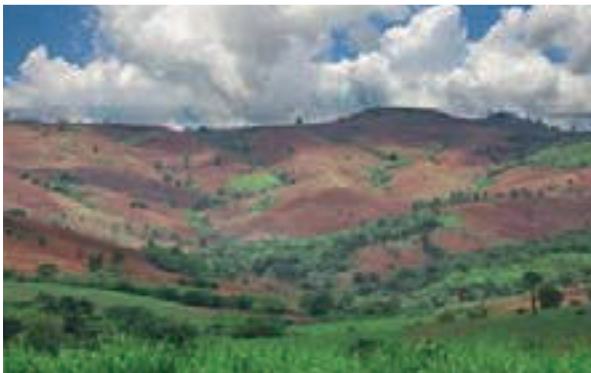




UNITED REPUBLIC OF TANZANIA  
MINISTRY OF NATURAL RESOURCES AND TOURISM

# NATIONAL FOREST LANDSCAPE RESTORATION STRATEGY

2023 - 2033





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***National Forest Landscape Restoration Strategy (2023 – 2033)***

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## PREFACE

In 2018, the United Republic of Tanzania (URT) pledged to restore 5.2 million hectares of degraded and deforested land. This pledge was part of the African Forest Landscape Restoration Initiative (AFR100) to restore 100 million hectares of degraded and deforested land in Africa under the Bonn Challenge, which is a global effort to restore 350 million hectares globally by 2030.

Our restoration commitment was a follow-up to the African Union (AU) Heads of States Summit held in October 2015 that endorsed AFR100 as an Africa-led initiative. The development of the National Forest Landscape Restoration (FLR) Strategy is therefore part of our effort to fulfill the country's commitment.

The National FLR strategy has come as a much-needed enabling mechanism to redress our deforestation and degradation rates. The strategy will leverage implementation to our existing plans for both Tanzania mainland and Zanzibar. This strategy will support implementation of our national neutrality targets under the United Nations Convention to Combat Desertification (UNCCD), Nationally Determined Contribution (NDC), the Paris Climate Agreement, National Forest Strategies and programmes, the National Environmental Master Plan for Strategic Interventions (2022–2032) and national sectoral plans (water, agriculture, and fisheries) among others.

It is my hope that this strategy will forge partnerships - and rally the support from various stakeholders. I am therefore requesting the government agencies, local governments, development partners, private sector and non-state actors to work together to ensure effectiveness of this FLR strategy. As a ministry, we will ensure that we maintain the political momentum through stakeholder engagement, communication and offer support in order to realize our national landscape restoration commitment.



**Dr. Hassan Abbasi Said**  
Permanent Secretary,  
Ministry of Natural Resources and Tourism

## ACKNOWLEDGEMENT

The development of this National Forest Landscape Restoration Strategy was a collective effort from government, development partners, and private sector and non-state actors through a series of consultative meetings. It is not possible to mention all stakeholders here but I would like to recognize inputs and leadership of various government ministries and local governments, the Civil Society Organizations (CSOs) working on FLR, the international NGOs working in Tanzania, and development partners. I would also like to extend my sincere gratitude to the International Union for Conservation of Nature (IUCN), Mpingo Conservation and Development Initiative (MCDI) and World-Wide Fund for Nature (WWF) for their technical and financial support throughout the process.

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Special gratitude goes to the Tanzania Forestry Research Institute (TAFORI) and the National Carbon Monitoring Centre (NCMC) for their technical input, dedication, and continued support throughout the process.

Lastly, I wish to acknowledge the important support received from the Director of the Division of Environment at the Vice President's Office during the development of this Strategy.



**Deuseddit K. Bwoyo**  
Director,  
Forestry and Beekeeping Division

## ABBREVIATIONS AND ACRONYMS

AfDB	- African Development Bank
AFR100	- African Forest Landscape Restoration Initiative
ASDP II	- Agriculture Sector and Development Programme
ALP	- Agriculture and Livestock Policy
ANR	- Assisted Natural Regeneration
ASDS	- Agricultural Sector Development Strategy
AU	- African Union
BMU	- Beach Management Unit
CA	- Conservation Agriculture
CBA	- Cost Benefit Analysis
CBD	- Convention on Biological Diversity
CBFM	- Community Based Forest Management
CBOs	- Community Based Organizations
CCRO	- Certificate of Customary Right of Occupancy
CER	- Carbon Emissions Reduction Trade
CITES	- Convention on International Trade in Endangered Species of Fauna and Flora
COSTECH	- Tanzania Commission for Science and Technology
CSA	- Climate-smart agriculture
CSOs	- Civil Society Organizations
DoE	- Division of Environment
EMA	- Environmental Management Act
ENR	- Environment and Natural Resources
EEZ	- Exclusive Economic Zone
FIs	- Financial Institutions
FLR	- Forest Landscape Restoration
FREL	- Forest Reference Emission Level
FVPO	- First Vice President's Office
GDP	- Gross Domestic Product
GEF	- Global Environmental Facilities
GHGs	- Greenhouse Gases
GST	- Geological Survey of Tanzania
HADO	- Hifadhi Ardhi Dodoma
HASHI	- Hifadhi Ardhi Shinyanga
HIMA	- Hifadhi Mazingira
IRA	- Institute of Resource Assessment

IES	- Incentive for Ecosystem Services
IUCN	- International Union for Conservation of Nature
IWRMD	- Integrated Water Resources Management and Development
LAMP	- Land Management Programme
LDN	- Land Degradation Neutrality
LGAs	- Local Government Authorities
LPG	- Liquefied Petroleum Gas
MAB	- Man and Biosphere Reserves
m.a.s.l.	- meters above sea level
MCA	- Multi-Criteria Analysis
MCDI	- Mpingo Conservation & Development Initiative
MDAs	- Ministries, Departments and Agencies
MLF	- Ministry of Livestock and Fisheries
MLHHS	- Ministry of Lands, Housing and Human Settlements Development
MNRT	- Ministry of Natural Resources and Tourism
MoA	- Ministry of Agriculture
MoFP	- Ministry of Finance and Planning
MoHCDGEC	- Ministry of Health, Community Development, Gender, Elderly and Children
MoWI	- Ministry of Water and Irrigation
NAFORMA	- National Forest Resources Monitoring and Assessment
NARCO	- National Ranching Company Limited
NAWAPO	- National Water Policy
NBS	- National Bureau of Statistics
NBSAP	- National Biodiversity Strategy and Action Plan
NCCS	- National Climate Change Response Strategy
NCMC	- National Carbon Monitoring Center
NEAC	- National Environmental Advisory Committee
NEMC	- National Environment Management Council
NEP	- National Environmental Policy
NEPAD	- New Partnership for Africa's Development
NGOs	- Non-government Organizations
NLUPC	- National Land Use Planning Commission
NSGRP	- National Strategy for Growth and Reduction of Poverty

PES	- Payment for Ecosystem Services
PFM	- Participatory Forest Management
PO-RALG	- President's Office-Regional Administration and Local Government
PPP	- Public Private Partnerships
ROAM	- Restoration Opportunity Assessment Methodology
SADC	- Southern African Development Community
SAS	- Silvopastoral and Aquaculture Systems
SDGs -	Sustainable Development Goals
SECAP	- Soil Erosion Control and Agroforestry Programme
SIDO	- Small Industries Development Organization
SUA	- Sokoine University of Agriculture
SUALDWC	- Strategy for Urgent Actions on Land Degradation and Water Catchments
SFM	- Sustainable Forest Management
TFCG	- Tanzania Forest Conservation Group
TAFORI	- Tanzania Forestry Research Institute
TARI	- Tanzania Agricultural Research Institute
TFS	- Tanzania Forest Services Agency
TMA	- Tanzania Meteorological Authority
UNCCD	- United Nations Convention on Combat Desertification
UNCED	- United Nations Conference on Environment and Development
UNDP	- United Nations Development Programme
UNEP	- United Nations Environment Programme
UNESCO	- United Nations Educational Scientific and Cultural Organization
UNFCCC	- United Nations Framework Convention on Climate Change
UNFF	- United Nations on Forum Forest
URT	- United Republic of Tanzania
VETA	- Vocational Education and Training Authority
VNRC	- Village Natural Resource Committee
VPO	- Vice President's Office
WRI	- World Resource Institute
WCS	- Wildlife Conservation Society
WWF	- World Wide Fund for Nature

- WWF - World Wide Fund for Nature
- ZACCA - Zanzibar Climate Change Alliance
- ZEMA - Zanzibar Environmental Management Authority

## KEY DEFINITIONS

**Biodiversity:** Variability among living organisms and the ecological complexes or which they are part, this includes diversity within species, between species and or ecosystem.

**Deforestation:** Refers to the loss or destruction of naturally occurring forests, primarily due to human activities such as logging, cutting trees for fuel, slash-and-burn agriculture, clearing land for livestock grazing, mining operations, oil extraction, dam building, and urban sprawl or other types of development and population expansion. It is the permanent destruction of forests in order to make the land available for other use.

**Forest degradation:** Means the destruction or reduction in quality of specific aspects of forests and degradation can result in a decrease in tree cover, changes in their structure or a reduction in the number of species.

**Forest landscape:** Is an unbroken extension of natural ecosystem within areas of current forest extent, without signs of significant human activity, and having an area of at least 500 km<sup>2</sup> (50,000ha).

**Forest restoration:** Is “to re-establish” the presumed structure, productivity and species diversity of the forest originally present at a site. It is an intentional activity that initiates, assists or accelerates the recovery of an ecosystem with respect to the presumed historical composition, structure, function, productivity and species diversity of an ecosystem present at a site. Historic conditions are therefore the ideal starting point for restoration design.

**Land degradation:** Refers to reduction or loss of the biological or economic productivity and complexity of land, reducing carbon storage in soil and vegetation, driving the loss of biodiversity and accelerating climate change.

**Restoration:** Efforts to re-establish the biodiversity, ecosystem functioning and ecosystem services in a degraded area to the state that existed before degradation.

**Strategy:** A plan of action designed to achieve a long-term or overall aim.

## EXECUTIVE SUMMARY

Approximately 14% of Tanzania's land notably miombo woodlands and semi-arid areas is severely degraded, with impacts on livelihood and environment varying across agro-ecological zones. In efforts to resolve land degradation challenges in Africa, Tanzania aligns with the African Union's AFR100 initiative, part of the global Bonn Challenge, which targets restoring 100 million hectares of degraded African land by 2030. As a member state, Tanzania pledged in 2018 to restore 5.2 million hectares (Mainland and Zanzibar) through collaboration with the multi-stakeholders, including sectoral ministries, local governments, private entities, NGOs, CBOs, and communities. The implementation of this strategy serves as an important tool to connect all the stakeholders and provide direction of restoration efforts to achieve the National commitment. Additionally, this strategy supports global commitments, including Sustainable Development Goals (SDGs), and conventions on biodiversity, desertification, and climate.

The FLR Strategy adopts a holistic approach to reverse land degradation, emphasizing resilient landscapes and socioeconomic benefits such as job creation, income growth, biodiversity conservation, and climate mitigation and adaptation. It targets seven National Development Goals: a) Increase climate resilience, b) Improve food security, c) Increase energy resources, d) Improve water quality and supply, e) Conserve and restore biodiversity, f) Ensure gender equity and equality, and g) Alleviate poverty. Successful FLR integrates several guiding principles, including: a) Focus on landscapes, b) Restore ecological functionality, c) Allow for multiple benefits, d) Recognize that a suite of interventions is possible, e) Involve stakeholders, f) Tailor to local conditions, g) Manage adaptively, and h) Avoid conversion of natural ecosystems.

The focus of strategy is to develop forest landscape restoration enterprise opportunities that build and support rural economies, production, and markets and satisfy the aspirations of landscape restoration and sustainable development. Diversified restoration interventions, placed into this landscape context, unite the inter-sectoral nature of restoration and expand the potential for social trust and economic investment in restoration. As a strategy for restoration, the spatial locations of different restoration activities complement each other such that practitioners prioritize diversity in approaches to restoration.

Through diversified FLR interventions and the locations of thematic priorities for restoration activities can be optimized in areas where their benefits will address the drivers of degradation and the social and economic benefits expected in the following priorities: a) Ecosystem Services, b) Forests, c) Biomass energy, d) Wildlife, e) Agriculture, f) Land and Water, and g) Livestock & Fisheries.

Ministries and local authorities are tasked with mainstreaming FLR targets into sectoral policies, while decentralized governance ensures context-specific solutions. Financing, estimated at 6,692,000 TZS (USD 2,390) per hectare requires mobilizing of additional resources from the public and private sector and development partners. Central and local government, through their sector budgets and plans, shall allocate substantial human, physical and financial resources within available means for the implementation of this strategy.

Monitoring and Evaluation (M&E) framework, coordinated by the Ministry of Natural Resources and Tourism, tracks ecological, economic, and social progress through biannual evaluations. Mid-term reviews enable adaptive adjustments, while a final assessment after the 10-year period measures outcomes against targets. The FLR Strategy underscores Tanzania's commitment to transforming degraded landscapes into productive systems, leveraging cross-sectoral synergies to address root causes of degradation while unlocking green economic opportunities. Through this integrated approach, the nation seeks to secure a sustainable future, aligning ecological health with national development aspirations and global environmental stewardship.

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# CHAPTER ONE

## INTRODUCTION

### 1.0 Background

The United Republic of Tanzania (URT) is experiencing extensive land degradation in all agro-ecological zones leading to reduced ability of the land to render sufficient ecosystem goods and services. However, the magnitude, extent and negative impact on people's livelihood and environment vary widely across the agro-ecological zones. According to the ROAM report 14% of Tanzania is highly degraded particularly in miombo woodlands and semi-arid areas. Besides impacts of land degradation on food security, it also contributes to pollution and siltation of water bodies, damage of transport infrastructure, loss of biodiversity, poverty and land use conflicts such as farmers and pastoralists in various parts of the country arising from declined soil productivity.

Efforts to curb land degradation have a long history in Tanzania. In the 1970's and 1980's, the government instituted measures to control land degradation by establishing and implementing restoration programmes and projects including Soil Conservation Programme Hifadhi Ardhi Dodoma (HADO), Hifadhi Ardhi Shinyanga (HASHI), Land Management Programme (LAMP) in Manyara, Soil Erosion Control and Agroforestry Project (SECAP) in Lushoto, Hifadhi Mazingira (HIMA) in Iringa and, Hifadhi ya Misitu ya Asili ya Jamii (HIMA) - Zanzibar.

