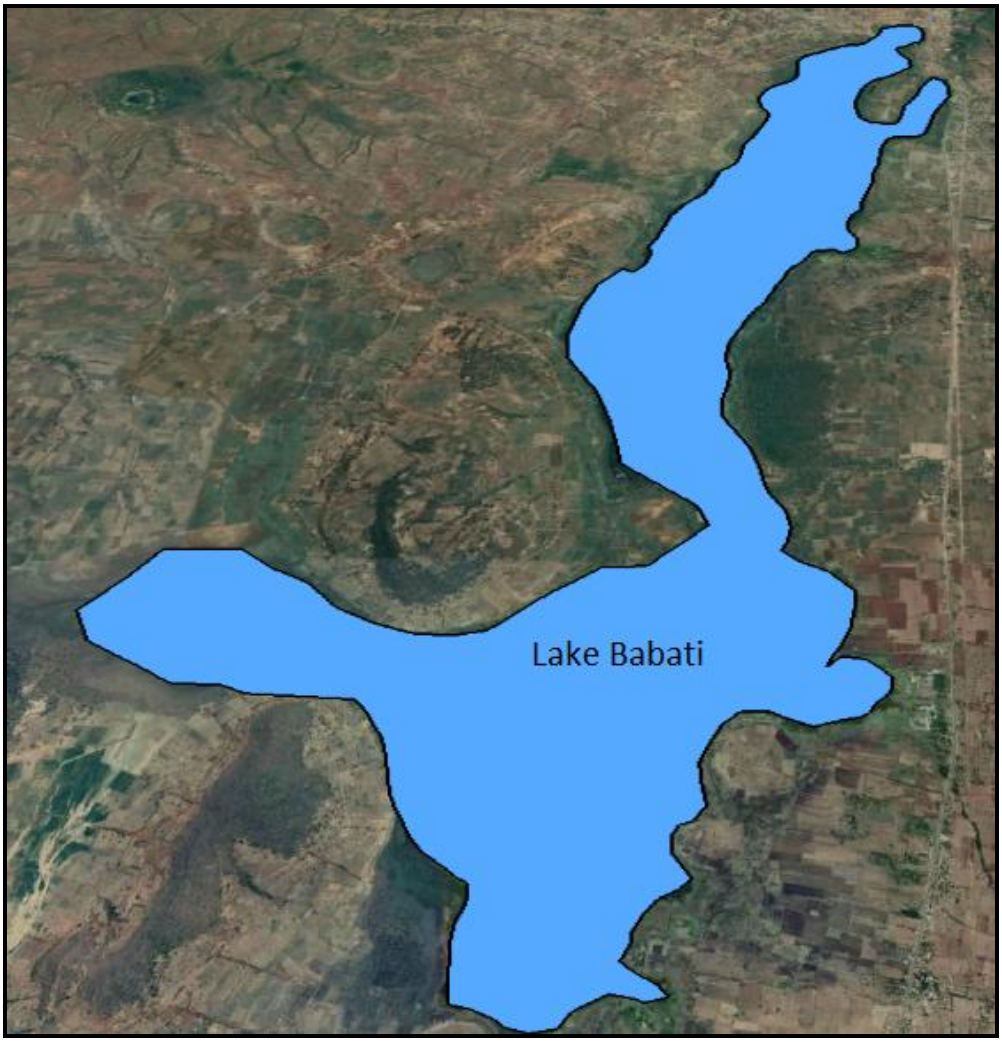


Figure 1.1: Google map showing the lake Babati

1.4.3 Anthropogenic Pressure on the Lake Babati

Lake Babati biodiversity is under stress from a number of factors. For example, in the Lake Babati watershed, invasive species, habitat loss, degradation and fragmentation, rapid residential growth and infrastructure development, unsustainable agriculture practices, pollution of tributaries and open waters, altered hydrology, mining and harvest of fish and forests (Anon, 2006; Gwandu, 2013).

The most anthropogenic activities carried out within and outside the area surrounding the lake include uncontrolled grazing, cultivation, extraction of building minerals (sand and stone), tree clearing, use of fishing gears and other human activities. This means that, any degrading factor due to outside activities has great influence inside the Lake on water purity, ecosystem performance and reduce water level (Anon, 2006; Gwandu, 2013).

1.4.3.1 Land use Changes

There are dramatic land use changes in Babati Town especially in the catchment area of Lake Babati in the period 1990 –2010 and these changes have negative impacts in terms of loss of natural habitats for both flora and fauna, causing negative impacts to both aquatic species and people (Lyding, 2009; Hariohay, 2013). Conservation educations, land use planning, family planning to reduce rate of natural population growth and income generating projects should be emphasized in the conservation of the lake Babati environment (Hariohay, 2013).

1.4.3.2 Population Expansion around Lake Babati

Babati is a fast-growing town. Since it became Town Council and Head Quarter for Manyara Region in 2002, more people have moved to the town looking for work and a lot of bureaucrats have also been transferred there. There are many challenges to a growing town. Housing, transport and working opportunities are the main concerns. But solid and liquid waste management is also a challenge (URT, 2003).

1.4.3.3 Overgrazing

Overgrazing around Lake Babati shore reduces lakeside vegetation and eliminating food for aquatic and wildlife (Obando, 2008). This causes the reduction of vegetation and exposing the lake shores into a risk of erosion. Sedimentation as a result of erosion tends to reduce the lake capacity, resulting in decreased water supply, flood control, water quality, and impairment of aquatic life and wetland habitat (Kent, 1994). The depletion of vegetation from lake shores areas causes increase erosion and gully formation. The cattle are dominant species of the animals kept around Lake Babati. The cattle are important sources of income and traditionally are sources of pride and status among the pastoralists. The impacts of heavy grazing of cattle are often readily apparent along the lake shores that affected water bodies (Moore et al., 1984; Glenny et al., 1987; de Winton et al., 1992). Livestock usage of lake margins is disproportionately high, particularly in seasonally hot dry climates, because they provide access to drinking water and source of succulent vegetation. Cattle directly affect marginal vegetation (Ellison, 1960; Reinoldii et al., 1975; Platts, 1978; Belsky, 1986). Pastoralists such as the Maasai of East Africa adapted life in arid lands by designating wet and dry season grazing areas (Berger, 1993). Their use of the rangelands was based on mobility, splitting and dispersing livestock over the landscape during wet and dry seasons (Oba et al., 2000) to ensure limited dry concentrated continuous grazing around the wetland and degraded lake shore. The sphere of the Maasai in Kenya and Tanzania is continually experiencing dramatic changes in land tenure and land use, with broad consequences on the rangeland dynamics (Campbell et al., 2000) through the establishment of wildlife protection areas (Western and Wright, 1994). In Kenya, the Maasai land was transformed from communal into group ranches in the 1960s (Graham, 1989).

1.4.3.4 Illegal Fishing

The detrimental impact of illegal fishing in all its forms deplete fish stocks in Lake Babati, damaging fish ecosystems and disrupting the livelihood of lawful fishers (Agnew and Barnes, 2004). Fish are an unconfined resource and up until recently, exposed to uncontrolled exploitation. Most of illegal fishing practices in lake Babati are undersized fishing nets like mosquito net, kokoro (sein net), nets of timber. Others are katuli, chicken wire mesh and poisonous plants, which are illegal and harm surrounding habitat.

This exploitation has been exacerbated over the course of the twentieth century and into the current century through the use of large-haul, highly destructive fishing methods (e.g., Use of undersized nets, chicken wire mesh and mosquitos' nets), an indiscriminate approach from many fishing nations as to where, how and what they fished and soaring market prices (Balton, 2004). Some fishing techniques also may cause habitat destruction. Poisoning i.e., use Ichthyotoxic plants (*Utupa*) in fishing, which are illegal.

1.5 Aquatic Weeds

The simplest definition of a weed is a plant that is a nuisance. Thus, an aquatic weed is an aquatic plant which interferes with the use of water, or in some other way constitutes a nuisance to man or hazard to human welfare. However, in contrast with single purpose systems such as an agricultural crop in which weeds are readily identified as such, water bodies frequently have more than one use, and assessment of the weediness of a plant may be confused when it interferes with one use. such as navigation, while promoting another, such as fish production(Balton, 2004).

Submersed plants are rooted in the bottom sediments and grow up through the water. Flowers or flowering spikes sometimes emerge above the water surface. The main criteria for identification are leaf arrangement and leaf shape.

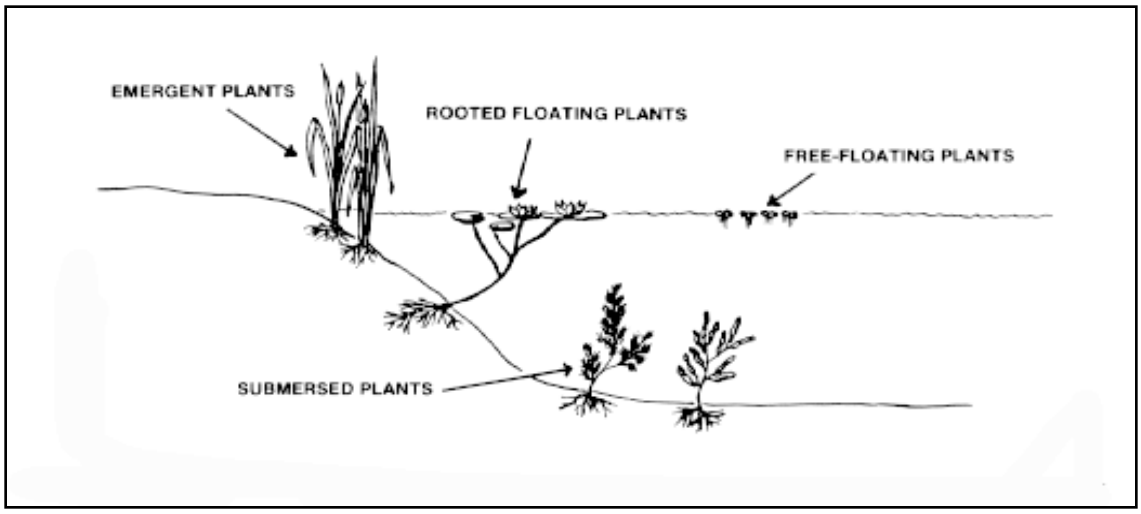


Figure 1.2: Different Aquatic weeds in the lake

1.5.1 Causes of Aquatic Weeds in Lakes

Many aquatic weeds or their seeds are carried into a lake by wind birds, fish introduction, fishermen, etc. These weeds infest a lake only if the water conditions are just right. This usually means that nutrients are entering the lake from runoff or stream inflow.