Furthermore, efforts were made to address land degradation by establishing forest plantations, ranches, and conservation of water catchments, agro-pastoralism, and agroforestry practices that helped communities to identify local natural resource problems and agree on solutions. More emphasis was given to various functions within the landscape to ensure consensus among stakeholders and equilibrium between ecological integrity and improved human well-being. Despite these efforts by key sectors, land degradation continued in various parts within the country that brought negative impacts on social, economic, ecological, and physical environment.

### 1.1 Country Profile

#### 1.2.1 Location and Physiographic condition

Tanzania is located on the East Coast of Africa between latitudes 1° South and 12° South and between longitudes 29° East and 41° East (Figure 1). It extends from Lake Tanganyika in the West, to the Indian Ocean in the East,

Lake Victoria in the North, to Lake Nyasa and River Ruvuma in the South. 'Tanzania shares borders with Kenya and Uganda to the North, Rwanda, Burundi, Democratic Republic of Congo and Zambia to the West, Malawi, and Mozambique to the South.' The total area of Tanzania is 945,087 km<sup>2</sup> of which the Mainland comprises of 939,702 km<sup>2</sup> and the Islands of Zanzibar, in the Indian Ocean, comprise of 2,654 km<sup>2</sup>.



**Figure 1:** The map of the United Republic of Tanzania showing international boundaries

The Mainland is dominated by large central plateau, covered with grasslands, plains and rolling hills. The Serengeti Plain is a large geographical area that spans some 30,000 km<sup>2</sup>. The country has some belts of highlands, including, Mount Kilimanjaro (5,895 m.a.s.l.) the highest mountain in Africa, Mount Meru (4,566 m.a.s.l.) and other mountain ranges such as Livingstone, Kipengere, Udzungwa, Uluguru, Nguu, Usambara and Pare. Zanzibar is relatively flat with some hilly areas particularly in the western part of Pemba. The soils in Zanzibar can be categorized as deep and coral rag soils. The deep and fertile soils occur in the western part of Islands where most of permanent agriculture is practiced.

### **1.2.2 Climate**

The climate of Tanzania is influenced by the monsoon winds, the Southerly monsoons and the Northerly monsoons. The Southerly monsoons begin in April ending in September and they are usually strong and predominant. They are characterized with lower temperatures (approximately 25 °C) and bring the long rains (Masika) from March to May. The Northerly monsoons begin in November ending in February. These are lighter winds and are predominantly northerly. The northerly monsoon is characterized with high air temperatures (>30 °C) and bring the short rains (Vuli) from November to December. The mean relative average humidity in Tanzania is recorded as 44.6%; and on monthly basis, it ranges from 30% in September and October to 58% in March. The coastal areas are more humid compared to the rest of the country.

### **1.2.3 Socio - economic**

The 2022 National Census estimated the population at 61,741,120 million. The population is increasing rapidly at a growth rate of 3.2%. Population has tripled since 1967 and at the current rate, the population is set to double in the next 26 years. Agriculture, forestry and fisheries sectors account for 26.8% of the Gross Domestic Product (GDP) (URT, 2019b), and employ 75.9% of the workforce. Tanzania has been characterized by political stability and strong economic growth during the last decade. The country has abundant natural resources capable of supporting economic growth with perspectives for future extraction of a wide range of minerals including uranium and natural gas.

### **1.2.4 The Economy**

The economic growth in Tanzania was strong and on track in 2018/2019, despite slow private sector credit growth. Real output grew by 7.1 percent

in 2017, from 7.0 percent recorded in each of the preceding three years. The main drivers of the growth were construction, transport and storage, and agriculture. Meanwhile, mining and quarrying, water supply, transport and storage, information and communication, and construction sectors grew faster than other sectors. Service activities contributed about 36 percent of nominal GDP.

Tanzanian economy depends on climate sensitive sectors which have significant contribution to GDP and employment, which include Agriculture, Mining, Tourism, construction and Transportation. Since 2018, Tanzania economy has been growing at an average of 7%. The main drivers of the growth were construction, transport and storage, and agriculture. Meanwhile, mining and quarrying, water supply, transport and storage, information and communication, and construction sectors grew faster than other sectors. Service activities contributed about 36 percent of nominal GDP (URT, 2021).

### 1.3 Restoration in Tanzania

Tanzania is signatory to a number of regional and global agreements, protocols and conventions including the Rio Conventions. The concept of sustainable development gained popularity after the United Nations Conference on Environment and Development (UNCED) of 1992 in Rio de Janeiro with emergency of new policies and strategies to correct the past mistakes. Land degradation was considered a result of interrelated constraints whose solutions require multi-sectoral approach and adequate stakeholders' involvement. In response to this, Tanzania embarked on formulation of policies to address the degradation problems. Some of the key policies addressing land degradation issues in Tanzania include Agriculture Policy 2021 and Livestock Policy of 2006, National Water Policy (NAWAPO) of 2002 and the National Environmental Policy (NEP) of 1997. Some of the strategies are the Agricultural Sector Development Strategy (ASDS) of 2001, Strategy for Urgent Actions on Land Degradation and Water Catchments (SUALDWC) of 2006 and the National Strategy for Growth and Reduction of Poverty (NSGRP) locally known as Mkakati wa Kuondoa na Kukuza Umaskini Tanzania (MKUKUTA) that was approved in 2005.

Moreover, Tanzania is making commendable efforts through various institutions (both private and public) in addressing the ongoing threat of land degradation and deforestation. For example, the National Tree Planting Programme (2017-2022); Greening Cities (2019-Ongoing); National Strategy Conservation on Land and Water sources (2019-2024), National strategy on Conservation of Coastal Environment, Lakes, Dams and Rivers (2019-2024); the forest rehabilitation of targeted water catchments under the National Water Sector Development Programme (2014-2019). Other initiatives include Zanzibar Long Term Forest Resources Management Plan (2015-2025), demonstration of conservation and development benefits through Integrated and Village Land Use Plan.; Upgrading Forest Reserves to Nature Forest reserves, and Agroforestry programmes. Other efforts in addressing land degradation in Tanzania include the Land Degradation Neutrality (LDN) a Global initiative led by United Nations Convention to Combat Desertification (UNCCD). The LDN aims at ensuring a sustainable social economic development in the country by implementing strong national environmental policies to protect the ecosystem. In addition, the United Republic of Tanzania has considered mobilizing resources, soliciting and influencing partnerships with international partners, business community, national and international non-governmental organizations as important.

The FLR process requires sufficient momentum, guidance and support from all stakeholders (public and private sectors) to withstand obstacles, crises, shocks and their complex impacts across political, economic, social and ecological domains. Clearly, adaptive management, monitoring and long-term active engagement of all stakeholders are key to the long-term viability and success of FLR and other landscape approaches.

#### **1.4 Rationale for FLR strategy**

Forest Landscape and environmental degradation remain as one of the priority environmental and socio-economic challenges in the country and globally in spite of continued conservation and management efforts over several past decades. According to the Forest Landscape Restoration Opportunity Assessment Report (2021), at least 14% of the total land area in the country is highly degraded particularly in miombo woodlands and semi-arid areas. Continued degradation of a wide range of landscapes and ecosystems is estimated to amount to an economic loss of at least five percent of the national GDP and affects severely a significant proportion of the population who depend most directly on their immediate environment for survival.

In response to widespread forest landscape degradation, numerous global and regional initiatives and commitments have been adopted, particularly the Bonn Challenge that targets to restore 350 million hectares of degraded landscapes by 2030 globally. Other relevant international frameworks include Sustainable Development Goals (Goal 15 Life on land; Goal 1 Poverty; Goal 2 - Zero hunger; Goal 3 - Good health and wellbeing; and Goal 13 on Climate Action); Convention on Biological Diversity (CBD); United Nations Convention on Combating Desertification (UNCCD); United Nations Framework Convention on Climate Change (UNFCCC); and the Paris Agreement.

Consequently, at the regional level, the adoption of the African Forest Landscape Restoration Initiative (AFR100) of 2015 to restore 100 million hectares of land in Africa by 2030, provides revitalized drive and blueprint for addressing landscape degradation which will also contribute in climate change adaptation and mitigation, biodiversity conservation and the provision of ecosystem services. Similarly, Agenda 2063 (The Africa We Want), among others, emphasizes on enhancing regional efforts for environmental sustainability and climate resilience.

In 2018, Tanzania committed to restoring 5.2 million hectares of degraded land by 2030 under the AFR100 initiative. Key national policies and strategies such as the Third Five Year Development Plan (2021/22–2025/26), the National Environment Policy (2021), the National Environmental Master Plan for Strategic Interventions (2022–2032), the National Climate Change Response Strategy (2021–2026), the Zanzibar Climate Change Strategy (2014), the Nationally Determined Contribution (2021),

The National Invasive Species Strategy and Action Plan (2019–2029), the National Forest Implementation Strategy (2021–2031) support this target. Together, these frameworks promote synergies, cross-sectoral coordination, and stakeholder engagement to address landscape degradation effectively.

In Tanzania, land degradation has a long history since 1970's. The Government has been implementing restoration programmes and projects in various parts of the country. The overall implementation of these restoration efforts has had mixed results. Some of the notable achievements includes increasing protected area to about 40 percent of the total land area; demarcating, gazetted and protecting water sources; country-wide tree planting campaign; development and implementation of land-use plans; and increasing land area under irrigation. However, some of the challenges encountered include increasing deforestation; inadequate capacity of various institutions responsible for forest landscape restoration; Unsustainable human activities; Inadequate compliance to relevant legislation, uncoordinated efforts among actors and low level of awareness among key stakeholders.

It is against this background that, addressing forest landscape degradation requires sustained and long-term coordinated efforts, which are vital for better management and restoration of degraded landscape resources. In this regard, the formulation of the National Forest Landscape Restoration Strategy is an opportunity to consolidate national experience and direct future actions to combat land degradation and associated drivers in a more focused, strategic, holistic and effective manner using participatory approaches that capture the interests, needs, experience and expectations of all stakeholders.

## 1.5 Objectives of the Strategy

### 1.5.1 Overall objective

To attain sustainable forest landscape ecosystems that improves and supports livelihoods, socio-economic development and environmental integrity.

#### Specific objectives

- a) Restore deforested and degraded landscapes to meet the national target of 5.2 million hectares
- b) Enhance ecological services for improved water-, food- and energy security
- c) Strengthen institutional capacity, coordination and collaboration for sustainable forest landscape restoration
- d) Promote gender-responsive planning and implementation by strengthening community livelihood for the sustainability of forest landscape restoration initiatives

### 1.5.2 Guiding Principles for FLR

Successful FLR integrates a number of guiding principles, including (ITTO, 2020):

*i. Focus on landscapes:* It restores entire landscapes, not individual sites. Restoration typically entails balancing across the landscape a mosaic of interdependent land uses such as protected forest areas, ecological corridors, regenerating forests, other natural ecosystems, agroforestry systems, agriculture, improved fallow systems, well-managed plantations, and riparian strips to meet a variety of human needs and nature.

*ii. Restore ecological functionality:* It restores the ecological functionality of the landscape, such as its richness as a habitat, its ability to contain erosion and floods, and its resilience to climate change and various disturbances. This can be done in many ways, one of which is to restore the landscape toward the pre-human disturbance or “original” vegetation, but other strategies may also be used.

*iii. Allow for multiple benefits:* It generates a suite of ecosystem goods and services by intelligently and appropriately increasing tree cover across the landscape. In some places, trees are added to agricultural lands without forming a forest canopy in order to enhance food production, reduce erosion, provide shade, and produce firewood.

In other places, trees are added to create a closed canopy forest capable of sequestering large amounts of carbon, protecting downstream water supplies, and providing rich wildlife habitat.

*iv. Recognize that a suite of interventions is possible:* It embraces a wide range of strategies for restoring trees on the landscape. For instance, some strategies make way for “nature to take its course” (e.g., curtailing livestock grazing to allow trees to spontaneously regrow), while others involve very active human intervention (e.g., tree planting).

*v. Involve stakeholders:* It actively engages local stakeholders - including landowners, land managers, communities, civil society, governments, and the private sector, in decisions regarding restoration goals, implementation methods, and trade-offs. It is important that the restoration process respects local stakeholders’ rights, aligns with their land management needs, and provides them with benefits. Active, voluntary involvement of local stakeholders can lead to better buy-in, greater access to local knowledge, motivated land managers, and less need for external resources.

*vi. Tailor to local conditions:* It adapts to fit local social, economic, and ecological contexts; there is no “one size fits all.”

*vii. Manage adaptively:* It adjusts restoration strategies over time as environmental conditions, human knowledge, and societal values change. It leverages continuous monitoring and learning to make adjustments as the restoration process progresses.

*viii. Avoid conversion of natural ecosystems:* It does not call for increasing tree cover beyond what would be ecologically appropriate for a particular location, and should not cause any loss or conversion of natural forests, grasslands, or other ecosystems (e.g., into tree or crop plantations). Restoration should complement, not undermine, ecosystem conservation efforts.

## CHAPTER TWO

### 2.0 SITUATION ANALYSIS

#### 2.1 Policy, Legal, Institutional Frameworks and Multilateral Environment Agreements

Several national policies and legal instruments guide forest landscape restoration in Tanzania. Some of these are discussed below.

##### 2.1.1 Policy Framework

###### a) The National Forest Policy (1998)

The Overall objective of the National Forest Policy is to enhance contribution of forest sector to the sustainable development of Tanzania together with conservation and management of Tanzania's natural resources for benefit of the present and future generations. However, wider stakeholders' engagement in forest conservation initiatives has been well advocated in National Forest Policy Implementation Strategy of 2021- 2031 which ensures a broad spectrum of achievement including restoration activities at various levels.

###### b) The National Land Policy (1997)

The overall aim of this Policy is to promote and ensure a secure land tenure system, encourage optimal use of land resources and facilitation of broad-based social and economic development without upsetting or endangering ecological balance of the environment.

###### c) The National Environment Policy (2021)

The second National Environmental Policy was created to address gaps in the first one. It gives better guidance on new environmental problems like climate change and invasive species, which are important for Forest Landscape Restoration (FLR). The policy provides a clear plan for managing the environment in a way that works well with both national and global goals. To succeed, it requires strong institutions, public involvement, and action across all sectors.

Key objectives of the policy support Forest Landscape Restoration (FLR) by promoting sustainable land use, water resource management, conservation of forest ecosystems and biodiversity, climate change adaptation, and improved environmental governance. These efforts contribute to restoring degraded landscapes, ensuring food security, alleviating poverty, and increasing the contribution of environmental resources to Tanzania's economy.

**d) The National Fisheries Policy (2015)**

The Policy advocates promotion of public awareness on environmentally friendly fisheries and aquaculture practices, climate change issues and sustainable environmental conservation; strengthening capacity to ensure compliance to fisheries related environmental laws and regulations; and striving to improve adaptation measures to climate change effects and deal with all the risks involved.

**e) The Wildlife Policy of Tanzania (1998)**

The Wildlife Policy of Tanzania is a national policy prepared with a vision to promote the conservation of biological diversity, administer, regulate and develop wildlife resources, involve all stakeholders in wildlife conservation and sustainable utilization, as well as in fair and equitable sharing of benefits. This policy addresses the need to protect all habitats which contribute to sustainable management of wildlife hence adding levels of restored vegetation cover for the same hence cumulative national restoration strategy.

**f) The National Water Policy (2002)**

The main objective of this Policy is to improve health and alleviate poverty of the rural population through improved access to adequate and safe water; manage water supplies at the lowest appropriate level as opposed to the centralized command control approach; promote participation of the private sector in the delivery of goods and services and to improve health through integration of water supply, sanitation and hygiene education.

Waste water and environmental management is a point of emphasis addressed in this Policy with intent to have a wastewater treatment system which is environmentally friendly in order to ensure domestic and industrial wastewater is not haphazardly discharged to contaminate water sources and the environment; putting in place legislation requiring industries to pre-treat their wastewater before discharging into municipal sewerage system; strengthening legislation enforcement mechanism at the same time industries and other institutions in the research and development of least cost technologies for wastewater treatment and recycling will be encouraged and industries shall be required to use environmentally friendly raw materials with less toxic elements and adopt cleaner production technology.

**g) The National Livestock Policy (2006)**

The National Livestock Policy aims to develop a competitive and more efficient livestock industry that contributes to the improvement of the well-being of the people whose principal occupation and livelihood is based on livestock; contribute towards national food security through increased production, processing and marketing of livestock products to meet national nutritional requirements; promote integrated and sustainable use and management of natural resources related to livestock production in order to achieve environmental sustainability; strengthen technical support services, develop and disseminate new technologies; and Mainstream cross-cutting and cross-sectoral issues such as land and environment, among other.

The Policy, in connection with Forest Landscape Restoration Strategy, addresses issues of Forage Conservation bearing in mind that forage conservation is hampered by changes in weather conditions, low pasture and forage yields, inadequate knowledge on the conservation methods for promotion of forage conservations to ensure feed availability during unfavorable conditions and scarcity in order to increase livestock productivity.

Constraint of water supply for livestock and mitigation measures to ensure sustainability thereof, has as well, been captured in this Policy. Water for livestock in the pastoral and agro-pastoral areas is constrained by inadequate water harvesting expertise, high cost of earth moving and dam construction equipment, uneven distribution of water sources and weak water users' associations. Water supply for livestock is expected to be mitigated through development, utilization and maintenance of reliable water sources for livestock production.

**h) The Mineral Policy of Tanzania (2009)**

The Policy, as far as Forest Land Restoration Strategy is concerned, suggests viable effort that will promote safety and maintain hygiene conditions and protect the environment in mining areas; the Government to continue collaborating with stakeholders to ensure that small scale miners preserve the environment; accrual of geo-information to be used for effective management of geo-hazards and the environment; and the need for the Government to strengthen the capacity of Geological Survey of Tanzania (GST) in collecting, processing, interpretation, archiving and dissemination quality geo-scientific information, maps and data in provision of reliable laboratory and geo-technical services as well as in monitoring geo-hazards and the environment; improvement of management systems for health, safety and

environment in order to increase safety and environmental performance in mining operations; the need for the Government to strengthen monitoring and regulation of the mining industry to reduce or eliminate the adverse effects on health and safety, environment and social issues; and the Government will to continue collaborating with stakeholders to ensure that small, medium and large scale miners preserve the environment.

**i) The National Natural Gas Policy (2013)**

The Policy addresses health, safety and environment protection as one of the challenges surrounding the fast-growing natural gas industry that have to be mitigated through Compliance with health, safety and environmental standards. The Policy further advocates adequate disaster management systems to prevent adverse impact and protect people's health, safety and environment and enforcement of sound practices in environment, health and safety management in concurrence with the Forest Land Restoration Strategy.

**j) The National Agricultural Policy (2013)**

The Policy aims among others at fighting land degradation, favoring organic agriculture and the production of biofuel crop production for increased use as a renewable energy, and more broadly to take adequate measures to improve adaptation to climate change effects.

**2.1.2 Legal Framework**

The National Forest Landscape Restoration Strategy is developed within Tanzania's existing legal framework, which advocates for and provides an enabling environment for the implementation of restoration programs. The key legal frameworks supporting this strategy are outlined below:

**a) The Forest Act No. 14 of 2002**

The Act provides for promotion and enhancement of the forest sector's contribution to the sustainable development of Tanzania together with conservation and management of natural resources for the benefit of present and future generations, meanwhile, ensuring ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility. Periodic amendments have been made in order to streamline global changes in forest management initiatives. The amendment enactment with the Government Notice Number 85 of 2020 and Government Notice Number 59 of 2022 has created more enabling conditions for wide stakeholders' engagement in forest management initiatives including restorations. This has been recently addressed by the Government Notice number 636 of 2022 which provides the

mandatory attributes of restoration initiatives in the course of operationalization of carbon emissions reduction trade (CER) in any forest ecosystems. Furthermore, there joint initiatives which has enabled the upgrading some of forest ecosystems to Man and Biosphere Reserves (MAB) an international status which constitutes mankind as part of conservation initiatives (restoration inclusive). Such forest ecosystems include the East Usambara Mountains as well as the Marine seascape of Rufiji, Kibiti, Mafia and Kilwa. These ecosystems are recognized internationally by UNESCO among other 73 worldwide Man and Biosphere Reserves.

**b) The Environmental Management Act No. 20 of 2004**

This statute has been enacted to provide for legal and institutional framework to: serve the purpose of ensuring sustainable management of environment; outline principles for management, impact and risk assessments, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement; provide basis for implementation of international instruments on environment; provide for implementation of the National Environment Policy; repeal the National Environment Management Act of 1983 and provide for continued existence of the National Environment Management Council as well as to provide for establishment of the National Environmental Fund and to provide for other related matters.

**c) Tanzania Extractive Industries (Transparency and Accountability) Act No. 23 of 2015**

The Act amends section 22 of the Principal Act by adding section 22A immediately after section 22 to provide for matters related to audit of environmental management expenditures of mining entities for the purpose of assessment of compliance to mine closure plans.

**d) The Animal Welfare Act No. 19 of 2008**

This Act poses responsibility to the local government authorities to take reasonable efforts to avoid environmental pollutions that would have caused by abandoned livestock carcass.

**e) The Petroleum Act No. 21 of 2015**

This Act caters for provisions with respect to strategic assessment of the social and environmental impact of the potential petroleum activities on national development, local communities, environment and risk of pollution, trade and tourism, agriculture and fisheries, potential economic and social

impact of the petroleum activities and other activities related to petroleum industry.

**f) The National Parks Ordinance Chapter 282 of the 2002**

The Act provides for the establishment, control and management of national parks and for related matters.

**g) The Wildlife Conservation Act No. 5 of 2009**

The Act has been enacted to make better provisions for the conservation, management, protection and sustainable utilization of wildlife and wildlife products and to provide for other related matters.

**h) The Fisheries Act No. 22 of 2003**

The Act makes, among the rest, provisions for sustainable development, protection, conservation, aquaculture development, regulation and control of fish, fish products, aquatic flora and its products and for related matters. Furthermore, there ongoing efforts to improve fish and marine management by adhering to Marine Spatial Planning approach which ensures inclusion of all adjacent ecosystems to marine areas. It is in this aspect that there should be an application of a concept of restoring forests in areas which contribute to fisheries sector like the mangrove forest reserves in Tanzania.

**i) The Marine Parks and Reserves Act No. 29 of 1994**

This legislation provides for the establishment, management and monitoring of marine parks and reserves, to establish a Park and Marine Reserves Unit, and to repeal certain provisions of the existing legislation. Most marine parks border the mangrove forest ecosystems. The Marine Spatial Planning approach has been developed which ensures shared management of adjacent ecosystems to customize similar objectives like restoration and protection of mangrove ecosystems in Tanzania.

**j) The Water Resources Management Act No. 11 of 2009**

The Water Resources Management Act, is a statute enacted by Parliament of the United Republic of Tanzania to provide for institutional and legal framework for sustainable management and development of water resources; to outline principles for water resources management; to provide for the prevention and control of water pollution; provide for participation of stakeholders and the general public in implementation of the National Water Policy, repeal of the Water Utilization (Control and Regulation) Act and to provide for related matters.

**k) The Village Land Act No. 5 of 1999**

The Village Land Act is a statute enacted to provide for the management and administration of land in villages and for related matters. Most of government agencies like TFS have developed and facilitated Village Land Use Plans to address smooth resources conflict management hence contribution to forest conservation initiatives which include restoration in selected sites at village land in order to reduce pressures on utilization of forest resources to adjacent forest reserves ecosystems.

**l) The Land Act No. 4 of 1999**

The Land Act is a piece of legislation providing for the basic law in relation to land other than the village land, management of land, settlement of disputes and related matters. Land planning conflict resolution mechanism have been developed by the Government where there usually inter-ministerial consultations before issuance of land use permits.

**m) The Urban Planning Act No. 8 of 2007**

An Act to provide for the orderly and sustainable development of land in urban areas, to preserve and improve amenities; to provide for the grant of consent to develop land and powers of control over the use of land and to provide for other related matter This provides legal prescriptions on how best to plan towns and cities in order to accommodate development and establishment of well afforested avenues, streets or parks for aesthetic values as well as other forest ecosystem services.

**n) The Mining Act No. 14 of 2010**

This Act has been enacted to re-enact with substantial amendments the provisions that regulate the law relating to prospecting for minerals, mining, processing, and dealing in minerals; granting, renewal and termination of mineral rights; payment of royalties, fees and other charges and any other relevant matters. There are updated mechanisms set to regulate provisional restoration of mining sites in the course of operationalization of mining schemes. TFS is mandated to regulate all mining permits within Forest Ecosystems in order to ensures management of forests within the mining site.

**o) The Local Government District Authorities Act No. 7 of 1982**

The Local Government (District Authorities) Act has been enacted to make better provisions for, and to consolidate laws relating to, local government, repeal the Local Government Ordinance, repeal certain other written laws and provide for other matters connected with or incidental to the organization of local government in Mainland Tanzania. This Act has provided provisions of establishment of village By- laws which gives backing-up of forest related laws governing the protection of restored forests at village land, town councils land, municipal and Cities land hence helping the consolidation of restoration efforts in Tanzania. Also, this act provides prescriptions that every established village should have enough area set aside for sustainable agriculture as well as expansion areas for agriculture in order to accommodate forecasted population rate increment in Tanzania.

**p) Local Government (Urban Authorities) Act No. 8 of 1982**

The Local Government (Urban Authorities) Act is a legal instrument enacted to make better provisions for the establishment of urban authorities for the purposes of local government, provide for the functions of those authorities and for other matters connected with or incidental to those authorities.

### **2.1.3 Institutional Framework**

National development frameworks, plans, and strategies related to forest landscape restoration are outlined below:

#### **a) National Environmental Master Plan for Strategic Interventions (2022 - 2032)**

The Master Plan guides environmental management and sustainable development over 2022 - 2032. The plan aims to address key environmental challenges such as land degradation, deforestation, pollution, and climate change impacts. It outlines strategic interventions to enhance biodiversity conservation, promote sustainable use of natural resources, and strengthen resilience against environmental risks. The plan also emphasizes the importance of cross-sectoral coordination, community participation, and integration of environmental considerations into national development planning.

#### **b) National Forest Policy Implementation Strategy (2021 - 2031)**

The strategy operationalize the objectives outlined in the National Forest Policy. Its primary aim is to ensure that forest and tree resources are effectively conserved, managed, and utilized sustainably to meet both current and future demands. The strategy emphasizes enhancing biodiversity conservation, promoting sustainable livelihoods, and strengthening forest governance. It also focuses on increasing community participation in forest management and aligning national efforts with international commitments related to forestry and environmental conservation.

#### **c) Tanzania National Tree Planting Day, 1 April**

Tanzania's National Tree Planting Day is observed annually on April 1st. Established in 2009, the initiative aims to combat deforestation and promote environmental conservation. On this day, various activities are organized by government agencies, schools, and community groups, including tree planting events and educational programs focused on the benefits of afforestation and sustainable land management. These efforts contribute to restoring degraded lands, enhancing biodiversity, and raising public awareness about the importance of trees in environmental health.

#### **d) National Climate Change Response Strategy (2021-2026)**

The strategy aims at addressing climate change challenges while promoting sustainable development. It focuses on enhancing the country's capacity to adapt to climate change impacts and participate in global mitigation efforts.

Its specific objectives include integrating climate change considerations into national development plans strengthening institutional and technical capacities, and mobilizing resources for effective implementation. The strategy emphasizes cross-sectoral collaboration and aligns with international commitments, such as the Paris Agreement and the Sustainable Development Goals.

**e) National Agroforestry strategy II (2024 - 2031)**

This second Agroforestry Strategy aims to address key challenges that hindered the achievement of goals under the first strategy. These include the limited capacity of the extension system to support agroforestry, inadequate coordination and implementation across sectors, and a lack of sustainable financing mechanisms for agroforestry research and development. Additionally, the strategy seeks to enhance the role of agroforestry in climate change adaptation, mitigation, and resilience initiatives. Overall, it outlines strategies and targets that deliver multiple benefits to farming communities, while conserving forest resources and sustaining landscapes and the environment. This is highly relevant to achieving the goals of the National Forest Policy and the Forest Landscape Restoration (FLR) framework.

**f) National Bamboo Development Strategy and Action Plan (2023 - 2031)**

The National Bamboo Development Strategy and Action Plan was developed to unlock the vast potential of bamboo resources in Tanzania. With an estimated coverage of 1,025,033 hectares, bamboo presents a valuable opportunity to meet the growing demand for bamboo products and services in rural, urban, and peri-urban areas, as well as in international markets.