1.5.2 Effects of Aquatic Weeds in Lakes

Aquatic weeds can assimilate large quantities of nutrients from the water reducing their availability for planktonic algae. They may also cause reduction in oxygen levels and present gaseous exchange with water resulting in adverse fish production

Aquatic weeds cause a variety of problems in water bodies all over the world. They interfere with water flow in and out of the lakes; impede the movement of boats for transport, fishing and recreation; interfere with various methods of catching fish; degrade water quality by adding taints and odours to the water and by decreasing dissolved oxygen content; alter the flora and fauna of aquatic ecosystems by providing new habitats, removing others and by affecting light penetration in the water; and increasing water loss through evapotranspiration (Mitchell, 1985; Aloo *et al.,* 2013; Bansal *et al.,* 2019).

Apart from the negative effects, aquatic weeds form an important element of the aquatic environment as they provide food and shelter for insects, fish and various forms of wildlife. Other uses of aquatic weeds include: food for livestock; as compost manure, mulch or other forms of soil additives; for treatment of wastewaters; for pulp, paper and fibre production for building and weaving; and for energy either for burning directly or for generation of biogas and alcohol (Michell, 1985; National Research Council, 2002).

1.5.3 Controlling of Aquatic Weeds in Lakes

1.5.3.1 Mechanical Control

Manual and mechanical methods such as cutting and dredging are potential ways to deal with excessive growth of aquatic weeds in lakes. Mechanical devices such as dragline excavators, hydraulic back-actors, backhoes as well as small designed tools may be used to remove aquatic weeds (Lishawa*et al.,* 2017; Bansal et al., 2019). However, parts of the weeds left in the water after cutting will decay and generate a considerable demand for oxygen. This can adversely affect aquatic life, for example, fish kills, may occur when a large amount of vegetation has been cut in a small water body. For this reason, this technique should combine both a system for cutting and harvesting/collection of the cut plants. This not only reduces the risk of oxygen deficits but also makes it possible to make use of the harvested material (Samiei and Mabaraki, 2019).

1.5.3.2 Water Level Manipulation

Water level manipulation is used in different parts of the world to control emergent aquatic weeds such as *Typha species* and *Cyperus species* through flooding and desiccating substrates (Asamoah and Bork, 2010; Bansal *et al.,* 2019). However, this method becomes most effective when combined with other management techniques for example burning and cutting. Also, the technique, needs to be carefully done as in some wetlands, especially those with organic soils, extensive desiccation increases inorganic nutrients which may exacerbate re-invasion of

aquatic weeds (Bansal *et al.,* 2019).

1.5.3.3 Chemical Control

There are specific herbicides that are used to control aquatic weeds in lakes such as imazomox and imazapyr (Bansal *et al.,* 2019). These herbicides are classified as systemic (absorbed and translocated throughout the plant) and are considered non-selective (kill or damage all plants). Applications of these herbicides are typically carried out as foliar treatments by ground applicators using tank sprayers, but large treatments can be performed using aircraft. However, Herbicide treatment efficacy is reportedly season-dependent and needs to be selectively done to avoid damage of untargeted plants (Samiei and Mobaraki, 2019).

2. O METHODS

2.1 Introduction

Methods used to collect data for this study were information obtained from literature; Stakeholder and key informant interviews; as well as Physical field visits. Details for each method used are given hereunder.

Literature review*:* Relevant documents were collected and reviewed, which included among others, relevant policies, legislation, study reports, District environmental, socio-economic and investment profiles.

Stakeholder consultations*:* Consultations with key stakeholders were done to offices of Regional Commissioner, Town Director, Environment and Fisheries Departments Respective Mtaa and Villages as well as individuals to get their views and perceptions on the causes and effects of aquatic weeds and the ecosystems surrounding Lake Babati area. Also, possible management actions that could be taken to ensure sustainable socio-economic development and environmental conservation were suggested.



Plate2.1: Stakeholders Consultation meetings at Nangara Ziwani and Majengo Mtaa

Physical field visits: Site visits were undertaken in specific areas to identify the extent/level of aquatic weed coverage, land degradation and pollution, human encroachment and siltation. Where necessary photographs were taken (See Plate 2.1). This method also assisted the team to compare the existing land uses with those provided by the key informants/stakeholders and to obtain reliable data of the study area.

Field observation: The field excursions were conducted in those specific areas for fact finding and to observe the current state of the environment and socio-economic activities in specific lake ecosystems. Key areas of focus in the assessment were: observe different types of activities undertaken by community members such as crop farming, livestock grazing, fishing, grasses and trees cutting and unplanned settlements. Also, the researcher observed different effects caused by human activities which found in the study area. Field observation was used to collect data, specifically around the lake and agricultural principles employed in the villages surrounding Lake Babati.

3.0 RESULTS AND DISCUSSION

3.1 Anthropogenic activities associated with the increase of Aquatic Weeds

Through the stakeholder's consultation it was realized that various anthropogenic activities are prevailing in the study areas which include cultivation, fishing, livestock keeping, brick making and beekeeping. Regarding Lake Sustainability, numerous negative impacts due to anthropogenic activities (See Plates 3.1) were cited to threaten the Lake. Respondents in all villages revealed encroachment (See Plates 3.2). No environmental impact assessment was done before construction and deforestation as the major impacts to the Lake. These results could be because, communities have cultivated within the buffer zone leading to loss of pastures for hippo. Thus, degradation of riparian zones not only affects the riparian area but also the surface and ground water resources and the aquatic fauna and flora; and the terrestrial ecosystem (Roger, 2001). Himiti, Nakwa and Nangara Ziwani respondents on the other hand were having concern on soil erosion and siltation in which brick making was taking place at alarming rate leaving large gullies in the buffer zones. The ecological implication of such erosion could be the deposition of eroded sediments in the Lake hence damaging the spawning grounds of fish. Siltation process suggests the ongoing decrease of Lake Babati depth as it is documented by BTC (2007) that, it has changed from 8 to 5 meters between 2004 and 2011.

On the other hand, aquatic weeds both submerged and emergent need a substrate for their roots. Therefore, all activities that promote the increase of siltation in the lake also accelerate the increase of Aquatic Weeds in the lake. Siltation is associated with the decrease of the lake depth, and hence provide a right condition for aquatic weed especially submerged and emerged plants. The sediments that brought into the river from upstream, they are carrying nutrients into the lake which promote the growth of aquatic weeds. According to the group discussion with villagers, these activities; the poor farming upstream and around the lakes, over grazing, bricks making, illegal fishing, poor solid waste managements, Domestic uses (e.g., washing clothes around the lake and Car wash)

3.1.1 Poor Farming Practice

Poor farming practices around lake Babati strongly influences the presence of chemicals in water such as pesticides, herbicides and fungicides just to mention a few which on the other hand impacts the quality of water in the aquatic systems as these chemicals are carried by surface flowing water into the lakes. The cultivation along the lake also influences the presence of plant organic matter in rivers and lakes which results into a reduced amount of Dissolved Oxygen (DO) in water as this is the case the for presence of aquatic animals is also affected as these animals cannot survive at low level of DO. Therefore, the cultivation of crops along the lake should be strongly avoided, not just because it influences the decreased amount of dissolved oxygen and loading of organic matter but the practice also encourages the siltation of rivers leading to the decrease of the depth of the lake.
Nutrients from manure and fertilizers enter lakes through runoff and soil erosion from upstream through big gully from Nakwa Village, Riroda, Hoshan, Bonga and Himiti. This runoff may contain a high level of these dissolved nutrients, increasing the risk of contaminating lakes. This facilitates aquatic weed in lake Babati.





Plates 3.1: Farming activities along Nangara Ziwani

3.1.2 Overgrazing

Most livestock keepers around lake Babati use green belt as grazing area with large number of livestock. Overgrazing reduces ground cover, enabling erosion and compaction of the land by wind and rain, which reduces the ability for plants to grow and water to penetrate soil which harms soil microbes and results in serious erosion of the land. This facilitates aquatic weed and reduce water quality.





Plates 3.2: Livestock activities along Nangara Ziwani

3.1.3 Fishing Activities

Fishing is among the important income generating activity of the local communities in Babati District. The lake Babati has the area of 18 km and depth of 5.9. The dominant fish species of the lake are Tilapia *Oreochromis esculentus* and African catfish clariaus gariepinus. Others are Haplochromes and freshwater shrimps which mostly of the fishermen used them as fishing bait. Most fishing vessels used in the lake are traditional craft of dugout canouns made up of trees propelled by paddles. There are about 131 registered fishermen in the lake until March 2021. The mostly fishing gears used are monofilament, gillnets, hand line, castnets and chicken wire.





Plate 3.3: Fishing activities at Nangara and illegal fishing gears used

3.1.4 Bricks Making Activities

Most of these activities are conducted outside the lake area at Himiti and Managhat Village but has direct impact on land, bricks making leave land with holes making it not suitable for Agriculture and also contribute degradation of land and aquatic environment.





Plates 3.4: Bricks making activities and environmental degradation at Himiti village



Plate 3.5: Cutting of trees as a source of Energy for bricks making at lake buffer zone

3.1.5 Domestic Uses

Domestic activities such as washing clothes near the lake increases amount of Phosphate which is the nutrient requirement for aquatic weeds growth. Based on the observation, communities around use lake water directly for drinking, cooking, bathing and washing clothes (Plate 3.6).



Plate 3.6: Lake water use for washing clothes

3.2 Aquatic Weeds and its Coverage at Lake Babati

Aquatic weeds cover the large area around and within the lake Babati. The covered area with aquatic weeds starts

from the shore spreading up to the depth of 3m of the lake. For the moment, the aquatic weeds are limited to around the depth of 3meters although there is a possibility of aquatic weeds spreading towards the deeper part of the Lake (Figure 3.1).