The strategy identifies priority areas and offers a clear roadmap for addressing existing challenges while capitalizing on opportunities to establish a vibrant and sustainable bamboo industry. Through the promotion of sustainable bamboo production and utilization, it aims to reduce the national wood deficit, enhance carbon sequestration for climate change mitigation, and ease pressure on remaining natural forests and woodlands.

Bamboo is also strategically positioned to support Tanzania's Forest Landscape Restoration (FLR) efforts. Its rapid growth, strong root systems, and ecological adaptability make it an effective species for restoring degraded landscapes, improving soil stability, and fostering biodiversity.

Overall, the strategy contributes to socio-economic transformation, environmental sustainability, and the achievement of national development goals. It aligns with Tanzania's broader vision for a green economy and underscores bamboo's role in advancing both climate resilience and sustainable land management.

#### **2.1.4 Multilateral Environment Agreements**

The United Republic of Tanzania is a party to various international and regional initiatives because they align with the country's development priorities, environmental challenges, and international commitments. Relevant international and regional initiatives related to Forest Landscape Restoration include:

**a) Convention on Biological Diversity (CBD)**

Supports FLR by promoting the conservation and sustainable use of biodiversity, which is integral to restoring ecological integrity and resilience in forest landscapes.

**b) United Nations Convention to Combat Desertification (UNCCD)**

The UNCCD promotes sustainable land management and the restoration of degraded lands, particularly in arid, semi-arid, and dry sub-humid areas.

**c) United Nations Framework Convention on Climate Change (UNFCCC)**

FLR contributes to climate change mitigation through carbon sequestration and enhances adaptation by improving ecosystem resilience. Restoration initiatives also support the implementation of Nationally Determined Contributions (NDCs).

**d) International Arrangement on Forests and the United Nations Strategic Plan for Forests 2017–2030**

These frameworks explicitly support FLR through the Global Forest Goals, which emphasize increasing forest area, enhancing forest health and resilience, and promoting sustainable forest management.

**e) SADC Protocol on Environmental Management for Sustainable Development (2014)**

This protocol calls for harmonized regional strategies to address climate change, land degradation, and environmental challenges.

It supports FLR by encouraging coordinated restoration actions among member states. Tanzania signed the protocol in 2015.

**f) SADC Vision 2050 (adopted in 2020)**

Recognizes the role of natural resources, including forests, in sustainable development and regional resilience. It promotes integrated landscape approaches, including FLR, to ensure environmental sustainability and improved livelihoods across the region.

**2.2 Land Degradation Status in Tanzania**

**2.2.1 Land Degradation Status across regions**

Very severely degraded areas range from 13% (Table 1) to 14% (Table 2). In mainland Tanzania, the regions with the highest levels of degradation are Tabora, Lindi, Ruvuma, Dodoma, and Singida (Figures 2 and 3). In Zanzibar, the regions of Kusini Pemba, Kaskazini Pemba, and Kaskazini Unguja are the most affected by severe degradation (Figure 4).

**Table 1:** Severity of Land Degradation in Tanzania According to Land Degradation Neutrality Report (2018)

Severity	Area (Ha)	Percentage
Not degraded	1,597,513	1.8
Light degraded	14,517,954	16.39
Moderate degraded	39,471,823	44.56
Severe degraded	21,588,160	24.37
Very severe degraded	11,397,484	12.87

**Table 2:** Severity of Land Degradation in Tanzania According to ROAM (2021)

Severity	Area (Ha)	Percentage
Low degraded	47,307,263	54
Moderate degraded	28,001,822	32
High degraded	12,330,723	14

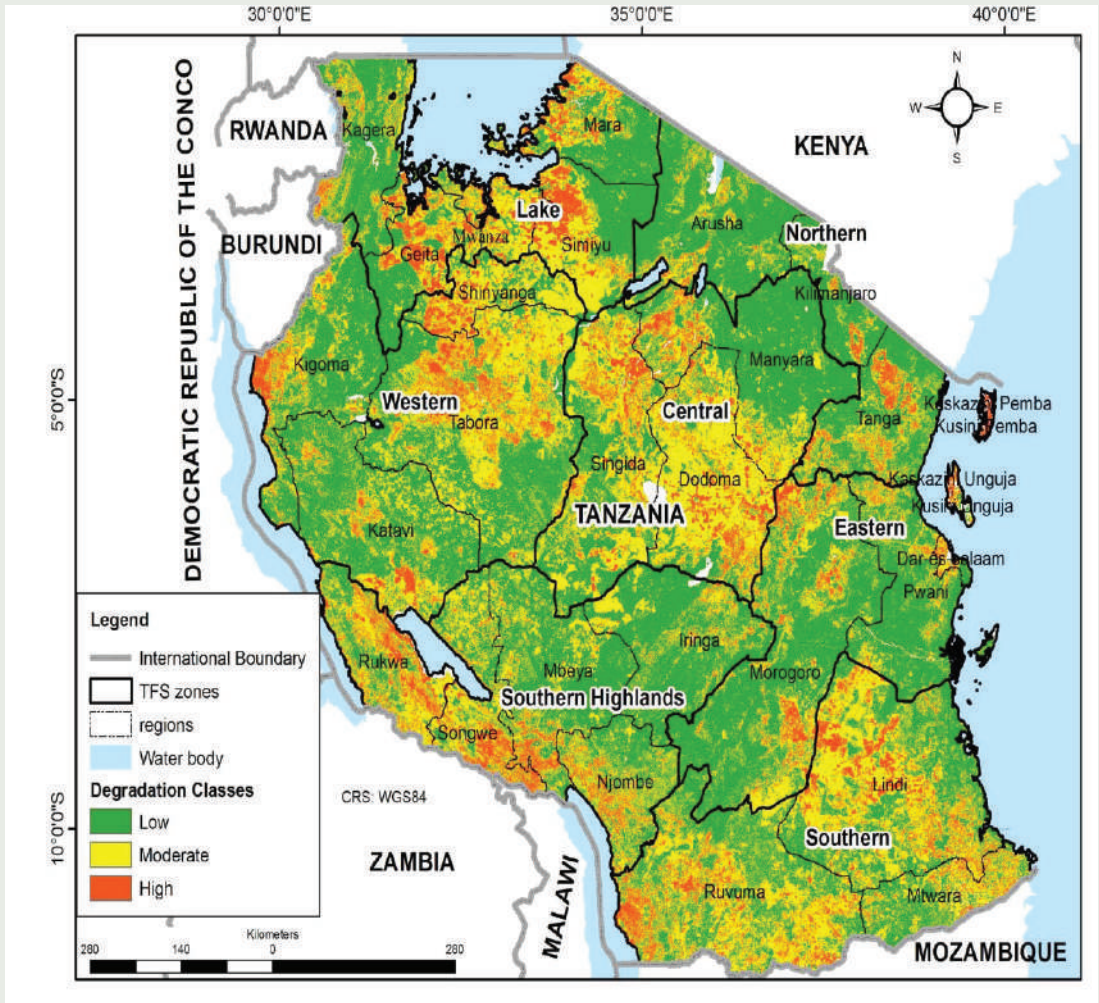


Figure 2: Land degradation status in Tanzania by regions

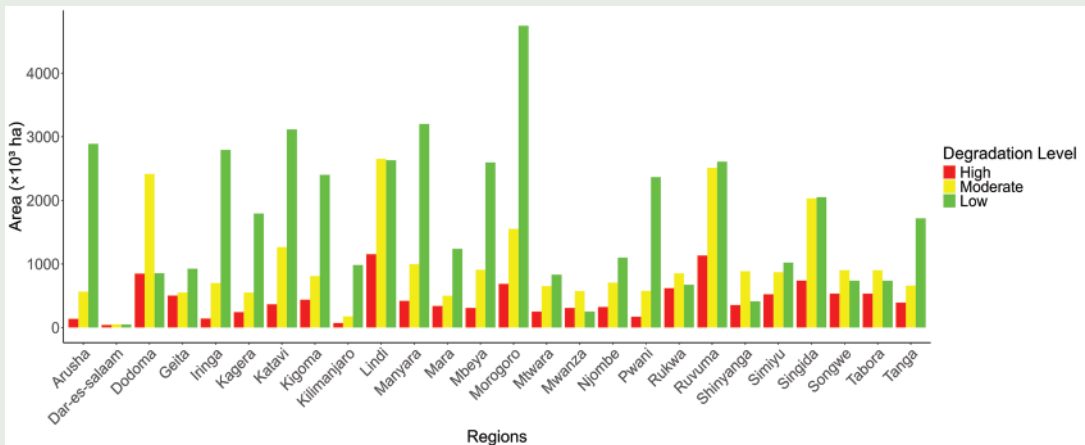
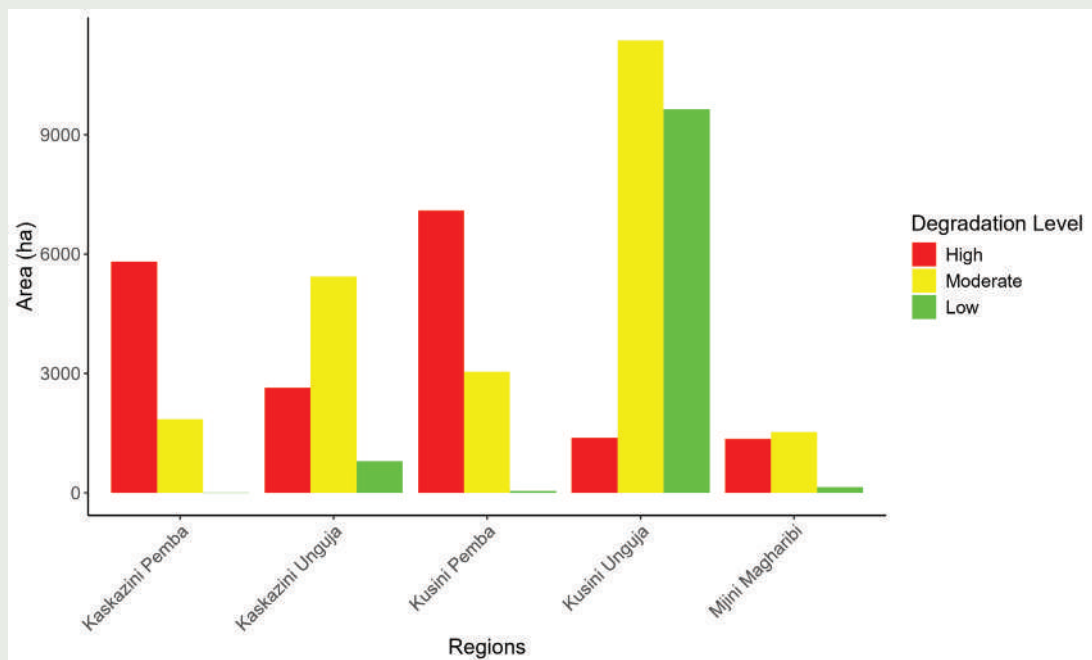


Figure 3: Degraded area (Ha) by regions - Tanzania Mainland



**Figure 4.** Degraded area (Ha) by regions - Tanzania Zanzibar

## 2.2.2 Land Degradation Status across the Sectors

### a) Forests

Forests are essential to life on earth, yet deforestation and forest degradation continue at an alarming rate. Tanzania's forested area covers 48.1 million hectares (URT, 2015b) and declined at an average rate of 420,500 hectares per year between 2010 and 2020 (FAO, 2020). At the same time, the national annual wood deficit is 19.5 million m<sup>3</sup>, with demand and supply estimated at 62.3 million m<sup>3</sup> and 42.8 million m<sup>3</sup>, respectively (URT, 2015b). This persistent deficit underscores the growing pressure on forest resources to meet both domestic and international demand.

Deforestation is taking place in unreserved forest land (general land) but also some of the protected areas. The main drivers of deforestation and forest degradation are clearing for agriculture, overgrazing, wildfires, charcoal making, persistent reliance on wood fuel for energy, lack of efficient production and marketing, over-exploitation of wood resources and uncontrolled small-scale mining.

Due to ongoing deforestation, Tanzania's current Forest Reference Emission Level (FREL) is estimated at 43,736,974 tCO<sub>2</sub>e/year, which accounts for 0.69% of the carbon stock of 6,327,717,997 tCO<sub>2</sub>e in the country's forested land (URT, 2017). This makes the land-use change and forestry sector the largest emitter of greenhouse gases, followed in succession by the agriculture, energy, waste, and industries (URT, 2021b).

### **b) Biomass Energy**

Households consume 72% of the total energy in Tanzania, with biomass contributing about 90% of their primary energy supply. Among biomass sources, firewood accounts for 65%, charcoal 26.2%, while the remaining share comes from LPG, electricity, and other sources (Clements & Todd, 2022). Charcoal is the primary source of household energy in urban areas, as it is considered affordable and easy to transport, distribute, and store.

However, charcoal use poses significant environmental risks due to inefficient production methods—particularly the widespread use of Traditional Earth Mound Kilns (TEMK), which result in substantial wood waste (URT, 2019a). Moreover, charcoal production is generally associated with unsustainable harvesting practices (World Bank, 2009). Nearly one million tons of charcoal is consumed annually, leading to the loss of approximately 100,000 to 125,000 hectares of forest each year (World Bank, 2009).

Unless the energy sector is strengthened to meet the demands of Tanzania's rapidly growing urban population, the consumption of charcoal—which stood at 2.3 million tonnes in 2012 and is projected to double by 2030 (Camco Clean Energy (Tanzania) Limited, 2014)—will continue to accelerate forest degradation and loss.

### **c) Wildlife**

Tanzania is among the 15 countries globally with the highest number of endemic as well as threatened species. It's a home to about 20% of African's large mammals. Despite being a country rich in wildlife, it experiences a rapid loss of wildlife species and their habitat. Loss of wildlife habitat that is mainly due to deforestation, encroachment, land degradation, and human population increase. The Government of Tanzania is committed to effectively managing the wildlife resources for the benefit of its citizens. In 1998 the Government adopted the Wildlife Policy of Tanzania that identified challenges facing the wildlife sector such as habitat destruction resulting from deforestation and forest degradation as a result of population pressure of local communities living adjacent to protected areas.

### **d) Agriculture**

Tanzania relies heavily on rain-fed agriculture, with most people depending on small-scale farming for their livelihoods. Agriculture is a key part of the economy, contributing 24% of the national GDP and employing about 66.9% of the population, especially in rural areas(URT, 2015a). By 2030, the country's population is expected to reach 80 million, with over 70% relying on agriculture to survive. Tanzania has 94.5 million hectares of land, of which 44 million hectares are suitable for farming.

However, only 24% of this land is currently under cultivation. About 29.4 million hectares have potential for irrigation, but by 2013, only 450,392 hectares had been developed just a small portion of the total potential.

Most farming is done by smallholder farmers on plots ranging from 0.9 to 3 hectares. These farmers depend on rainfall and use traditional, low-input farming methods. As a result, land productivity is declining, and soil erosion and degradation are widespread. Low yields and poor-quality crops lead to low incomes.

To cope, many farmers turn to shifting cultivation clearing new land for farming which worsens deforestation and land degradation. These challenges show the need for Forest Landscape Restoration (FLR), which can help restore damaged land, improve agricultural productivity, and protect the environmen

### **e) Land**

Land is a natural resource on which most people in the country rely for their livelihoods. Of Tanzania's total area of 94.5 million hectares, approximately 88.6 million hectares is land, while the remainder is covered by water.

According to Section 2 of the Land Act of 2002, Tanzanian land is classified into three categories: reserved land, village land, and general land—which refers to land that is neither reserved nor village land. Village land makes up about 70% of the total land area, reserved land accounts for 28%, and general land comprises the remaining 2%(World Bank, 2015).

The increasing demand for land, driven by population growth and unsustainable human activities, has greatly contributed to land degradation, posing a threat to both social and economic development. These trends are being further accelerated by the effects of climate change.

The economic impact of land degradation is considerable, especially in areas with high levels of poverty. More than five years ago, the total annual economic value of land lost due to degradation was estimated at approximately USD 10.2 billion(URT, 2014). Efforts to address land degradation effectively are often hindered by the lack of reliable data on its extent and severity.

### **f) Water**

Water is a basic natural resource for socio - economic development. It is fundamental for various social - economic development activities such as industrial production, irrigated agriculture, livestock keeping, mineral processing, hydropower production, navigation and recreation and tourism.

Water resources are an important input into Tanzania's economy and include rivers, lakes, wetlands, springs, reservoirs and groundwater aquifers. They are used in agricultural production through irrigation and processing in agro-industries as well as in industrial production and power generation. Adequate water flows support the country's forests, grasslands, and coastal resources, which provide services (such as food, fodder, fuel wood, timber and other products) and other services (climate regulation, cultural and supporting services). Water which flows in national parks and protected areas support the tourism sector which is a key foreign exchange earner for the country.

The total area of freshwater in Tanzania is 54,337 km<sup>2</sup>, which accounts for about 6.1% of the country's total surface area. Water resources include rivers, lakes, wetlands, springs, reservoirs, and groundwater aquifers. Notably, lakes such as Tanganyika, Nyasa, and Victoria are shared with neighboring countries. Water resources management in Tanzania is organized into nine river/lake basins: Pangani, Wami-Ruvu, Rufiji, Ruvuma and the Southern Coast, Lake Nyasa, the Internal Drainage Basin, Lake Tanganyika, and Lake Victoria. Management is coordinated at multiple levels, including the National Water Board (NWB), Basin Water Boards (BWBs), Catchment Water Committees (CWCs), and Water Users Associations (WUAs) at the community level.

Water is a vital natural resource for Tanzania's socio-economic development, supporting key sectors such as industrial production, irrigated agriculture, livestock keeping, mineral processing, hydropower generation, navigation, recreation, and beach tourism. It also sustains wildlife and habitats essential to the tourism industry and underpins the fishing sector, with freshwater fisheries contributing approximately 85% of the country's total fish production, while marine fisheries account for the remaining 15%.

The demand for and availability of water for various uses directly influence the current and future state of Tanzania's water resources in both quantity and quality. According to the Water Sector Status Report (2015–2020), the country's annual renewable water resources are estimated at 126,262 million m<sup>3</sup> - equivalent to about 2,330 m<sup>3</sup> per capita per year. This exceeds the global water stress threshold of 1,700 m<sup>3</sup> per capita. However, this figure reflects physical availability rather than economic accessibility, meaning not all water is readily usable due to financial and infrastructural constraints status (URT, 2020). Furthermore, there is significant spatial variation across the country; while some river basins have abundant water resources, others are already experiencing stress.

### **g) Livestock**

Tanzania has the third-largest livestock population in Africa, comprising 25 million cattle 98% of which are indigenous breeds along with 16.7 million goats, 8 million sheep, 2.4 million pigs, and 36 million chickens. About 36% of farm households in Tanzania are engaged in livestock keeping, with 1% as pure livestock farmers and 35% as mixed crop-livestock farmers. The livestock sub-sector contributes 5.9% to the country's Gross Domestic Product (GDP).

Pure livestock keeping, dominated by traditional cattle, sheep, and goats, is concentrated in the savannah plains of northern Tanzania (Arusha and Manyara), where climatic and soil conditions are unfavorable for crop production. Agro-pastoralism, on the other hand, is practiced in the low-rainfall areas of the western (Shinyanga and Tabora) and central (Dodoma and Singida) zones, where shifting cultivation of sorghum and millet is common.

Moreover, smallholder dairy production is found in the Pwani Region, the Northern Zone, the Southern Highlands Zone, Kagera Region, and in peri-urban and urban areas around major cities and towns. In addition, commercial ranching primarily through the National Ranching Company (NARCO) accounts for about 7% of the marketed milk.

The livestock sub-sector faces challenges related to limited land tenure, which does not adequately account for high land carrying capacity and, in turn, restricts access to water and pasture resources. This limitation is primarily due to the slow pace of land allocation and the granting of ownership rights for grazing areas. Additional factors affecting productivity include the conversion of grazing areas into croplands and game reserves, as well as the migration of livestock farmers, which hinders long-term development of the areas they settle. Compounding these structural challenges is Tanzania's highly variable and complex climate. Current trends indicate rising temperatures and increasingly erratic rainfall patterns, which have already negatively impacted livestock production. Climate change is expected to further amplify existing pressures on grazing land and water resources, intensifying competition among different land uses.

Therefore, addressing land tenure issues must go hand in hand with urgent adaptation measures aimed at improving water, soil, and pasture management. Such measures are essential for building the resilience of both smallholder and commercial livestock systems to current climate variability and future climate change.

#### **h) Fisheries**

Tanzania is among the leading fisheries nations in Africa, ranking in the top 10 countries in terms of total capture fisheries production. Fisheries are practiced in both inland and marine environments. Inland water bodies—including Lake Victoria, Lake Tanganyika, Lake Nyasa, Lake Rukwa, Lake Eyasi, and other small lakes, rivers, and dams account for approximately 83% of the country's total fish production. The marine environment of the Indian Ocean contributes about 14%.

In 2014, the sector employed 183,800 full-time fishers, and around 4 million people derived their livelihoods from fisheries-related activities. The sector has been growing at an average annual rate of 5.5%, contributing 2.4% to the national GDP, and is therefore prioritized in the National Strategy for Growth and Reduction of Poverty (NSGRP).

However, the expansion of land use for agriculture and construction, along with unsustainable agricultural practices, is degrading natural habitats around lakes, rivers, and basins leading to increased sedimentation. Runoff from mountainous areas surrounding the lakes carries an average of 100 tons of soil per hectare per year into the lakes. The clearing of vegetation along basins and riverbanks is a major cause of erosion, resulting in reduced lake depths and, in some cases, drying of lakes such as Lake Rukwa and Lake Manyara.

Furthermore, the marine ecosystem which includes major estuaries, mangrove forests, coral reefs, sandy beaches, cliffs, seagrass beds, and muddy tidal flats is under significant threat. Pressures on coastal resources, especially the destruction of mangroves due to illegal logging, conversion for rice farming, fish smoking, and charcoal production, are contributing to the decline of mangrove forests along Tanzania's coast. Additionally, the mining of coral for construction materials are further degrading the marine environment and depleting fishery resources.

## 2.3 Restoration Initiatives

Tanzania, through government Ministries, Departments, and Agencies (MDAs) and non-state actors, has previously implemented a myriad of restoration initiatives (projects/programmes) aiming at halting the rate of deforestation and land degradation. Some of the initiatives are:

*i) Vice President's Office (VPO), Division of Environment:* The Vice President's Office (VPO) has been supporting several medium- and large-scale restoration programmes in semi-arid areas, including the implementation of sustainable land management projects in the Southern Highlands and around Lakes Nyasa and Tanganyika. Recently, in collaboration with the Tanzania Forest Service (TFS), International Union for Conservation of Nature (IUCN), United Nations Environment Programme (UNEP), and the National Environment Management Council (NEMC), the VPO has begun implementing the Integration of Landscape Restoration and Biodiversity Conservation project. Funded by the Global Environment Facility (GEF), this project aims to restore approximately 1,000,000 hectares of degraded and deforested land.

*ii) Ministry of Livestock:* In recognition of livestock challenges and related conflicts with farmers, the Ministry is working with local governments to conduct an assessment in 12 regions to identify and formalize ownership of grazing areas. The target is to cover 2.3 million hectares across Tanzania, with the aim of issuing Certificates of Customary Right of Occupancy (CCROs) to local communities.

*iii) Embassies in Tanzania:* Embassies, such as the Embassy of Finland, have implemented and financed programs such as Forest Ecology, Land Management, and Ecosystem Services Aiming at Restoration (2002–2013) in the East Usambara Mountains, in collaboration with World Wide Fund for Nature (WWF) Tanzania and the Tanzania Forest Conservation Group (TFCG). This program focused on preventing the loss of globally important biodiversity values of the forests; improving the livelihoods of forest-adjacent communities through various nature-based income-generating activities and village savings and loan schemes; and supporting deliberate efforts to restore and maintain the multiple functions of forests within the landscape.

*iv) Local government:* The government has succeeded in implementing Community-Based Forest Management (CBFM) at the village level, with 133 forest reserves gazetted, while an additional 258 forest reserves are in the process of being gazetted to increase the reserved forest area.

*v) Tanzania Forest Services Agency (TFS):* It has been supporting forest restoration in various areas across Tanzania through initiatives such as Participatory Forest Management (PFM), planting native tree species in degraded and deforested areas, supporting forest plantations and small-scale woodlots across the country, and upgrading 23 Forest Reserves to Nature Forest Reserves, covering a total area of 961,274.22 hectares. Moreover, it supports other restoration initiatives such as beekeeping activities, nature based tourism, and natural regeneration. Additional projects aimed at enhancing the network of Nature Forest Reserves have been implemented in collaboration with United Nations Development Programme (UNDP). The beekeeping sector also contributes to restoration efforts through the establishment of bee reserves, apiaries, and bee farms. Recently, the authorization of nature-based ecotourism in forest reserves has added value by delineating specific zones for restoration and ecotourism particularly evident in all mangrove forest reserves.

*vi) National Land Use Planning Commission (NLUPC):* The NLUPC is implementing restoration through support for village land use plans in collaboration with various stakeholders such as the VPO, TFS, and others. The NLUPC has called for their involvement in the process, given the role of villages in land and forest issues in Tanzania. For example, as of 2017, only 13.9% of villages (1,741 villages) have land use plans.

*vii) Department of Forestry Development of Zanzibar:* The department is working with several local (e.g., ZACCA) and international partners (e.g., WCS) to restore coral rag and mangrove areas in Zanzibar.

*viii) Zanzibar Civil Society Alliance on Climate Change (ZACCA):* ZACCA has implemented several restoration projects, including: enhancing mangrove restoration in South Unguja, North Unguja, Chakechake, Micheweni, and Mkoani District of Pemba (2016); strengthening the capacity of community groups on climate-smart agriculture technologies (2016–2017); raising awareness on community forest management (2015); and promoting civil society engagement in climate change governance and accountability in Zanzibar (2017).

*ix) Wildlife Conservation Society (WCS):* WCS works with government nature reserves in the Southern Highlands, including Kalambo and the Rungwe Mountains. It's support includes tree planting to restore degraded land and water catchment areas.

*x) World Wide Fund for Nature (WWF):* WWF has supported restoration efforts in Tanzania and beyond since the early 2000s. More recently, it has focused on restoring nature forest reserves such as Pugu, Vikindu, and Kazimzumbwi. WWF has also supported the government in accessing large-scale funding for restoration in both mainland Tanzania and Zanzibar through the Trillion Trees Programme, in partnership with the Wildlife Conservation Society (WCS). Additionally, WWF has supported the Greening Dodoma initiative in collaboration with TFS and the Vodacom Foundation.

*xi) Wetlands International:* Wetlands International supports the restoration of 53,255 hectares of mangroves in the Rufiji Delta through planting and natural regeneration.

## 2.4 Restoration Challenges

### 2.4.1 General challenges

It is not easy to stop a vicious cycle of degradation caused by over-exploitation of natural resources and replace it with a virtuous cycle of Forest Landscape Restoration (FLR). Challenges include how to ensure meaningful participation by marginalized stakeholders, as FLR is:

*i) Time consuming:* Trees take time to grow and engaging diverse stakeholders is time-consuming. Stakeholders need opportunities to learn about each other and to discuss, negotiate and agree on different aspects of FLR. These include priorities, boundaries, budgets, roles and responsibilities. FLR also touches upon deep-rooted, sensitive issues, such as land rights and tenure, land-use planning, illegal logging and wildlife hunting. These issues require a much longer process.

*ii) Costly:* There are considerable direct costs associated with coordination, stakeholder engagement and implementation of FLR interventions. There are also costs of foregone opportunities, such as those related to reduced harvests or income lost as result of changing from the existing land use.

*iii) Unfair:* The general benefits of FLR will be enjoyed by landscape stakeholders and other indirect groups. However, poor people and other marginalized groups will be more deeply affected by the immediate restrictions in resource access and use that result from FLR. This could put the success of FLR in peril. Early and careful calculation of costs and benefits for each group, especially the most marginalized groups, should be carefully studied<sup>20</sup>.

*iv) Producing unquantifiable goods and services:* The Economics of Restoration<sup>21</sup> states that economic tools can help quantify non-monetary benefits and costs, Also' many ecosystem goods and services are not amenable to market valuation despite their indisputable ecological or social values. This poses an enormous challenge in discussions and negotiations among stakeholders who decide FLR priorities.

*v) Resulting to conflicting views:* Interest-based conflicts among stakeholder groups are almost unavoidable during FLR processes. The Government may pursue ecological and environmental gains, while local communities prioritize economic targets. Trade-offs are inevitable. It is therefore crucial to facilitate negotiations and resolve conflicts, ideally with a neutral moderator.