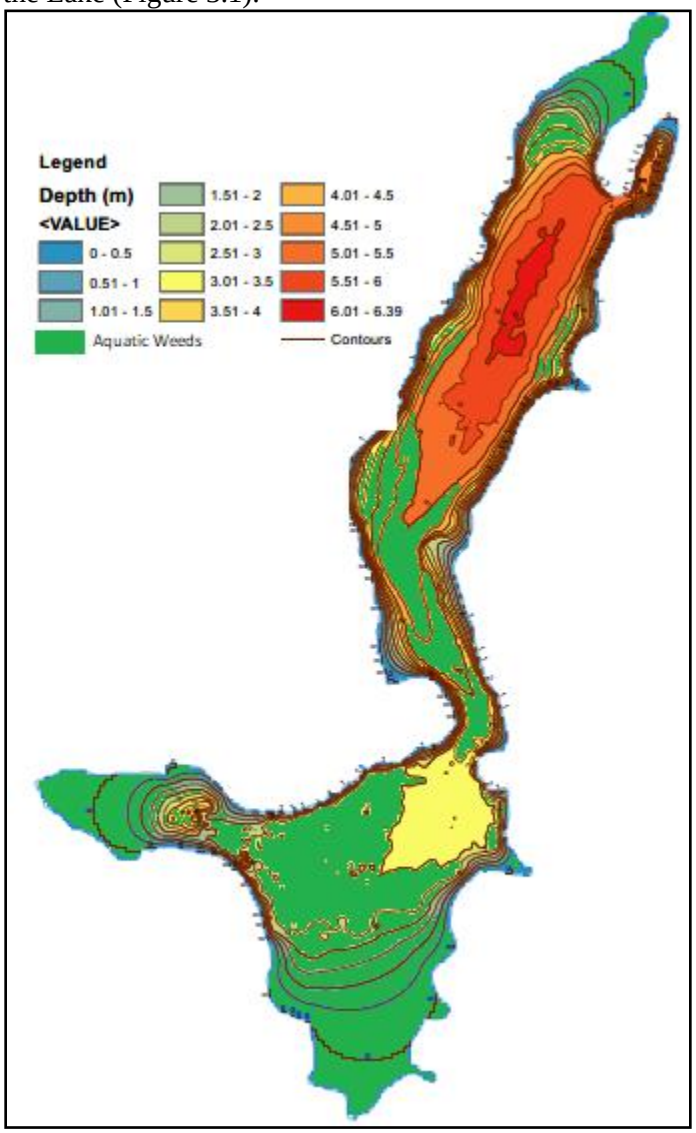
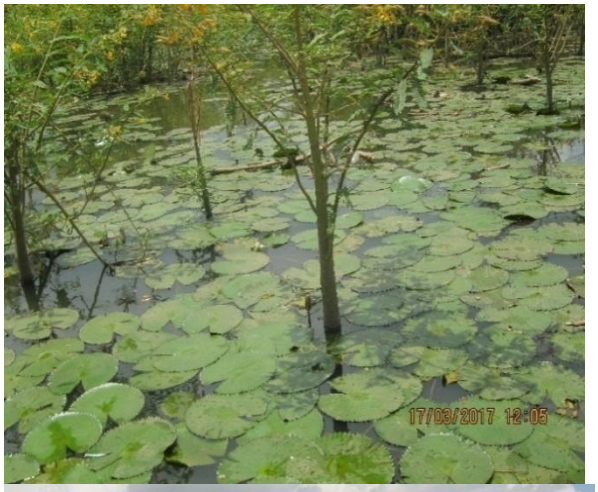


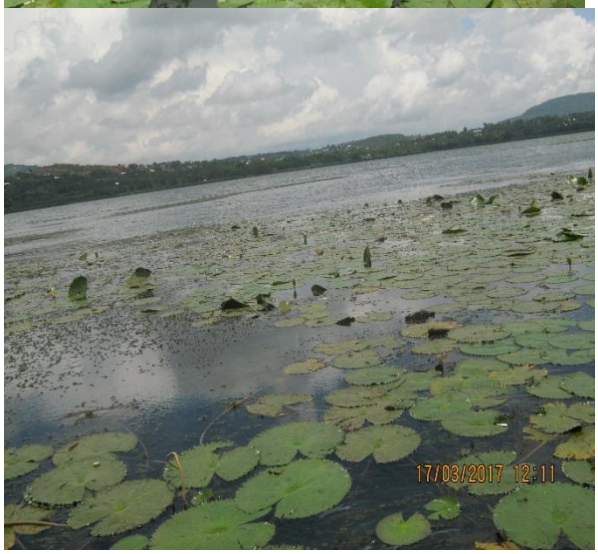
Figure 3.1: The coverage area of aquatic weeds in Babati Lake.

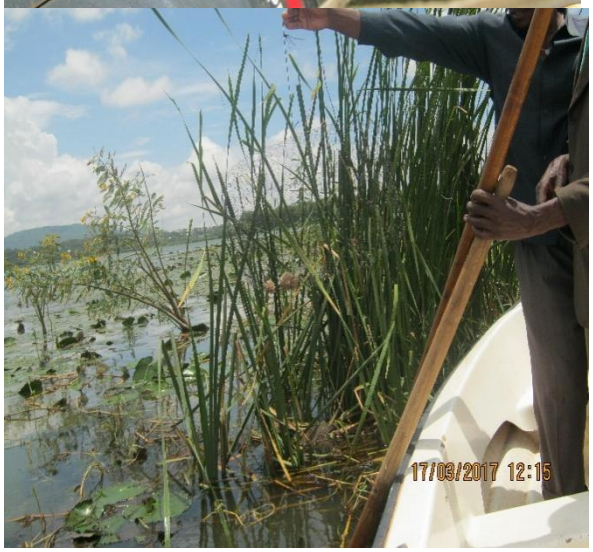
Based on the stakeholder meetings from the villages around the lake, the Local Government including experienced fishers explained that during 1990s, the lake had neither aquatic weeds nor mud. The lake was only surrounded by emergent aquatic weeds (Typha species) which were used for construction especially roofing their houses. The submerged and floating aquatic weeds was observed first after the El' Nino, in 1998. During this time, the lake invaded by new weeds which locally is known as *"Maranda"*. This is the kind of aquatic weeds that grow and spread within the water without appearing at the surface water (Plate 3.7).

By then, the growth rate and spreading of *"Maranda"* (submerged weeds) was not significant due to the limit of nutrients, high-water level and low siltation of the lake. Approximately five years after the El 'Nino, the *Maranda* spread widely into the lake and started to interfere with the fishing activities. The *Maranda* weeds have now grown massively creating a very serious problem in Lake Babati (Plate 3.7)









Plates 3.7: The extent and effects of aquatic weeds in Lake Babati

From the discussion with stakeholder and other scientific studies, we concluded that, the rapidly increase of aquatic weeds on the lake have been accelerated by anthropogenic activities including:

Agricultural activities contribute to lake damage because of the non-compliance of the 60-metre law along with water sources (Refer to Sub-section 3.1.1).

Animal husbandry contributes to pollution in lake due to many livestock deployed directly to the lake for pasture hence causing muddying (Refer to sub-section 3.1.2).

Fishing activities especially illegal fishing contributes to the pollution of the lake where local fishers are currently the main victims of such damage as well as the large increase in weeds in the lake (Refer to sub-section 3.1.3)

The Magnitude of Effects of Aquatic Weeds to Lake Babati

The growth and the spreading of Aquatic weeds into the Lake has seriously affected about 760 fishers which relying on the fishing activities. The fishes hide into these submerged weeds and become difficulty to traps them. Other effect of aquatic weeds includes reduction of the lake size because they spread and cover the large area of water that hinder fishing activities and providing the escaping route for illegal fishermen. The aquatic weeds also deteriorate water quality of the lake due to their decomposition after dying contributing to mud, thus reduce the lake depth and hinder navigation activities. Availability of dense aquatic weeds attracts some local brewers to hide themselves during the process of making local spirits, commonly known as *Gongo*.

Without taking initiatives, the degradation problem shows the lake Babati is heading towards dying and disappearing. This situation will cause significant economic impact because a higher percentage of their communities are engaged and depends on fisheries, livestock, agriculture and small entrepreneurship. In this regards, the lake's disappearance will significantly affect their living conditions and the economy as a whole.

3.3 Ongoing Management of Lake Babati

The Babati Town Council in collaboration with locals manages Lake Babati communities adjacent to the Lake. Harvesting process of the Lake resources mainly fish is under license in which fishermen should acquire licenses from the Local Government prior to fishing. The study revealed some strength for the ongoing Lake management that could ensure the enhanced conservation of the Lake and its resources. These include forest conservation along the riparian zone, law enforcement and environmental education.

Provision of environmental education to local communities bordering the Lake was another strength noted by the study. Local people are educated on the negative impacts associated with their anthropogenic activities to the Lake. The local communities through FGD revealed to know the consequences of their illegal activities within and around the Lake but they were constrained by the rampant poverty which made them to continue harvest the Lake resources irrespective the negative ecological impacts likely to happen.

Despite the noted management strengths in ensuring sustainable conservation of Lake Babati, some weaknesses are likely to undermine the conservation efforts were revealed to include the village government through VEOs and WEOs revealed to lack support from Town Government Officials as there were some officials who are deliberately engaging in illegal fishing. However, the Town Council Fisheries Officer asserted shortage of skilled staff coupled with inadequate conservation fund to be the reason for not conducting regular patrols. The study revealed illegal fishing in the Lake even during the period when Lake was closed for sustainable management to ensure effective breeding of fish. Absence of area for grazing away from the Lake was another weakness associated with poor Land Use Plan. Since Babati District is among the Tanzanian Districts with many livestock about 55, 110 livestock (BTC, 2011) there is a need to have grazing area for proper management of the Lake and avoiding unnecessary land use conflicts.

For proper conservation of the Lake resources and reduce illegal fishing. Similarly, for better results on conservation of the Lake Babati, the study revealed that community should participate in decision making, implementation stage, monitoring and evaluation of the Lake resources rather than remain as the mare beneficiaries. Host communities are valuable asset which must be carefully incorporated into management strategies for successful conservation programme of Lake Babati. Despite good laws for protection of the Lake environment, they were not effectively enforced. There is a lack of coordination among different law enforcement agencies.