### 2.4.2 Specific FLR challenges for Tanzania

In addition to the general challenges, the following key factors contribute to making FLR process in Tanzania more challenging:

*i) Unsustainable Livestock Management Practices:* Land, water and rangelands are the main resources which support the livestock production system in the country. However, only 40% of the rangeland is currently available for livestock grazing. The continued shrinking of grazing land due to population pressure and conversion of traditional grazing areas to other land uses greatly constrains the sustainability of extensive livestock production system. Additionally, conflicts between farmers and pastoralists in search of pastures, water, and areas for crop production have been a persistent problem in many regions and districts. Experience shows that uncontrolled grazing in both urban and rural areas is a major factor responsible for destruction of forests, planted trees, and restored areas. As opposed to crop production, livestock require vast areas for grazing, highlighting the need to improve livestock facilities in pastoral designated areas of village land use plans and adopting landscape approaches. This initiative may require improving pasture and grazing management. However, livestock movements from one area to another (within or outside the villages/districts/regions) searching for water and pasture as well as for trading purposes is inevitable. These movements may result in destruction of the planted trees as well as the restored land.

*ii) Inadequate Coordination of Environmental best Practices:* Land use and other development activities are important but the concern is on how best people can use land sustainably. There are various best practices in the country based on the sectors such as Agriculture, Forestry, Water, Livestock, Fisheries, Wildlife and Energy. These practices include Integrated Soil fertility management, conservation agriculture, rain water harvesting, and smallholder irrigation management, cross slope barriers, agroforestry, pastoralism and rangeland Management, Sustainable Forest Management (SFM), and Income Generating Activities (IGAs). Currently, the implementation of these best practices from various sectors is not adequately coordinated. Proper coordination of these best practices will help address forest and land degradation challenges, including the protection of the restored lands and the planted areas.

*iii) Incidences of wildfires:* Wildfire is one of the most destructive agents for forests and other related ecosystems. Efforts to control incidences of wildfire will contribute significantly in preventing the destruction of the planted trees as well as the restored lands.

*iv) Inadequate compliance to relevant legislations:* Existing legislations need to be adhered to safeguard forests and planted trees in all land types. Purposeful initiatives by decision makers are required to facilitate execution of voluntary and/or forced compliance to laws and regulations to attain tree planting goals.

*v) Inadequate incentives for tree planting and management:* Incentives to the participating communities, institutions and other stakeholders are very essential to ensure that the trees are planted and sustainably managed. Through these incentives, the public will be sensitized to increase their efforts and continue improving the environment. The idea behind these initiatives is to;

- a) Recognize efforts and contributions of the society or groups involved in planting and managing trees;
- b) Sensitize the public to recognize the importance of planting and managing trees;
- c) Motivate the public to effectively participate in tree planting and management;
- d) Increase responsibility of various stakeholders in the issues pertaining to planting and management of trees; and
- e) Widen the scope of public participation and responsibility to plant and manage trees.

*vi) Unsustainable human activities in vulnerable areas:* Mountain ecosystems provide vital environmental services, including freshwater, biodiversity, and other benefits essential to human well-being worldwide. They are critical for sustainable national development, poverty alleviation, and the transition to a green economy. However, recent environmental, economic, and social changes have made many mountain regions increasingly prone to disasters. Degradation caused by unsustainable agricultural practices, livestock overgrazing, and timber harvesting has great downstream impacts, affecting millions of people through reduced hydropower generation, diminished ecosystem services, and lower crop and livestock productivity.

*vii) Unsuitable tree species in water catchments:* Planting high water consuming tree species in water catchment areas can reduce water availability. Therefore, it is important to prioritize the use of water-conserving tree species in these areas. Identifying and prohibiting the planting of unsuitable species near water sources is highly recommended. Promoting appropriate, water efficient tree species is one of the most effective strategies for sustainable restoration in catchment zones.

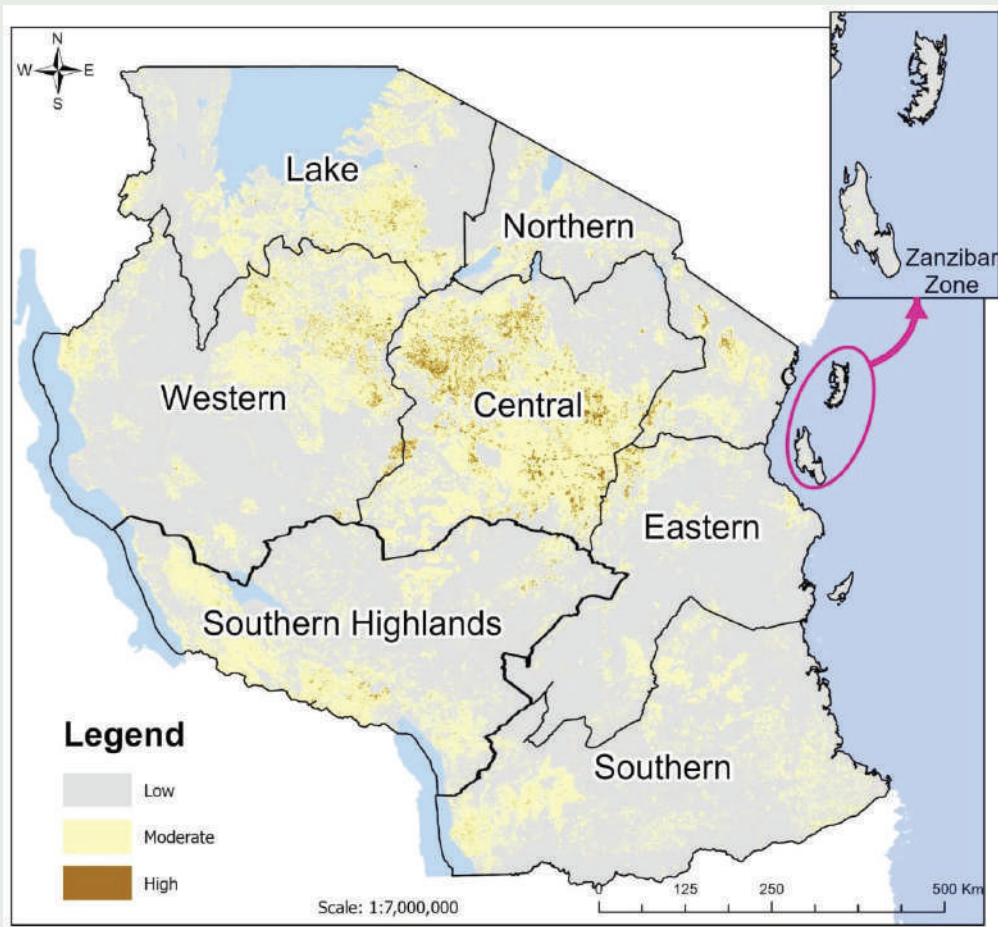
*viii) Inadequate use of alternatives to wood-based energy sources and building materials:* The lack of alternative and reliable sources of energy for cooking, lighting, and building materials in Tanzania places tremendous pressure on forest resources, due to the heavy reliance on biomass for energy and on timber and poles for construction. Biomass accounts for about 90% of all cooking energy sources in the country. Charcoal is predominantly used in urban areas, while firewood is commonly used in rural areas. It is estimated that the per capita consumption of wood fuel in Tanzania is one cubic metre per year amounting to approximately 50 million stacked cubic metres consumed annually for energy alone. Moreover, traditional charcoal production, which relies on inefficient kilns, has contributed significantly to deforestation, environmental degradation, and land degradation. The demand for charcoal is expected to rise further in the coming years due to rapid population growth.

*ix) Shifting Cultivation:* Shifting cultivation is one of the main subsistence activities of small- scale societies and rural populations. Shifting cultivation, especially through conversion in which native forests/vegetation are cleared, ends in deforestation. In this case, initiatives to promote improved agriculture and livestock practices such as mixed farming, agroforestry and zero grazing - are necessary. In addition, measures to discourage shifting cultivation practices should be implemented while encouraging farmers in these areas to adopt agroforestry.

## 2.5 Restoration Opportunities

To restore the 5.2 million hectares pledged by Tanzania as a contribution to AFR100 which accounts for 42% of the highly degraded areas. Restoration opportunities were mapped based on national restoration objectives. These objectives include enhancing climate resilience, conserving biological diversity, ensuring gender equity and equality, improving food security, alleviating poverty, enhancing water yield, and increasing energy resources.

Zones identified with the most optimal areas for restoration include the Central Zone (covering Dodoma, Manyara, and Singida regions) at 38%, the Western Zone (covering Katavi, Kigoma, Shinyanga, and Tabora regions) at 19%, and the Southern Highlands (covering Iringa, Mbeya, Njombe, Rukwa, and Songwe regions) at 14% all in mainland Tanzania (Figure 5; Table 3)



**Figure 5.** Spatial distribution of restoration opportunities in Tanzania

**Table 3:** Restoration opportunities per restoration objective in hectare.

FLR Zone	Water yield	Food security	Poverty	Gender	Climate Change	Biomass energy	Biodiversity conservation	Total
Central	229289	169489	689563	6984	758539	87,011	13,468	<b>1,954,343</b>
Eastern	6769	36040	115881	3248	63989	20,067	8,070	<b>254,062</b>
Lake	22769	150718	208644	11261	169675	51,086	2,117	<b>616,270</b>
Northern	13343	33479	87674	2739	145148	19,352	7,934	<b>309,669</b>
Southern	88	28226	211983	2275	48878	22,732	2,923	<b>317,105</b>
Southern highlands	11585	116544	354769	5992	166412	58,196	9,058	<b>722,556</b>
Western	33095	205414	463462	8818	139450	12,5015	9,740	<b>984,994</b>
Zanzibar	725	1220	2220	1105	2855	6,210	10,855	<b>25,190</b>
<b>Total</b>	<b>317,663</b>	<b>741,129</b>	<b>2,134,196</b>	<b>42,420</b>	<b>1,494,947</b>	<b>389,669</b>	<b>64,165</b>	<b>5,184,190</b>

Source: ROAM report (2021)

## CHAPTER THREE

### 3.0 STRATEGIC INTERVENTIONS AND ACTION PLAN

#### 3.1 Vision, Mission and Goal

##### 3.1.1 Vision

To revitalize Tanzania's degraded lands, thereby enhancing ecological integrity and human well-being.

##### 3.1.2 Mission

To integrate forest landscape restoration into national development plans to promote environmental sustainability, drive economic growth, and enhance food security in Tanzania.

##### 3.1.3 Goal

To restore 5.2 million hectares of degraded land in Tanzania.

##### 3.1.4 Expected results

The Forest Landscape Restoration (FLR) Strategy is expected to achieve the following results:

*i) Increased climate resilience:*

- a) Restore soil fertility to boost yields, diversify farming systems and facilitate adaptation of farmers to erratic weather patterns
- b) Reduce landslide risks, reduce consequences of flooding/extreme weather events
- c) Support ecosystem-based adaptation
- d) Reduce GHG emissions from agriculture
- e) Increase carbon sequestration

*ii) Improved food security:*

- a) Reduce soil and nutrient loss, restore soil organic matter content, increase and diversify crop yields and cultivars, enable more efficient use of inorganic inputs.
- b) Increase rural access to and availability of food by increasing the production of timber, fuel-wood, fodder, honey, mushrooms, and other non-timber forest products that directly or indirectly contribute as alternative sources of income to the food security of rural communities.

*iii) Increased energy resources:*

- a) Increase supplies of locally managed and sustainable sources of fuelwood
- b) Decrease sedimentation in catchments of hydropower infrastructure to boost energy outputs

*iv) Increased water yield:*

- a) Control erosion and reduce sedimentation
- b) Protect and conserve water sources

*v) Conserved biodiversity:*

- a) Conserve and restore biodiversity
- b) Protect, accelerate regeneration, and restore native ecosystems and threatened species across landscapes
- c) Protect ecosystems and ecological functions

*vi) Ensured gender equity and equality:*

- a) Promote equity ownership of means of productions among women, men and youth
- b) Promote agricultural/forestry education, extension and technical training for women, men and youth
- c) Facilitate access to finance for women, men and youth in agriculture and forestry.

*vii) Reduced poverty:*

- a) Enhance sustainable management of land and water resources  
Strengthen coordination between agriculture, forestry, and other relevant sectors.
- b) Strengthen value chains to forestry and agricultural products and entrepreneurship
- c) Introduce other sustainable income generating activities

### **3.2 Priority Interventions**

This strategy targets the restoration opportunities identified in Section 2.5. The spatial distribution of restoration activities across different zones is complementary, allowing for a variety of landscape restoration approaches.

These diverse approaches address the drivers of degradation while also creating synergies that deliver benefits across key thematic areas: ecosystem services; forests, biomass energy, and wildlife; agriculture; land and water; and livestock and fisheries. The interventions outlined in this strategy fall within these thematic areas.

### **3.2.1 Ecosystem Services**

Tanzania has significant potential to benefit from ecosystem service incentives, including the implementation of Payment for Ecosystem Services (PES) programmes in the Eastern Arc Mountains, as well as carbon credits, ecotourism, biodiversity offsets, and international funding through the protection and management of forests such as mangroves, montane forests, and miombo woodlands.

#### **Intervention 1: Promoting Incentives for Ecosystem Services (IES)**

##### **Intervention Description**

In Tanzania, the loss of forests and land degradation is driven by weak conservation practices, unsustainable land use, and limited financial benefits from maintaining healthy ecosystems. For many farmers and land users, there's little economic motivation to adopt restoration-friendly practices. To reverse this trend, targeted incentives are essential to support the adoption of sustainable land and forest management. These incentives can help improve agricultural and livestock productivity, reduce deforestation, and prevent encroachment into protected areas.

Effective Forest Landscape Restoration (FLR) requires enabling policies that recognize and empower local communities as stewards of the land. The government should identify and prioritize areas for restoration, clarify land use rights and responsibilities, and establish fair systems for sharing the benefits that come from healthy ecosystems.

Incentives may include payments for ecosystem services, where communities are compensated for conservation actions that enhance water availability, carbon storage, and biodiversity. Additional measures involve supporting soil fertility and sustainable agriculture techniques, investing in waste management infrastructure to reduce land degradation, and ensuring secure land tenure to encourage long-term restoration and responsible resource use.

To ensure these incentives are effective, restoration funds must be accessible and inclusive especially for smallholders and local communities. Currently, barriers such as lack of information, complex application processes, bureaucratic paperwork, and restrictive eligibility rules limit access. Overcoming these challenges is crucial to enabling large scale, community-driven restoration that delivers both environmental and livelihood benefits (Appendix 1).

***Intervention 1:*** *contributes to climate resilience, water yield, and poverty alleviation strategic objectives.*

### **3.2.2 Forest, Biomass Energy and Wildlife Restoration**

#### **a) Forest Restoration**

***Intervention 2:*** *Forest management (including protection of existing forest, natural forest management and improved forest plantation or woodlands management).*

#### **Intervention description**

Land degradation in Tanzania is fueled by several interlinked factors, including inadequate planning for population growth, persistent poverty, climate change, and the growing global demand for timber and non-timber forest products. These pressures have led to widespread ecosystem degradation, threatening both environmental integrity and community livelihoods.

To reverse these impacts, it is crucial to invest in the restoration of degraded, damaged, or destroyed forest landscapes. Restoration plays a vital role in rebuilding ecosystem functions by repairing degraded lands, re-establishing native vegetation and wildlife, and, where full recovery is not feasible, creating new, functional ecosystems that continue to deliver essential ecological services.

Tanzania has already demonstrated success in this area through initiatives such as Hifadhi Ardhi Shinyanga (HASHI), Hifadhi Ardhi Iringa (HIMA), and Hifadhi Ardhi Dodoma (HADO). These programs offer valuable lessons and are widely recognized as best practices in forest landscape restoration and natural regeneration.

The overarching goal of such restoration efforts is to enhance biodiversity, improve ecosystem resilience, and support sustainable livelihoods. Achieving this requires setting clear ecological targets, implementing strategic

management practices, and continuously monitoring progress to ensure long-term environmental and social benefits potential areas for biodiversity conservation identified through Tanzania’s ROAM (Restoration Opportunities Assessment Methodology) process are listed in Table 4.

**Table 4:** Restoration opportunities for Biodiversity conservation

Objective	Zones	Total Opportunity (ha)	Potential Opportunity (%)	Districts
<b>Biodiversity conservation improved</b> <b>(64165 ha)</b>	Central	13,468	21	Bahi, Chamwino, Chemba, Kondoa, Kongwa, Mpwapwa, Babati, Hanang, Kiteto, Mbulu, Simanjiro, Ikungi, Iramba, Itigi, Manyoni.
	Eastern	8,070	13	Ilala, Kigamboni, Kilombero, Kilosa, Morogoro, Mvomero, Ulanga, Kibaha, Kisarawe, Mkuranga, Rufiji, Chalinze, Gairo, Malinyi, Bagamoyo, Temeke, Ubungo, Kibiti.
	Lake	2,117	3	Bukombe, Chato, Geita, Mbogwe, Nyang'hwale, Biharamulo, Bukoba, Kyerwa, Misenyi, Muleba, Ngara, Butiama, Bunda, Musoma, Rorya, Serengeti, Tarime, Ilemela, Kwimba, Magu, Misungwi, Nyamagana, Sengerema, Ukerewe, Busega, Itilima, Maswa, Meatu, Karagwe, Bariadi, Buchosa.
	Northern	7,934	12	Arumeru, Arusha, Karatu, Longido, Monduli, Ngorongoro, Hai, Moshi, Mwanga, Rombo, Same, Siha, Handeni, Kilindi, Korogwe, Lushoto, Mkinga, Pangani, Muheza.
	Southern	2,923	5	Kilwa, Lindi, Liwale, Nachingwea, Ruangwa, Masasi, Mtwara, Nanyumbu, Newala, Tandahimba, Mbinga, Namtumbo, Nyasa, Songea, Tunduru, Madaba
	Southern Highland	9,058	14	Iringa, Kilolo, Mufindi, Chunya, Ileje, Kyela, Mbarali, Mbeya, Mbozi, Momba, Rungwe, Ludewa, Makete, Njombe, Wanging'ombe, Kalambo, Nkasi, Sumbawanga, Songwe.
	Western	9,740	15	Mlele, Mpanda, Buhigwe, Kakonko, Kibondo, Kigoma, Uvinza, Kishapu, Shinyanga, Igunga, Kaliua, Nzega, Sikonge, Tabora, Urambo, Uyui, Kahama, Kasulu, Mpimbwe
	Zanzibar	10,855	17	Mkoani, Central, South, West B, North B, Chakechake, Micheweni, North B

**Intervention 2** contributes to climate resilience, water yield, poverty alleviation, energy resources, and biodiversity conservation strategic objectives.

## **b) Biomass Energy**

### ***Intervention 3: Promote the use of alternative energy sources***

Tanzania has a wide range of alternative energy resources, including biomass, hydropower, geothermal, solar, and wind. However, much of this potential remains underutilized. Expanding the use of these clean and environmentally friendly energy sources can help increase access to sustainable and modern energy services. Promoting alternative energy technologies also supports Forest Landscape Restoration (FLR) by reducing pressure on natural forests for fuelwood.

#### **Intervention description**

In Tanzania, woodfuel remains the dominant source of biomass energy, widely used for household cooking, tobacco curing, brick making, and drying tea leaves. Although national energy policies and poverty reduction strategies aim to reduce this reliance by promoting cleaner fuels and improving energy efficiency, progress has been limited. Without stronger and more coordinated action, the country is likely to remain heavily dependent on biomass energy.

Shifting toward more sustainable energy use requires a combination of strategic and integrated interventions. Promoting alternative cooking fuels particularly Liquefied Petroleum Gas (LPG) for household use can significantly reduce charcoal consumption. This shift must be supported by public awareness campaigns and targeted marketing that encourage adoption of cleaner fuels, especially when these alternatives are compatible with existing cooking technologies.

Simultaneously, improving the sustainability of biomass energy calls for enhanced efficiency in both production and consumption. Expanding access to appropriate and affordable alternative energy sources will reinforce this transition. These efforts must be anchored in strong institutional frameworks and effective policy implementation to ensure a smooth, inclusive, and long-term energy shift.

On the production side, promoting cleaner technologies for charcoal production and the widespread use of energy-efficient stoves will help reduce woodfuel consumption. Supporting income-generating activities for communities engaged in energy production and distribution will further strengthen local involvement and benefits.

In parallel, establishing accessible and attractive financing mechanisms is critical to making sustainable energy solutions affordable and scalable across different regions and income levels.

Potential areas for improved wood fuel identified through Tanzania’s ROAM (Restoration Opportunities Assessment Methodology) process are listed in Table 5

**Table 5:** Restoration opportunities for Biomass energy

Objective	Zones	Total Opportunity (ha)	Potential Opportunity (%)	Districts
<b>Biomass energy Improved (389,669 ha)</b>	Central	87,011	22	Bahi, Chamwino, Chemba, Kondo, Kongwa, Mpwapwa, Babati, Hanang, Kiteto, Mbulu, Simanjiro, Ikungi, Iramba, Itigi, Manyoni.
	Eastern	20,067	5	Ilala, Kigamboni, Kilombero, Kilosa, Morogoro, Mvomero, Ulanga, Kibaha, Kisarawe, Mkuranga, Rufiji, Chalinze, Gairo, Malinyi, Bagamoyo, Temeke, Ubungo, Kibiti.
	Lake	51,086	13	Bukombe, Chato, Geita, Mbogwe, Nyang'hwale, Biharamulo, Bukoba, Kyerwa, Missenyi, Muleba, Ngara, Butiama, Bunda, Musoma, Rorya, Serengeti, Tarime, Ilemela, Kwimba, Magu, Misungwi, Nyamagana, Sengerema, Ukerewe, Busega, Itilima, Maswa, Meatu, Karagwe, Bariadi, Buchosa.
	Northern	19,352	5	Arumeru, Arusha, Karatu, Longido, Monduli, Ngorongoro, Hai, Moshi, Mwanga, Rombo, Same, Siha, Handeni, Kilindi, Korogwe, Lushoto, Mkinga, Pangani, Muheza.
	Southern	22,732	6	Kilwa, Lindi, Liwale, Nachingwea, Ruangwa, Masasi, Mtwara, Nanyumbu, Newala, Tandahimba, Mbinga, Namtumbo, Nyasa, Songea, Tunduru, Madaba
	Southern Highland	54,196	15	Iringa, Kilolo, Mufindi, Chunya, Ileje, Kyela, Mbarali, Mbeya, Mbozi, Momba, Rungwe, Ludewa, Makete, Njombe, Wanging'ombe, Kalambo, Nkasi, Sumbawanga, Songwe.
	Western	125,015	32	Mlele, Mpanda, Buhigwe, Kakonko, Kibondo, Kigoma, Uvinza, Kishapu, Shinyanga, Igunga, Kaliua, Nzega, Sikonge, Tabora, Urambo, Uyui, Kahama, Kasulu, Mpimbwe
	Zanzibar	6,210	2	Mkoani, Central, South, West B, North B, Chakechake, Micheweni, North B

**Intervention 3** contributes to climate resilience, water yield, poverty alleviation, energy resources, gender equity and equality and biodiversity conservation strategic objectives.

## c) Wildlife Restoration

### *Intervention 4: Habitat connectivity*

#### **Intervention description**

Habitat loss, fragmentation, and intensive land use have greatly reduced ecosystem productivity, leading to species loss, disrupted natural processes, and declining ecosystem services. Restoring these areas is crucial for recovering ecological functions and supporting both wildlife and human livelihoods.

Restoration efforts will focus on planting native trees to stabilize soils and prevent erosion, collecting and cultivating seeds, and improving seedling survival and growth. These actions will help restore habitat structure, diversity, and resilience.

Wildlife restoration will aim to reintroduce healthy animal populations and restore their role in ecosystems. This process will ensure the protection of source populations, identify suitable and sustainable release sites, involve local communities, and continuously monitor progress to ensure success. Results will be transparently shared with all stakeholders.

In areas severely degraded with limited natural regeneration, two approaches will be used: Passive restoration to encourage natural regrowth through assisted natural regeneration (ANR), and active restoration, which involves direct seeding or tree planting to speed up recovery.

Wildlife habitat restoration will align with Tanzania's Restoration Opportunities Assessment Methodology (ROAM), ensuring a comprehensive approach to restoring both forest ecosystems and the landscapes that support biodiversity and human communities.

*Intervention 4 contributes to climate resilience and biodiversity conservation strategic objectives*

### **3.2.3 Agriculture**

#### **Intervention 5: Climate Smart Agriculture**

#### **Intervention description**

Climate-Smart Agriculture (CSA) is an approach aimed at making agriculture more resilient to climate change while ensuring food security and sustainable development. Its goals are to increase agricultural productivity and income, enhance climate resilience, and reduce greenhouse gas emissions.

In Tanzania, two key CSA practices are Conservation Agriculture (CA) and Agroforestry, both of which improve productivity while preserving the environment. CA focuses on soil and crop management practices that minimize soil disturbance and promote biodiversity. It has proven to boost crop yields sustainably by minimizing mechanical soil disturbance, maintaining continuous soil cover, and using crop rotations that include legumes and trees to enhance soil fertility.

Agroforestry integrates trees with crops or livestock within the same land area, either simultaneously or over time, to improve land productivity and ecological health. Tanzania has a long-standing tradition of agroforestry, with notable examples such as the Chagga home gardens in the northeast, Kagera and Mara home gardens in the northwest, Usambara domestication systems in the northeast, and the Sukuma “Ngitili” silvopastoral system in the west. These systems replicate natural ecosystems by using multi-layered planting to promote biodiversity, conserve soil, and support sustainable livelihoods

The Second National Agroforestry Strategy (2024 - 2031) builds on this foundation, aiming to integrate sustainable agroforestry practices into 15 million households by 2030. The strategy supports national goals of enhancing food security, increasing incomes, and promoting environmental conservation.

By combining conservation agriculture and agroforestry under the CSA umbrella, Tanzania is paving the way for a resilient agricultural sector that meets both present and future needs.

Potential areas to improve food security identified through Tanzania’s ROAM (Restoration Opportunities Assessment Methodology) process are listed in Table 6.

**Table 6:** Potential Restoration opportunities for food security

Objective	Zones	Total Opportunity (ha)	Potential Opportunity (%)	Districts
<b>Food Security (741,129 ha)</b>	Central	169,489	23	Bahi, Chamwino, Chemba, Kondoa, Kongwa, Mpwapwa, Babati, Hanang, Kiteto, Mbulu, Simanjiro, Ikungi, Iramba, Itigi, Manyoni.
	Eastern	36,040	5	Ilala, Kigamboni, Kilombero, Kilosa, Morogoro, Mvomero, Ulanga, Kibaha, Kisarawe, Mkuranga, Rufiji, Chalinze, Gairo, Malinyi, Bagamoyo, Temeke, Ubungo, Kibiti.
	Lake	150,718	20	Bukombe, Chato, Geita, Mbogwe, Nyang'hwale, Biharamulo, Bukoba, Kyerwa, Missenyi, Muleba, Ngara, Butiama, Bunda, Musoma, Rorya, Serengeti, Tarime, Ilemela, Kwimba, Magu, Misungwi, Nyamagana, Sengerema, Ukerewe, Busega, Itilima, Maswa, Meatu, Karagwe, Bariadi, Buchosa.
	Northern	33,479	4	Arumeru, Arusha, Karatu, Longido, Monduli, Ngorongoro, Hai, Moshi, Mwanga, Rombo, Same, Siha, Handeni, Kilindi, Korogwe, Lushoto, Mkinga, Pangani, Muheza.
	Southern	28,226	4	Kilwa, Lindi, Liwale, Nachingwea, Ruangwa, Masasi, Mtwara, Nanyumbu, Newala, Tandahimba, Mbinga, Namtumbo, Nyasa, Songea, Tunduru, Madaba
	Southern Highland	54,196	16	Iringa, Kilolo, Mufindi, Chunya, Ileje, Kyela, Mbarali, Mbeya, Mbozi, Momba, Rungwe, Ludewa, Makete, Njombe, Wanging'ombe, Kalambo, Nkasi, Sumbawanga, Songwe.
	Western	205,414	28	Mlele, Mpanda, Buhigwe, Kakonko, Kibondo, Kigoma, Uvinza, Kishapu, Shinyanga, Igunga, Kaliua, Nzega, Sikonge, Tabora, Urambo, Uyui, Kahama, Kasulu, Mpimbwe
	Zanzibar	1,220	0	Mkoani, Central, South, West B, North B, Chakechake, Micheweni, North B

**Intervention 5** contributes to food security, climate resilience, poverty alleviation, energy resources, and gender equity and equality strategic objectives

### 3.2.4 Land and Water

**Intervention 6** : Soil and water conservation practices such as community check dams, water reservoirs, gully plugs.

### **Intervention description**

Since 80% of Tanzanians depend on agriculture that relies on natural rainfall, the country faces a growing risk of reduced water yields potentially leading to increased poverty if current trends continue. To build resilience in soil and water use, especially in affected areas, a combination of engineering, social, administrative, and research and development strategies should be implemented to support effective restoration.