Proposed measure for controlling Aquatic Weeds at Babati

There several methods for controlling the aquatic weeds at lake Babati that can be categorized in three groups. The first group is related to controlling the siltation of the lake by planting of trees for clear boundary demarcation and using contour ploughing, the second group is related to controlling the nutrients and the third category is to raise awareness and establish by laws. This will include, provision of environmental education, review the existing Land Use Plan, draft amendment of the by- laws, closing the Lake during breeding season, enforcement of the fishery and Environment Regulation.

4.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Introduction

This chapter summarizes the study and provides a conclusion discussion basing on the findings and related literatures. It also highlights recommendations in relation to the objectives of the study. It further points out the areas for future studies.

4.2 Summary of the Study

This study aimed at assessing the causes and effects of aquatic weeds in Lake Babati. Specifically, the study analyzed and evaluated the negative impacts due to anthropogenic activities to the Lake.

Study results indicate that, negative impacts to the Lake due to anthropogenic activities prevailing in the study area were mainly illegal fishing practices, soil erosion and siltation. Land use changes have occurred in all study villages for all zones such as cultivation, grazing and residence. On average, cultivation and residence zones increased by 3.1% and 4.9% respectively in the study area between 2000 and 2011 while grazing zone decreased by 5.3% in the study area during those years. All these activities increase siltation and substrate in the growth of aquatic weeds.

The major strengths of Lake Babati management are forest conservation along the riparian zone, law enforcement and provision of environmental education. The main weaknesses undermining the ongoing conservation strategies for the sustainable Management of Lake Babati were poor community participation and lack of proper land use plan that should allocate appropriate area for each land use category in particular grazing and cultivation.

4.3 Conclusion

The study concludes that, negative impacts to the Lake due to anthropogenic activities leads to siltation and eutrophication of the lake that accelerate the growth of weeds. The growth and the coverage rate of weeds are high and they spread from the shore towards the deep part of the lake. mainly illegal fishing activities, soil erosion and siltation. To large extent, land use changes have occurred in the study area for all zones such that cultivation and residence areas have increased while grazing area has decreased between 2000 and 2011. The noted land use changes have mainly resulted due to high rate of immigration into the area because of water availability and fertile soil that favor fishing and cultivation. High population in the urban areas leads to decrease in grazing land hence put much pressure on lake resources. However, it is possible to reverse the existing situation in land use changes and its impacts to the lake if appropriate measures will be applied.

4.4 Recommendations

To ensure effective and sustainable management of Lake Babati, the study team
recommends the following;

There should be review of Lake Boundaries including reestablishment of adequate buffer zones (60 meters). This should be done through community participation so as to ensure effective settlements reallocation and placement of clear and apparent boundary marks to avoid unnecessary encroachment.

Local communities adjacent to Lake Babati and other relevant stakeholders should be well informed on the noted land use changes and the associated impacts to the Lake resources. This can be done through awareness creation and capacity building in terms of both technical and financial capacity among local communities and district officials on how to ensure sustainable management of the Lake and its resources.

The current mitigation measures in particular law enforcement should be reviewed and emphasized to be participatory so as to develop sense of ownership among all Lake Stakeholders including local communities who are main users of the Lake and its resources.

To create community awareness on the conservation of the lake including control aquatic weeds and siltation.

To upgrade the lake Babati as the Protected area
To conduct several researches about the lake resources like TAFIRI, TAWIRI
To establish land use management plan around the lake
To facilitate environmental committee and beach management unit (BMUs) to manage the lake resources
Enforcement the law concerning to conservation of the lake.
To support the community in alternative economic activities.
To identify the opportunities found in the lake in the future
VPOs to provide support and awareness about conservation of the lake and to enforce 60 meters law

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ANNEX 3 : Similar projects justifying no duplication

Initiative	DP/Agency	Objectives	Implementer	Project Area	Timeframe
Strategic Water Harvesting Technologies for Enhancing Resilience to Climate Change in Rural Communities in Semi-Arid Areas of Tanzania (SWAHAT)	Adaptation Fund	Enhancing resilience and adaptation of semi arid rural communities to climate change-induced impacts of drought, floods and water scarcity.	National Environmental Management Council (NEMC)	Dodoma, Singida, and Tabora	2021-2025
Ecosystem-Based Adaptation for Rural Resilience	GEF	To increase resilience to climate change in rural communities of Tanzania by strengthening ecosystem resilience and diversifying livelihoods	VPO-DOE with Ministry of Agriculture, Livestock and Fisheries (MALF)	Shinyanga, Manyara, Dodoma, Morogoro, and Zanzibar	2016-2020
Enhancing Climate Change Adaptation for Agro-Pastoral Communities in Kongwa District	Adaptation Fund	Pilot practical and cost effective and community rooted solution to improve livelihood of poor people, restore and habilitate ecological systems, support agriculture and livestock production in Kongwa district	The Foundation for Energy, Climate and Environment, Kongwa District Council	Konga District Council, Dodoma	2021-2025

Smallholders' Utilisation of Smart Technologies in Agricultural Industries and natural resources management	Norway	Up scaling agriculture sectors for smallholder farmers	Ministry of Agriculture (MoA)	Manyara and Arusha regions	2017-2021
SRMP	IFAD, Irish Aid (IA), International Land Coalition (ILC), ILRI and Tanzania Government.	Promoting traditional livestock keepers and farmers to acquire, own, and maintain sustainable land management.	Ministry of Livestock and Fisheries; National Land Use Planning Commission (NLUPC); International Livestock Research Institute (ILRI); Community Organisations dealing with Livestock; and LGAs	Districts of Chalinze, Kiteto, Kilindi, Mvomero and Morogoro rural	2017-2021
SWIOFish	WORLD BANK	To Improve Management Effectiveness of Selected Priority Fisheries at Regional, National and Community Level	The Ministry of Livestock and Fisheries, FETA, TAFIRI, MPRU and LGAs	17 LGAS along Indian Ocean	2017- 2021
Projection of Climate Change effects on Lake Tanganyika	DANIDA	To assess the impact of climate change on Lake Tanganyika	TAFIRI	Lake Tanganyika basin	2016 - 2019
Ocean Acidification Observation in Tanzanian Coastal Waters	WIOMSA	Research based on Ocean Acidification Monitoring Programme	TAFIRI	Indian Ocean	2019 - 2022

Inclusive Green Growth of the Smallholder Agriculture Sector in SAGCOT	Norway	To increase access to inputs and improved agronomic practices To improve post-harvest handling, To improve access to markets, To improve the policy environment and advocacy for climate smart agriculture	Ministry of Agriculture (MoA)	SAGCOT Region	2016-21
GCCA Programme: Integrated Approaches for Climate Change Adaptation in the East Usambara Mountains	EU	To support 8 communities living near high biodiversity forests in the East Usambara Mountains to increase and diversify incomes, strengthen resilience and reduce vulnerability to climate change-related impacts.	ONGAWA and TFCG	Tanga Region	2015-2019
GCCA Programme: Scalable Resilience: Outspreading Islands of Adaptation	EU	To increase the adaptive capacity of 18 at-risk Tanzanian communities while pioneering replicable solutions to climate change vulnerability.	Community Forest Pemba	Pemba Island, Zanzibar	2015-2019
GCCA Programme: Igunga Eco-Village	EU	To increase the resilience of 9 local farmer communities in Igunga by increasing resilience to the adverse effects of climate change	Heifer International	Tabora Region	2015-2019
GCCA Programme: Eco-village Adaptation to Climate Change in Central Tanzania	EU	To roll-out the best practices from Chololo Eco-Village and introduce new innovations based on vulnerability assessment; Strengthen the	Eco ACT (IRDP)	Dodoma Region	2015-2019

(ECO-ACT)		capacity of local government institutions in two districts on climate change adaptation strategies; Establish an effective knowledge management system for learning and sharing.			
GCCA Programme: ECO-BOMA: A climate-resilient model for Maasai Steppe pastoralists	EU	Access to ecosystem services protected and improved. Economic asset of pastoralist communities developed. Local government capacity to cope with climate change increased. Knowledge about climate-related vulnerabilities and impacts and climate change adaptation solutions increased	ECO-BOMA	Arusha Region	2015-2019
Urban Resilience	DFID	Improving the urban resilience			
Scale up for water security and Agriculture resilience	DFID	Improving water security and agriculture resilience	Ministry of Water	National and basin level and LG	start April 2015
Assisting Institutions and Markets for Resilience	DFID	Strengthening how institutions and markets deliver climate resilience and low carbon growth		National Wide	2015 - 2020
Developing Core Capacity to Address Adaptation to Climate Change in	Least Developed Countries Fund (LDCF)	Enhancing Adaptation to Climate Change in Tanzania in productive coastal zones	VPO-DoE	Pangani, Rufiji, Bagamoyo, Zanzibar	2012-2017

Tanzania in productive coastal zones (GEF Project)					
Concrete Adaptation Measures to Reduce Vulnerability of Livelihoods and Economy of Coastal Communities of Tanzania	Adaptation Fund (AF)	Reducing Vulnerability of Livelihoods and Economy of Coastal Communities	VPO-DoE	Coastal zone	2012 -2017
Integrated Planning to Implement CBD and Resilience to Climate Change	Germany	Improved application of legal tools for land-use planning and participation in decision-making towards implementation of the CBD convention	GIZ	Katavi- Rukwa protected landscape and catchment near Sumbawanga	2014-2018
Climate-sensitive Water Resources Management	Germany	A soft and research based climate change adaptation aimed for Improved (climate-sensitive) Water Resources Data and Information Inter-sectoral cooperation Climate change adaptation in Water Resources Management Organisational and Leadership Development	GIZ	National, Lake Rukwa and Lake Nyasa Basins, up scaling to all other basins through multi-level approach	2013-2019

Ecosystem-Based Adaptation for Rural Resilience in Tanzania	GEF LDCF	To increase resilience to climate change in rural communities of Tanzania by strengthening ecosystem resilience and diversifying livelihoods	VPO	Kishapu, Mpwapwa, Mvomero, Simanjoro and Kaskazini A (Unguja)	December 2018-December 2022
Reversing Land Degradation Trends and Increasing Food Security in Degraded Ecosystems of Semi-arid areas of Tanzania	International Fund for Agricultural Development – IFAD	A climate change project promoting adaptation through reversing Land Degradation Trends and Increasing Food Security in Degraded Ecosystems of Semi-arid areas of Tanzania	Ministry of Agriculture	Nzega, Kondoa, Singida (Mkalama), Magu), and Pemba (Micheweni),	2018-2023
Capacity enhancement of policy makers and policy support institutions for climate information generation, management and integration into development plans and programmes	African Development Bank (AfDB)		VPO	Same and Mwanga districts	2018-2022
Small Grants Programme - Community Based Adaptation	UNDP	Adaptation	Bahi and Mnayoni		2013-2017
Concrete Adaptation Measures to Reduce Vulnerability of Livelihoods	Adaptation Fund (UNEP)	Reducing Vulnerability of Livelihoods and Economy of Coastal Communities	Coastal zone district		2012 -2017

and Economy of Coastal Communities of Tanzania (Adaptation Fund project)					
Electrification of North Western Tanzania - Rural electrification component from Rusumo Hydropower source	EU-Africa Infrastructure Trust Fund	Access for rural households and businesses to sustainable, affordable and renewable energy services	North-West Tanzania		2012-18
Enhancing comprehensive climate change resilience in Zanzibar	UNDP	Capacity building	DoE Zanzibar		2019-2022
Enhancing national capacity for mainstreaming climate resilience in Zanzibar	AfDB	Enhancing capacity to adapt to the impacts of climate change in Zanzibar	DoE Zanzibar		2018-2020
DCFP	UK Aid	Climate Resilience for Cooperatives	ZACCA, Zanzibar		2016-2017
Simiyu Climate Resilience Project	GCF	To increase the climate resilience of rural and urban households, particularly small scale farmers and women living in the Simiyu Region and to improve policies and regulation for cross-sectoral action towards climate adaptation	Ministry of Water	Simiyu region covering Water, Agriculture and Health sectors	2019-2024

Mainstreaming Environment & Climate Change Adaptation in the Implementation of National Policies	UNDP and One UN Fund	Policy based project to ensure that environment and climate change are mainstreamed in the most economically important and vulnerable sectors of the economy in Tanzania leading to reduced poverty levels while maintaining environmental integrity	VPO	Tanzania Mainland & Zanzibar	2013-2017
Strengthening Climate Information and Early Warning Systems (SCIEWS)	GEF through UNDP	To strengthen the weather, climate and hydrological monitoring capabilities, early warning systems and available information for responding to extreme weather and planning adaptation to climate change in Tanzania.	PMO –Disaster Management Office	Lindi, and Arusha, Mbeya, Tanga, Kigoma, Songea, Njombe, and Iringa regions: Mafia and Zanzibar Airport	2013-2019
Strengthening Climate Change Governance in Zanzibar	UNDP and One Fund	To support the Zanzibar Vice presidents Office(ZVPO) in strengthening climate change governance for Zanzibar through capacity building and mainstreaming of adaptation actions in development plans		Zanzibar	

Supporting the implementation of integrated ecosystem management approach for landscape restoration and biodiversity conservation in Tanzania	GEF through United Nations Environment Programme	To review and harmonize policies and legal and institutional framework for sustainable landscape restoration initiatives	VPO/NEMC	Great Ruaha, Lake Rukwa and Malagarasi River basins	
Securing watershed services through sustainable land use management in the Ruvu and Zigi catchments (Eastern Arc Region)	GEF/UNDP	Build institutional capacity and strengthening coordination among water basin authorities and relevant stakeholders in implementing practical sustainable land use management	Ministry of Water and Irrigation	Eastern Arc Region (Pangani and Wami Ruvu Basin-Tanga and Morogoro)	2015-2020
Decentralised Climate Finance Project (DCFP)	IIED	Pilot climate financing in selected district of Manyara region	TAMISEMI	Longido Ngorongoro Monduli	2016-2020
Building Capacity for Resilient Food Security Project in Tanzania	UNEP	Support URT in strengthening knowledge and Systems to target resilient food security in line with existing government agriculture policies.		Morogoro (Movomero) Dodoma (Bahi) Tabora (Uyui) Iringa (Kilolo) Lindi (Ruangwa) Zanzibar (Unguja Kusini, Kaskazini B-Unguja, Chakechake and Wete)	2018-2023

ANNEX 5: INITIAL GENDER ASSESSMENT AND GENDER ACTION PLAN

Introduction

This Gender Assessment report has been prepared in accordance with the Adaptation Fund Gender Policy (GP) and its associated implementation guidelines. It ensures that the "Restoration of Lake Babati for Enhanced Climate Change Adaptation in Babati District" project fully integrates gender equality and women's empowerment across design, implementation, and monitoring & evaluation of the project. The project's overall goal is to restore the ecological integrity of Lake Babati and its catchment, an ecosystem that supports thousands of smallholder farmers, pastoralists, and fisherfolk in north-central Tanzania. For several decades, Lake Babati has been critical for domestic water, irrigation, livestock, and fisheries. Yet climate variability, particularly prolonged droughts, erratic rainfall, and other anthropogenic activities, has contributed much to severe sedimentation, declining water levels, declining fish stocks, and ecosystem degradation at large.

These biophysical stresses interact deeply with socio-economic and gender inequalities. Women and men depend on Lake Babati's resources in different ways. For example, women are primarily responsible for water collection, fish processing, home gardening, and small livestock, while their counterparts, men, tend to dominate fishing, commercial farming, and land decisions. Women's limited access to land, finance, and decision-making restricts their adaptive capacity, hence they are disproportionately affected during climate stressors or shocks.

The report is structured in a way that progressively builds understanding from context to action. It begins with an Introduction that outlines the project's objectives, its alignment with the Adaptation Fund Gender Policy, and the rationale for integrating gender considerations into climate adaptation planning. The Methodology section explains the approaches used to collect and analyse data combining desk reviews, stakeholder consultations, and sex-disaggregated analysis to ensure the findings reflect the realities of women and men in Babati District. The next section on Climate Change Context provides an overview of Tanzania's and Babati's specific climatic challenges, highlighting how these influence livelihoods, ecosystems, and vulnerability patterns. This is followed by an analysis of Gender Inequalities in Tanzania and Babati District, presenting the legal, policy, and socio-economic environment that shapes gender relations and access to resources. The report then examines the Differentiated Climate Change Impacts on women and men, demonstrating how climate risks, roles, and adaptive capacities vary across social groups. Finally, the Recommendations section translates these insights into concrete, actionable measures for ensuring that the project's design, implementation, and monitoring are gender-responsive and transformative.

Methodology

This preliminary gender assessment draws primarily on a comprehensive desk review of key government legislation, policy documents, and analytical reports produced by the United Nations (UN), non-governmental organizations (NGOs), and civil society organizations (CSOs) in the United Republic of Tanzania, East Africa Region, and Global at large. The information gathered from credible secondary sources were complemented by primary data which were collected in parallel with Vulnerability Assessment Study of Lake Babati by two gender experts in Nakwa, Riroda, Hoshan, Bonga Himiti, Managhat and Nangara Ziwani villages between 8th -12nd June 2021.

The gender assessment aims to capture the lived realities of both women and men by disaggregating data not only by sex (male/female) but also by age and other intersecting factors such as ethnic origin and socio-economic status. It further seeks to recognize the diversity of experiences, roles, needs, and capacities among women and men, rather than presenting them as homogenous groups. Where generalizations were made, they were necessary for analytical clarity. While the gender inequalities outlined in the subsequent sections often place women and girls at a disadvantage compared to their counterparts, men and boys, the assessment also identifies instances were men and boys face discrimination or vulnerability, such as those arising from poverty, dependency, or restrictive notions of masculinity. Generally, this assessment.

i) Describes the gender situation in Babati District and Tanzania at large

ii) Analyses how gender inequalities influence vulnerability and adaptation

iii) Identifies gender-differentiated climate-change impacts, and

iv) Provides concrete recommendations to ensure the project contributes to gender-responsive and transformative climate adaptation.

Key limitations of this assessment include the absence of prior comprehensive gender analyses and the scarcity of gender-disaggregated data within existing climate change assessments. In addition, the limited timeframe for conducting extensive primary data collection posed constraints. Despite these limitations, the assessment provides a baseline on gender and social dynamics at the outset of the project, which can serve as a foundation for tracking progress and measuring outcomes throughout implementation.

Climate Change Snapshot in the United Republic of Tanzania

As stated in the project full proposal, Tanzania is a Party to both the Kyoto Protocol and the Paris Agreement. The University of Notre Dame Global Adaptation Index (ND-GAIN) ranks Tanzania among countries with high vulnerability and medium-low readiness to address climate change. Tanzania ranks 147th out of 192 countries on the ND-GAIN Country Index, with an overall score of 38.4, reflecting high vulnerability (0.516) and low readiness (0.285) to climate change[7]. Tanzania's vulnerability to climate change stems from its geographic diversity, heavy reliance on rain-fed agriculture, dependence on natural resources, high poverty levels, and limited adaptive capacity. Agriculture employs around 65–70% of the population,[8] yet it remains largely dependent on seasonal rainfall, exposing rural communities to droughts, floods, and erratic weather. Weak infrastructure, limited access to technology, and low investment in climate-resilient sectors further exacerbate vulnerability.

The most climate hazards that the country experiences include: sea-level rise, temperature rise, rainfall variability, and extreme weather events such as floods, tropical cyclones, and droughts. Tanzania's economy, classified as a lower-middle-income country,[9] remains highly climate-sensitive, especially in the agriculture, infrastructure, water, and energy sectors. About 26.4% of Tanzanians live below the national poverty line,[10] limiting the population's resilience and ability to recover from climate shocks. Rural women, who form the backbone of smallholder agriculture, are particularly affected due to gender inequalities in land ownership, access to finance, and decision-making. Therefore, the proposed project purposively targets those most affected by climate change, poverty, and food insecurity, and those who rely on agricultural livelihoods impacted by climate change, especially women and indigenous populations. Therefore, the assessment provides data on gender inequalities at the national level and includes findings from desk reviews and consultations in the proposed project areas about the differentiated climate change impacts on men and women.

Gender in the United Republic of Tanzania.

Legal and Policy Environment

The Government of the United Republic of Tanzania recognizes that gender inequality constitutes a major impediment to the socio-economic transformation and political advancement of its people. Understanding that no society can achieve sustainable development while half of its population remains marginalized,

[7] ND-GAIN Index 2023. Available at: https://gain.nd.edu/our-work/country-index/rankings/

[8] Ministry of Finance and Planning. (2024). *Hali ya Uchumi wa Taifa kwa Mwaka 2024 – Toleo la Mwananchi*. Government of Tanzania. Retrieved from https://repository.mof.go.tz/items/6a8ce045-efcb-4c95-afe4-0543e5f3d9d4

[9] World Bank Group. Available at: https://www.worldbank.org/en/country/tanzania/overview

[10] Belghith, Nadia Belhaj Hassine; De Boisseson, Pierre Marie Antoine; Karamba, R. Wendy; Talbert, Elizabeth Ann. *Tanzania - Mainland Poverty Assessment 2019 (Vol. 1 of 2) : Part 1 : Path to Poverty Reduction and Pro-Poor Growth (English).* Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/254411585030305188

taking into consideration that over half (51.3%) of its population are women, as revealed by the sixth national housing and population census of 2022.[11] Tanzania has shown strong political will and commitment to advancing gender equality and equity. The nation views gender equality not only as a matter of social justice but also as a cornerstone of inclusive growth, democracy, and human rights. From the foundation of its governance framework, Tanzania's 1977 Constitution (as timely amended) enshrines the principle of equality between men and women, guaranteeing equal rights and opportunities for all citizens.[12]

In pursuit of this goal, the Tanzanian government has implemented deliberate affirmative action measures to enhance women's political representation. A significant milestone was reached in 1997, when a constitutional reform introduced a quota system that allocated 15 percent of special seats in Parliament and 25 percent of seats in local government councils exclusively for women[13]. This intervention sought to bridge the gender gap in governance and ensure that women's voices were more prominently represented in legislative and administrative arenas. Further progress was made in 2000, when another constitutional amendment increased these quotas to 20 percent in Parliament and 33.3 percent in local councils.13 These changes not only expanded women's formal participation but also symbolized the state's recognition of women as integral actors in policy formulation, community leadership, and governance. As a result, the number of women councilors and Members of Parliament has grown steadily, strengthening women's visibility and influence in public affairs. The success of Tanzania's gender equality initiatives reached a defining moment in March 2021, when Her Excellency, Dr. Samia Suluhu Hassan, became the first female President of the United Republic of Tanzania. Her ascension to the highest office in the land marked a historic breakthrough for women's political leadership in the country and across Africa. Additionally, in 2024, 37% of the seats in the parliament of the United Republic of Tanzania were female.[14]

Furthermore, Tanzania's commitment to gender equality extends beyond the political arena into its national development strategies and policy frameworks. Gender equity is a central pillar in the country's National Five-Year Development Plans (NFYDPs 2021/22 -2025/26), which emphasize inclusive economic growth, human capital development, and the empowerment of women and youth. Similarly, in other development frameworks such as the National Strategy for Growth and Reduction of Poverty (NSGRP), known locally as MKUKUTA, integrates gender perspectives into poverty reduction efforts, ensuring that women have equitable access to education, health, financial resources, and decision-making opportunities.

The newly launched Tanzania National Development Vision 2050 (TDV 2050) represents Tanzania's next long-term framework for achieving sustainable and inclusive development.[15] Building upon the achievements of Vision 2025, this strategic document envisions a prosperous, equitable, and gender-responsive society by mid-century. The Vision identifies gender equality as a fundamental enabler of social transformation, human capital development, and economic competitiveness. By explicitly recognizing women as key contributors to innovation, governance, and production, the NDV 2050 calls for equal access to opportunities, leadership, and resources. It emphasizes the dismantling of institutional barriers that perpetuate inequality and commits to deepening women's participation in science, technology, entrepreneurship, and political leadership. The inclusion of gender equality in NDV 2050 reflects Tanzania's understanding that a sustainable future depends on the empowerment of all citizens, especially women and girls, as full partners in national progress.

At the global level, Tanzania has demonstrated consistent dedication to upholding women's rights by ratifying key international and regional instruments. These include the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the Beijing Platform for Action, the Maputo

[11] https://sensa.nbs.go.tz/publication/report7.pdf
[12] The Constitution of the United Republic of Tanzania (1977).
[13] The National Guidelines for Mainstreaming Gender into Environment. Available at:
[14] Inter-parliamentary Union (IPU). Available at:
https://data.worldbank.org/indicator/SG.GEN.PARL.ZS?locations=TZ
[15] Tanzania Development Vision (DIRA 2050). Available at: https://www.planning.go.tz/uploads/documents/en-1752762713-THE%20TANZANIA%20DEVELOPMENT%20VISION%202050.pdf

Protocol on the Rights of Women in Africa, and the Southern African Development Community (SADC) Gender and Development Declaration. Each of these frameworks reinforces the national vision of gender parity and women's empowerment.

Gender Inequality.
According to the 2024 SDG Index, Tanzania achieved a score of 57.74, ranking 135th globally out of 167 countries.[16] While this demonstrates steady progress toward the 2030 Agenda, it underscores the need for accelerated action in key areas such as gender equality (SDG 5), quality education (SDG 4), and poverty reduction (SDG 1). The relatively high spillover score (95.49) reflects Tanzania's commitment to sustainable global practices, even as it continues to address internal development challenges.[17]

According to the 2023 UNDP Gender Development Index (GDI), Tanzania recorded a GDI value of 0.951,[18] reflecting a slight improvement from 2022 and indicating steady progress toward narrowing gender gaps in human development. This score means that women in Tanzania have achieved about 95% of the human development level of men, showing progress but also underscoring persistent inequalities. The female Human Development Index (HDI) value stands at 0.542,18 compared to 0.569 for males, revealing a modest gender gap of 0.028. Women in Tanzania have a higher life expectancy at birth (69.8 years) than men (64.2 years),18 living on average 5.6 years longer, which demonstrates advancements in healthcare, reduced maternal mortality, and improved access to reproductive services. According to the 2022 Tanzania Demographic and Health Survey 2022 (TDHS-MIS), the maternal mortality ratio (MMR) is 104 deaths per 100,000 live births for the 7 years before the survey.[19] Despite a significant reduction, the MMR is still high compared to the recommended SDG target of less than 70 deaths per 100,000 live births.[20]

However, disparities remain evident in education and income, two key determinants of gender equality. While girls today are expected to spend 8.7 years in school compared to 8.5 years for boys, the mean years of schooling remain lower for women (5.5 years) than for men (6.7 years),18 a gap reflecting historical inequalities in access to education, particularly in rural and low-income areas. The most significant disparity lies in economic participation, with women's Gross National Income (GNI) per capita at PPP $2,977, compared to PPP $4,062 for men, a difference of more than $1,000.18

This pattern of inequality shows that while Tanzanian women are living longer and gaining educational ground, they continue to face economic disadvantages that constrain their full empowerment. Nevertheless, the positive trajectory in GDI performance demonstrates the impact of sustained government commitment to gender equality through policies such as the Women and Gender Development Policy (2000, currently under review), gender-responsive national development plans, and constitutional guarantees of equality. Continued efforts to bridge gaps in education quality, labor-market participation, and income generation will be essential for Tanzania to achieve the aspirations of SDG 5 (Gender Equality) and the National Development Vision 2050, which envisions a society where both women and men contribute equally to and benefit equally from the country's social and economic transformation.

Findings from the Social Institutions and Gender Index (SIGI) for Tanzania (2023) highlight that gender-based discrimination remains deeply embedded in social institutions and cultural practices, particularly in the family sphere and civil liberties.[21] And the average score reported is 35.1 at the national level. The most acute inequalities are found in "Discrimination in the Family" and "Restricted Civil Liberties", where patriarchal norms dictate household decision-making, women's autonomy, and control over reproductive health. Within households, men dominate decision-making, as the report indicates 37% of Tanzanians

[16] Equality Measures 2030 (2024). Available at: https://equalmeasures2030.org/country-profiles/#sub-saharan-africa
[17] Sustainable Development Report. Available at: https://dashboards.sdgindex.org/rankings/spillovers/
[18] Tanzania Gender Development Index. Available at: https://hdr.undp.org/gender-development-index#/indicies/GDI
[19]Tanzania Demographic Health Survey 2022. Available at: https://www.nbs.go.tz/statistics/topic/health-statistics
[20] https://www.who.int/data/gho/data/themes/topics/sdg-target-3-1-maternal-mortality
[21] SIGI Country Report for Tanzania. Retrieved from: https://www.nbs.go.tz/uploads/statistics/documents/en-1705486733-2021_SIGI_Country_Report_for_Tanzania.pdf

identify the male head as the sole decision maker for household spending, and 74% believe men should have the final word in major family decisions.21 Women continue to shoulder a disproportionate share of unpaid care work, spending over three times more time than men on domestic chores, while 60% of the population considers these tasks exclusively women's responsibilities. The practice of bride price, reported in 90% of marriages, reinforces women's subordinate status 75% of Tanzanians agree that paying bride price grants a man ownership of his wife, perpetuating gender hierarchies and limiting women's voice and agency.21

These discriminatory norms are closely linked to women restricted physical and reproductive autonomy and high levels of gender-based violence (GBV). Almost half of Tanzanian women (48%) have experienced intimate partner violence (IPV) in their lifetime, with 23% reporting violence in the past year (2021), and half of the population still justifies wife-beating under certain conditions.21 Women's control over their fertility also remains limited: 38% of women not intending to conceive are not using contraception, while 32% of Tanzanians disagree that women should have the right to decide whether to use contraceptives.21 Tanzania's total fertility rate remains high at 4.8 births per woman,[22] reflecting persistent unmet needs for family planning, particularly among rural and low-income women.

Access to land, agriculture, food security, and nutrition.

In Tanzania, access to land remains a critical gender issue despite the existence of progressive legal frameworks. Land is often considered the most important asset in rural areas because it underpins agricultural production.[23] The Land Act and Village Land Act both recognize women's rights to own, use, and inherit land.[24] However, in practice, customary laws continue to dominate land allocation and inheritance, particularly in rural areas. These customs often exclude women, especially daughters and widows, from inheriting clan land, as they are expected to gain access through their husbands.23 This creates a gap between statutory law and social practice. According to UN Women (2023), only about 9% of women in Tanzania own land individually.[25]

Agriculture is the backbone of Tanzania's economy, employing approximately 70% of the population, and women constitute the majority of the agricultural labour force.25 However, gender inequalities persist in access to productive assets, credit, and agricultural inputs. Women farmers often manage smaller, less fertile plots and are concentrated in lower-value crops, while men dominate in cash crop production and decision-making. These disparities reduce agricultural productivity and household resilience to shocks. Moreover, because most of Tanzania's farming is rain-fed, erratic rainfall and prolonged dry spells exacerbated by climate change pose serious threats to crop yields and food availability.[26] Climate variability in Tanzania has increased the vulnerability of smallholder farmers, especially women, who have fewer resources to cope with these challenges. Limited access to irrigation, poor soil quality, and post-harvest losses due to inadequate storage facilities further undermine productivity and income security.

Food insecurity remains widespread in Tanzania. The World Food Programme (WFP) reports that nearly 59% of Tanzanian households cannot afford a nutritious diet, and food insecurity is more pronounced in rural areas than in urban ones[27]. Women-headed households are particularly at risk, as gender inequality reduces women's access to financial and food resources. Studies show that female-headed households tend to have

[22] Tanzania Gender Assessment 2022. Available at:
[23] https://doi.org/10.1016/j.worlddev.2022.105811
[24] Village Land Act, 1999, Cap 114
[25] 2023 Country Gender Profile for Tanzania Mainland (UN Women)
[26] The impact of climate variability and extremes on agriculture and food security - An analysis of the evidence and case studies. Available at: https://doi.org/10.4060/cb2415en
[27] https://www.wfp.org/countries/tanzania

more limited dietary diversity and less secure food access. The 2018 Tanzania National Nutrition Survey found that 31.8% of children under five are stunted,[28] reflecting chronic malnutrition. Among women of reproductive age, anaemia affected nearly 28.8%,[29] and only one in four women had an adequately diverse diet. This highlights the interconnection between gender inequality, food insecurity, and nutrition outcomes.

The situation is compounded by climate change and environmental degradation. Unpredictable rainfall, droughts, and flooding events threaten not only crop yields but also soil fertility through erosion and nutrient leaching. Women farmers, who often lack access to climate-resilient technologies or crop insurance, face increased vulnerability. Post-harvest losses are another significant challenge due to poor storage infrastructure and a lack of preservation technologies, leading to wastage and reduced marketable produce. This situation exacerbates food insecurity and weakens household resilience, particularly for rural women farmers who rely heavily on small-scale crop production for food and income.

Differentiated Impacts of Climate Change in Project Areas in Babati District Council, Manyara

Natural resource degradation, invasive aquatic weeds, and unsustainable land use practices around Lake Babati have wide-ranging socio-economic and environmental consequences. While these impacts affect the community as a whole, their effects are not uniform, since men, women, boys, and girls experience the pressures differently due to existing social roles, responsibilities, and access to resources. In rural Tanzanian settings, gendered divisions of labor and responsibilities mean that women and girls often bear the brunt of domestic water collection, household management, such as food preparation, and subsistence agriculture, while men and boys dominate fishing, livestock management, and other income-generating activities. Understanding these gendered differences is essential for designing interventions that are equitable, sustainable, and effective.

The paragraph below draws on the activities, environmental pressures, and socio-economic context described in the Lake Babati Vulnerability Assessment Study to highlight how men and women are differently affected. These inferred gender-differentiated impacts of climate change provide a lens for ensuring that the proposed interventions in Lake Babati Catchment address the needs of all segments of the population, with high priority to women, girls, and youth. The degradation of Lake Babati, driven by siltation, uncontrolled grazing, brick making, unsustainable cultivation, and illegal fishing, and the rapid spread of aquatic weeds, has distinct gendered impacts, which are discussed in detail as follows:

a) *Water access and quality*
Aquatic weeds and sedimentation reduce the lake's effective storage and degrade water quality. Women and girls, who are responsible for water collection for domestic use, washing, and homestead irrigation, face increased time burdens and travel distances in searching for other water sources. This contributes to time poverty, limiting opportunities for education, rest, and income-generating activities. Additionally, poor water quality increases their exposure to water-borne diseases. Long-time searching and fetching water can also fuel or exacerbate GBV at household level.

b) *Fisheries and aquatic livelihoods*
Men, who dominate boat-based fishing, are directly affected by reduced fish stocks and navigation constraints caused by dense submerged weeds. Women involved in fish processing and petty trade are indirectly affected through lower volumes of fish for marketing, undermining fragile household incomes.

[28] Tanzania National Food Survey, 2018.

The expansion of aquatic weeds can also facilitate illegal fishing, often benefiting better-connected actors (usually men), while small-scale fishers and processors, including women, lose out.

c) Agriculture and grazing

Sedimentation, land degradation, and erratic rainfall push farmers toward marginal areas closer to the lake. While men generally control land clearing and livestock grazing decisions, women bear the primary burden when soil erosion and declining fertility reduce crop yields. Overgrazing and aquatic weed proliferation limit pastures and water points, increasing competition and potential conflicts between farmers and livestock keepers. Women are frequently excluded from formal conflict-resolution processes but absorb much of the social and care burden arising from such tensions when they arise.

d) Health and safety risks

Dense aquatic weeds create breeding grounds for disease vectors such as mosquitoes, increasing the risk of malaria and other vector-borne illnesses, which disproportionately heighten women's care responsibilities as their primary caregivers at the household level. Water and food scarcity linked to lake degradation and climate variability have also been associated with heightened intra-household tensions and gender-based violence (GBV), making environmental degradation both an ecological and a protection risk for women and girls.

e) Participation and decision-making

Despite their central role in managing water, agriculture, and household welfare, women remain under-represented in local natural resource governance structures, such as environmental committees, water user associations. Without targeted inclusion, lake restoration, fisheries regulation, land use planning, and aquatic weed management risk being gender-blind, overlooking women's perspectives, priorities, and the specific vulnerabilities they face.

In summary, the environmental degradation of Lake Babati and the proliferation of aquatic weeds affect men and women differently: men face direct economic losses from fishing and livestock impacts, while women bear the brunt of increased domestic labor, health risks, reduced income from secondary livelihoods, and social burdens. Recognizing these gender-differentiated impacts is essential for ensuring that lake restoration and conservation initiatives are equitable, effective, and responsive to the needs of all community members.

Recommendations on Addressing Gender-Differentiated Impacts in Lake Babati Restoration

1. Conduct ongoing gender analysis during project implementation, monitoring, and evaluation

The impacts of Lake Babati degradation and aquatic weeds on men and women are not fully documented. This initial gender assessment should serve as a working document, regularly updated with new findings, observations, and lessons learned throughout the project. The results of this ongoing gender analysis should inform and adapt interventions, including water management, fisheries regulation, sustainable agriculture, and weed control techniques, to ensure they effectively address the specific needs and vulnerabilities of both women and men.

2. Ensure gender balance among project staff and provide relevant training

Women are under-represented in decision-making and natural resource management structures around Lake Babati Catchment. To address this, the project should encourage recruitment of female field monitors and technical staff, especially those with knowledge in agroecology, fisheries, and environmental management. Both male and female staff should receive targeted training on gender, climate change, and ecosystem

restoration to strengthen their capacity to recognize and address gender-specific vulnerabilities in project activities.

3. ***Recognize and strengthen women's central role in livelihoods and household wellbeing***

   Women's contributions to crop production, homestead gardening, small livestock management, and fish processing are critical to household food security and income. The project should actively promote women's meaningful participation in committees and decision-making bodies related to lake management, fisheries, and watershed conservation. A minimum of 30% female representation should be ensured, with efforts toward parity where possible. Documenting women's contributions will help support policy and legal frameworks that empower women and reduce gender disparities in access to resources and decision-making.

4. ***Target climate-sensitive livelihoods with gender-responsive interventions***

   Women's livelihoods are heavily concentrated in sectors vulnerable to climate and environmental shocks, including small-scale agriculture, livestock, and fish processing. Project activities should provide women with tailored support, such as access to inputs, credit, climate information services, training on sustainable practices, and alternative income-generating opportunities to enhance resilience to lake degradation and climate variability. They should also be capacitated on Climate-Smart Agriculture (CSA).

5. ***Integrate protection considerations into lake restoration activities***

   Recognizing that water scarcity, declining fish stocks, and degraded lake conditions can exacerbate intra-household tensions and gender-based violence, project design should include measures to mitigate protection risks. This could involve community awareness campaigns, support for women's groups, and collaboration with local authorities to prevent and respond to GBV linked to environmental stressors.

Table 23: Gender Action Plan Budget

	Gender-related Activity	Indicators	Responsible	Timeline	Budget (USD)
Component 1: Rehabilitate and conserve degraded catchment areas through reforestation, soil and water conservation, and sustainable land management practices within the Lake Babati watershed					
Outcome 1: Improved management and ecological restoration of Lake Babati catchment					
Output 1.1: Area of degraded land restored or rehabilitated	Activity 1.1.1: Conduct participatory mapping/baseline and assessment of degraded areas within the Lake Babati catchment	- Number of women and youth engaged in baseline mapping - % of participants (disaggregated by gender) reporting active and meaningful engagement during baseline assessment of the project	Social Development Officers/Gender Officer	Year 1	Included in activity costs Total activity cost 406,996
Output 1.2: Increase in vegetative cover in targeted catchment areas	Activity 1.2.2 Implement large-scale tree planting and reforestation campaigns along riverbanks, hillslopes, and buffer zones.	- Number of women/youths participating in tree-planting campaigns	Social Development Officers/Gender Officer	Years 1–2	Included in activity costs Total activity cost 137,300
Output 1.3 Enhanced soil and water conservation in critical catchment areas.	Activity 1.3.2 Promote agroforestry and sustainable land management practices among farmers.	- Number/ % of women and youth trained on agroforestry and sustainable land management practices among farmers	Social Development Officers/Gender Officer	Year 3	Included in activity costs Total activity cost 52,959
Output 1.4 Reduction in sediment load and soil erosion rates in tributaries feeding Lake Babati.	Activity 1.4.4 Establishment of Water Users Association (WUA) for Lake Babati	- Number/% of women who are active members of WUA in project areas	Social Development Officers/Gender Officer	Year 4	Included in activity costs

					Total activity cost 19,615
Component 2: Promote sustainable livelihood options (such as climate-smart agriculture, aquaculture, and eco-tourism) that reduce pressure on natural resources and enhance community resilience to climate change.					
Outcome 2: Enhanced climate resilience amongst communities and systems					
Output 2.1: Number of Households Adopting Climate-Smart Agricultural and Livelihood Practices	Activity 2.1.1: Train farmers and fishers in climate-smart agricultural techniques and sustainable aquaculture practices.	- Number of female beneficiaries trained - % of trained women/youth adopting CSA	Social Development Officers/Gender Officer	Years 1–3	Included in activity costs Total activity cost 44,132
	Activity 2.1.3 Provision of start-up capital to five farmers' groups and support extension services.	- % of women and youth among beneficiaries of start-up capital grants. - Number of women and youth in leadership or management positions within the 5 farmer groups.	Social Development Officers/Gender Officer	Year 1	Included in activity costs Total activity cost 14,712
Output 2.2: Percentage Increase in Household Income from Sustainable Livelihoods	Activity 2.2.1 Support the development of small-scale aquaculture ponds and fish cages using sustainable feed and management practices.	- % of women and youth among participants in aquaculture training and enterprise formation. - Number of women and youth involved in fishpond or cage management committees. - Number of women-led or youth-led aquaculture enterprises established through project support.	Social Development Officers/Gender Officer	Years 1–2	Included in activity costs Total activity cost 333,445

Output 2.3: Functional Climate-Resilient Enterprises Established and Operational	Activity 2.3.1 Promote alternative income-generating activities such as beekeeping, handicrafts, and ecotourism services.	- % or number of women and youth among beneficiaries of the new enterprises. - Number of women and youth in leadership or management roles within the new beekeeping, handicraft, or tourism groups.	Social Development Officers/Gender Officer	Year 3	Included in activity costs Total activity cost 83,361
Component 3: To strengthen the capacity of local communities, institutions, and local government authorities in ecosystem-based adaptation, watershed management, and climate-resilient planning.					
Outcome 3: Local authorities and institutions demonstrate enhanced capacity for climate-resilient planning and watershed management.					
Output 3.1: Community Members and Institutional Staff Trained in Ecosystem-Based Adaptation and Watershed Management	Activity 3.1.1: Develop gender-responsive training programs to ensure inclusive participation in ecosystem management	- % of training participants who are women, youth, and persons with disabilities. - Number of gender-responsive training modules developed and implemented. - % of women participants reporting increased confidence in decision-making or leadership roles. - Number of female extension officers and facilitators engaged in training delivery.	Social Development Officers/Gender Officer	Years 1–2	Included in activity costs Total activity cost 11,769
	Activity 3.1.2: Conduct capacity-building workshops and training sessions for local authorities, community leaders, and extension officers	- -% of women and youth among trained officials and community leaders. - Number of workshops incorporating gender	Social Development Officers/Gender Officer	Year 1	Included in activity costs Total activity cost 29,422

		equality and social inclusion modules. - % of women and youth participants demonstrating improved technical skills in post-training evaluations.			
	Activity 3.2.2: Provide technical support and mentorship to institutions for effective policy enforcement and coordination	- Number of mentorship sessions provided to women and youth officers. - % of women/youth participants reporting improved capacity in policy enforcement.	Social Development Officers/Gender Officer	Years 1–2	Included in activity costs Total activity cost 19,615
Output 3.3: Functional Coordination and Governance Structures Established for Lake and Watershed Management	Activity 3.3.1: Provision of equipment to support patrols to combat illegal fishing in Lake Babati	- % of patrol team members who are women and youth. - # of women participating in monitoring or reporting illegal activities	Social Development Officers/Gender Officer		Included in activity costs Total activity cost 19,615
Output 3.4: Institutional Integration of Climate Adaptation Measures into District and Village Development Plans	Activity 3.4.1: Support and facilitate the integration of climate adaptation strategies into district and village development plans	- Number of district and village plans integrating gender and social inclusion actions. - % of planning meetings attended by women, youth, and marginalized groups. - Number of women and youth contributing to local adaptation priorities. - Number of plans with budget allocations for gender-	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 102,977

		responsive adaptation measures.			
Output 3.5: Increased Knowledge and Skills on Climate Adaptation Among Trained Stakeholders	Activity 3.5.1: Conduct periodic knowledge assessments, refresher training, and learning workshops for stakeholders	- -% of women and youth participants in refresher and learning workshops. - % of women and youth showing at least 70% improvement in post-training assessments. - Number of female and youth participants sharing lessons as peer trainers.	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 205,590
	Activity 3.5.2: Facilitate learning exchanges and study tours with other successful watershed restoration initiatives	- Number or % of exchange/study tour participants who are women and youth. - Number of inclusive case studies produced highlighting women/youth leadership in ecosystem restoration and climate adaptation.	Social Development Officers/Gender Officer	Year 2, Year 4	Included in activity costs Total activity cost 132,397
Component 4: Establishing a Community-Based Monitoring and Early Warning System for Sustainable Lake Management, Water Quality Protection, and Climate Risk Reduction					
Outcome 4: A functional community-based monitoring and early warning system enables a timely response to environmental and climate risks for sustainable lake management.					
Output 4.1: Functional community-based monitoring and early warning system (CBMEWS) established and operational	Activity 4.1.1: Design and implement a participatory environmental monitoring framework for Lake Babati	- % of trained community monitors who are women and youth. - Number of women and youth participating in monitoring and data reporting.	Social Development Officers/Gender Officer	Years 1–3	Included in activity costs Total activity cost 49,036

		- of monitoring indicators that reflect gender-differentiated impacts. - % of women reporting improved access to early warning information.			
Output 4.2: Number of Community Members Trained in Data Collection, Monitoring, and Reporting	Activity 4.2.1: Develop a digital and manual dashboard for early warning dissemination (SMS alerts, radio, community boards)	- % of early warning messages tailored for accessibility to women and youth. - % or number of households (by sex of head) receiving and understanding early warning messages	Social Development Officers/Gender Officer	Year 3	Included in activity costs Total activity cost 44,133
Output 4.2: Number of Community Members Trained in Data Collection, Monitoring, and Reporting	Activity 4.2.2: Develop a local climate and water-quality early-warning communication protocol	- Number of women participating in developing communication protocols. - % of trained women demonstrating awareness of response roles.	Social Development Officers/Gender Officer	Years 1–2	Included in activity costs Total activity cost 34,322
Output 4.4: Timeliness and Effectiveness of Local Responses to Early Warning Alerts	Activity 4.4.1: Train community volunteers and local institutions in data collection, interpretation, and response planning	- % of trainees who are women, youth, or people with disabilities. - Number ofcommunity climate response plans developed with gender considerations. - Number of women and youth in community emergency teams. - % of households led by women responding	Social Development Officers/Gender Officer	Year 2, Year 3	Included in activity costs Total activity cost 132,397

		effectively to early warning alerts.			
Component 5: Raising Awareness and Fostering Community Participation in the Restoration and Protection of Lake Babati's Ecosystem through Education, Advocacy, and Stakeholder Dialogue Platforms					
Outcome: Increased community awareness and engagement in Lake Babati restoration activities					
Output 5.1: Awareness Campaigns, Community Dialogues, and School Programs on Lake Babati ecosystem restoration Conducted	Activity 5.1.1: Conduct public awareness campaigns	- % of campaign participants who are women and youth - Number of awareness sessions, including gender equality and GBV prevention messages. - Number of women and youth serving as local champions.	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 20,595
Output 5.1: Awareness Campaigns, Community Dialogues, and School Programs on Lake Babati ecosystem restoration Conducted	Activity 5.1.2: Develop and distribute communication materials (brochures, posters, radio programs, documentaries)	- Number of communication materials featuring women and youth in positive environmental roles. - Number of media content produced addressing gender equality and inclusion in conservation.	Social Development Officers/Gender Officer	Years 1–2	Included in activity costs Total activity cost 23,537
Output 5.1: Awareness Campaigns, Community Dialogues, and School Programs on Lake Babati ecosystem restoration Conducted	Activity 5.1.3: Organize school-based environmental education clubs and competitions	- % of participating students who are girls and boys (gender parity index). - Number of schools with active, gender-balanced environmental clubs. - Number of girls serving as club leaders or competition winners.	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 19,614

		- Number of teachers trained in gender-responsive environmental education.			
Output 5.2: Percentage of Community Members with Increased Knowledge of Lake Ecosystem Conservation and Climate Adaptation	Activity 5.2.1: Facilitate community dialogues, stakeholder forums, and policy roundtables on lake management	- % of women and youth attending dialogues and policy forums. - Number of women and youth serving as panelists or facilitators in policy roundtables. - Number of forums including gender equality in discussion agendas. - % of community members (disaggregated) demonstrating improved knowledge.	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 49,036
Output 5.2: Percentage of Community Members with Increased Knowledge of Lake Ecosystem Conservation and Climate Adaptation	Activity 5.2.2: Engage local media in continuous coverage and storytelling on restoration progress and best practices	- Number of media features highlighting women/youth leadership in restoration. - Number of journalists trained in gender-sensitive environmental reporting.	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 27,461
Output 5.3: Community-Based Organizations or Groups Participating are active in Restoration Activities	Activity 5.3.1: Support the establishment and strengthening of community-based organizations for lake conservation	- -% of CBOs with gender-balanced leadership (≥40% women, ≥30% youth). - Number of women/youth members in newly established or strengthened CBOs.	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 98,073

Output 5.4: Number of Stakeholder Coordination and Dialogue Platforms Established and Operational	Activity 5.4.1: Celebrate annual environmental events (World Environment Day, Lake Babati Day, etc.) to mobilize participation	- Number of women and youth participating in annual environmental events. - Number of women/youth speakers or award recipients recognized for conservation efforts	Social Development Officers/Gender Officer	Year 1-4	Included in activity costs Total activity cost 117,676