Land and soil conservation interventions include agroforestry practices, community-based forest management through the establishment of village, private, and individual forests, and the introduction of improved farming techniques such as climate-smart agriculture. These efforts are complemented by awareness creation to support land use planning, the management of invasive species, the construction of check dams, and improved soil moisture management. Furthermore, promoting the engagement of women and youth in restoration activities is key.

Effective land and soil conservation can significantly enhance food security and improve the livelihoods of communities within the targeted restoration landscapes (Appendix 2).

***Intervention 6** contributes to climate resilience, water yield, poverty alleviation, gender equity and equality and biodiversity conservation strategic objectives*

***Intervention 7: Integrated spatial land use planning and management***

### **Intervention description**

Land laws provide tools to manage and control land use; however, challenges remain. In urban areas, informal settlements leave little room for green development, while in rural areas, thousands of acres are being converted into uncontrolled woodlot blocks, farms, settlements, and areas of overgrazing often resulting in land degradation and conflicts. Integrated spatial land use planning and management serves as a critical tool to reduce the extent of land requiring reclamation and to ensure that restored areas are sustainably maintained for long-term landscape benefits (Appendix 3).

This intervention involves activities such as land use mapping, demarcation of areas under Government Notices (GNs), participatory land use planning, and the formalization of land tenure systems in both urban and rural settings.

It also includes capacity building in natural resource governance, focusing on land law enforcement, policy integration, and coordination across relevant sectors.

***Intervention 7** contributes to climate resilience, water yield, poverty alleviation, energy resources, gender equity and equality and biodiversity conservation strategic objectives*

**Intervention 8: Water catchment restoration**

**Intervention description**

The intervention includes activities such as the conservation of water catchment areas, restoration of riverbanks, promotion of agroforestry practices, and implementation of community-based forest management. Additionally, it involves the introduction of improved farming practices and techniques, establishment of vegetation buffer zones around water catchments, and soil erosion control measures. These efforts also support the adoption of sustainable energy technologies for heating and cooking, the establishment of cattle troughs, and the promotion of payment for ecosystem services through public-private partnerships (PPP). Strengthening law enforcement is also an integral component of this intervention.

***Intervention 8** contributes to climate resilience, water yield, poverty alleviation, energy resources, gender equity and equality and biodiversity conservation strategic objectives*

**Intervention 9: Mainstreaming Integrated water resources management**

**Intervention description**

This intervention aims to integrate Forest Landscape Restoration (FLR) principles into the sustainable management of water resources, ensuring the well-being of the population, supporting socioeconomic growth, conserving environmental vitality, and enhancing resilience to water-related disasters. By coordinating the planning and implementation of Integrated Water Resources Management (IWRM), this initiative will promote green, sustainable, inclusive, and resilient development. The intervention will focus on strengthening water user associations, developing water supply infrastructure, and creating water allocation plans, while also supporting the implementation of water resource management guidelines.

Furthermore, it will conduct comprehensive assessments of water resources and their distribution, ensuring that water management practices align with FLR objectives, such as restoring degraded lands, protecting ecosystems, and enhancing water catchment areas for long-term sustainability.

According to the ROAM report, 0.1% of the country has been identified as having low annual water yield. This is largely attributed to geographical factors, as most of these areas fall within semi-arid regions that experience high transpiration, high evaporation, and low precipitation. In addition, anthropogenic activities such as farming and overgrazing further contribute to the low availability of water in Tanzania. The ROAM report highlights potential areas for enhancing water yield, including the Central Zone (Dodoma, Manyara, and Singida), the Northern Zone (Arusha, Kilimanjaro, and Tanga), the Western Zone (Tabora and Shinyanga), and the Lake Zone (Mara, Mwanza, and Simiyu). (Table 7).

**Table 7:** Estimated low annual water yield in Tanzania

Zones	Low Annual Water Yield Area (Sq.km)	Per cent of Low Annual Water Yield Area (Sq.km)	Districts
Central	126669	51.02	Iramba, Kondoa, Mpwapwa, Singida, Kongwa, Manyoni, Chamwino, Singida Urban, Dodoma Urban, Ikungi, Bahi, Mkalama, Chemba, Babati, Hanang, Mbulu, Simanjiro, Kiteto
Northern	36328	14.63	Lushoto, Monduli, Rombo, Meru, Mwanga, Same, Moshi, Hai, Siha, Ngorongoro, Karatu, Korogwe, Arusha, Handeni, Kilindi, Longido
Southern highlands	35512	14.30	Chunya, Iringa, Mufindi, Wanging'ombe, Iringa Urban, Kilolo, Kwimba, Mbarali
Western	29470	11.87	Nzega, Shinyanga, Shinyanga Urban, Igunga, Kishapu, Uyui, Kahama, Sikonge,
Lake	17638	7.10	Bariadi, Itilima, Magu, Serengeti, Meatu, Bunda
Eastern	2482	1.00	Kilosa, Gairo
Southern	171	0.07	Nachingwea, Liwale, Maswa

**Intervention 9** contributes to climate resilience, water yield, poverty alleviation, energy resources, gender equity and equality and biodiversity conservation strategic objectives

### 3.2.5 Livestock & Fisheries

#### *Intervention 10: Improved Fisheries Systems*

##### **Intervention description**

An improved fisheries system is a key intervention for restoring ecosystem services, promoting sustainable conservation, and ensuring the responsible use of natural resources for the well-being of communities. Core activities include the restoration of fisheries breeding sites, development of fisheries value chains to curb overexploitation, and rehabilitation of coastal ecosystems, especially mangroves and seagrasses. The intervention also emphasizes the enforcement of land use plans, promotion of coastal ecotourism, and strengthening of community-based management of fisheries. Additional efforts involve supporting seaweed farming, enhancing salt mining practices, and raising community awareness on climate-smart approaches to natural resource use such as energy-efficient fish smoking, environmentally friendly construction materials, and alternative energy sources.

*Intervention 10 contributes to climate resilience, water yield, food security, poverty alleviation, energy resources, gender equity and equality and biodiversity conservation strategic objectives*

### 3.2.6 Cross-cutting issues

#### **a) Gender**

Integrating gender in forest landscape restoration (FLR) helps increase the involvement of women, youth, and vulnerable groups in planning and implementation. Currently, FLR is mostly led by men, while women and youth are often limited to basic roles like managing tree nurseries and planting trees. This strategy aims to promote gender equality and ensure that women, youth, and vulnerable groups are included at all stages of the FLR process.

*Intervention 11: Support women, youth and people with disabilities to participate effectively in forest landscape restoration planning and implementation*

### **b) Good governance**

Good governance helps FLR achieve its social, economic, and environmental goals. It ensures that FLR activities are well planned, implemented, and monitored. Good governance also promotes transparency, accountability, and fair sharing of benefits among all people involved.

***Intervention 12:** Strengthen transparency, accountability and rule of law in forest landscape restoration.*

### **3.3 Implementation Action Plan**

Landscape restoration is a key initiative in the United Republic of Tanzania for contributing to the Sustainable Development Goals. It supports job creation, increases income, enhances biodiversity conservation, and strengthens climate change mitigation and adaptation. To realize these outcomes, the implementation action plan (Table 8) plays a central role. The plan outlines thematic areas, specific objectives, corresponding strategies, targets, indicators, indicative budgets, timelines, means of verification, and responsible institutions. The provided cost estimates are based on past experience and literature; however, actual costs should be determined at the time of implementing specific interventions.

**Table 8: Forest Landscape Restoration Monitoring and Evaluation Plan**

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	<b>Forest</b>						
<b>Biodiversity conservation improved</b>	To enhance periodic forest ecosystems assessment and Monitoring	Forests ecosystems assessments conducted by 2033	<p>Percentage change of land cover</p> <p>Number of mapped areas and size</p> <p>Percentage of endemic, threatened and endangered species</p>	2023-2033	1,000,000	Forest ecosystem assessment reports	MNRT, MAINL-Zanzibar, TFS, TAFORI, LGAs, NGOs, private sector, research institutions, academia, media, communities
	To promote establishment of Woodlot and Natural regeneration	Woodlot and Natural regeneration promoted by 2030	Number, areas and size, types of species	2023-2033	2,500,000	Woodlot and natural regeneration reports	MNRT, MAINL-Zanzibar, TFS, TAFORI, LGAs, NGOs, private sector, academia, research institutions, media, communities
	To enhance biodiversity information systems	Biodiversity information systems enhanced by 2027	<p>Updated database</p> <p>Number of information pathways</p> <p>Number of awareness programs</p> <p>Data and information</p> <p>Accessible and utilized</p>	2023-2027	1,000,000	Functional biodiversity information system	MNRT, MAINL-Zanzibar, TANAPA, TAWA, TAWIRI, LGAs, NGOs, private sector, academia, research institutions, media, communities

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	To promote restoration and upgrading of unreserved forest ecosystems	Restoration and upgrading of unreserved forest ecosystems promoted by 2033.	Size and area Number of upgraded forests	2023-2033	2,000,000	Ecosystem restoration reports	MNRT, MAINL-Zanzibar, TFS, TAFORI, LGAs, NGOs, private sector, academia, research institutions, media, communities
	Strengthen and scale up of PFM best practice for FLR in unreserved and reserved forests	PFM best practice for FLR strengthened and scaled up by 2033	Number of villages with PFM Size and area Number of best practices	2023-2033	1,500,000	Participatory forest management reports Forest landscape restoration reports	VPO, PO-RALG, FVPO-Zanzibar, MNRT, MAINL-Zanzibar, TFS, TAFORI, LGAs, NGOs, private sector, academia, research institutions, media, communities
	To enhance research, innovation and dissemination of FLR best practice	Research, innovation for FLR best practice enhanced by 2033	Number of research Number of FLR best practice Number of innovations Number of research findings disseminated	2023-2033	500,000	FLR research reports	VPO, PO-RALG, FVPO-Zanzibar, MNRT, MAINL-Zanzibar, TFS, TAFORI, LGAs, NGOs, private sector, academia, research institutions, media, communities
<b>Wildlife</b>							
	Promote restoration and management of wildlife migratory corridors	Restoration and Management of wildlife increased by 2033	Number, size and areas of corridors	2023-2033	2,000,000	Wildlife corridor restoration reports	VPO, PO-RALG, FVPO-Zanzibar, MNRT, MAINL-Zanzibar, TANAPA, TAWA, TAWIRI, LGAs, NGOs, academia, research institutions, private sector, media communities
	Promote restoration and sustainable management water resources adjacent to wildlife areas	Water resources restored and sustainably managed by 2033	Number, size and types of resources	2023-2033	2,500,000	Water resources management reports Catchment restoration reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, MoWI, TANAPA, TAWA, TFS, Basin Authorities, LGAs, NGOs, academia, research institutions, private sector, media, communities
<b>Sub-total (1)</b>					<b>13,000,000</b>		

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
Improved energy security	Promote development and utilization of efficient energy technologies to reduce pressure on restored forest	Development and utilization of efficient energy technologies promoted by 2033	Number of users, number and types of technologies	2023-2033	3,000,000	Energy efficient promotion and adoption / usage reports	VPO, PO-RALG, FVPO-Zanzibar, ME, MNRT, MAINL-Zanzibar, TFS, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promote and strengthen FLR based energy sources and initiatives	Conservation based energy sources and tools strengthened and promoted by 2033	Number and types of Energy sources Number and types of users Number and types of initiatives	2023-2033	1,000,000	Energy efficient promotion and adoption / usage reports	VPO, FVPO-Zanzibar, PO-RALG, ME, MNRT, MAINL-Zanzibar, TFS, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promote efficient charcoal production and value addition technologies	Efficiency in charcoal production and value addition increased by 2033	Number of producers adopted in value addition Number of users	2023-2033	3,000,000	Charcoal production and value addition report	VPO, FVPO-Zanzibar, PO-RALG, ME, MNRT, MAINL-Zanzibar, TFS, LGAs, NGOs, academia, research institutions, private sector, media, communities
<b>Sub-total (2)</b>					<b>7,000,000</b>		
<b>Agriculture</b>							
Improved food security	Promote available restoration best practice for management of agricultural land	899,895 (Ha) of degraded agriculture land restored by 2033	Number and size restored land	2023-2033	2,000,000	Agricultural land restoration reports	VPO, FVPO-Zanzibar, PO-RALG, MoA, MNRT, MAINL-Zanzibar, MoWi, TFS, TARI, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promote restoration based efficient water use technologies in agriculture land	Efficient water technologies promoted by 2033	Number and types of irrigation technologies in place	2023-2033	2,000,000	Agricultural water use reports	VPO, PO-RALG, FVPO-Zanzibar, MoA, MNRT, MAINL-Zanzibar, MoWi, TFS, TARI, LGAs, NGOs, academia, research institutions, private sector, media, communities

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	Promote appropriate practices and technologies for value addition of agricultural produce	Practices and technologies for value addition promoted by 2033	Type and number of value chain technology and practices adopted Number of users	2023-2033	1,000,000	Agricultural sector value addition reports	VPO, FVPO-Zanzibar, PO-RALG, MoA, MIT, SIDO, VETA, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promote climate risk prediction and management mechanism in agriculture sector	Climate risk prediction and management mechanism in agriculture sector promoted by 2033	Number and types of Crop pest and diseases controlled	2023-2033	1,000,000	Climate prediction and management system	VPO, FVPO-Zanzibar, MoA, PO-RALG, LGAs, NGOs, academia, research institutions, private sector, media, communities
<b>Livestock</b>							
	Establishing and strengthening livestock infrastructures in priority landscapes	Livestock infrastructures established and strengthened by 2033	Number, size and type of infrastructures	2023-2033	3,000,000	Livestock infrastructure report	VPO, FVPO-Zanzibar, PO-RALG, MLF, TALIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promoting restoration and management of rangeland systems	Rangeland systems restored and managed by 2033	Number and size of rangelands Rangeland management plans	2023-2033	2,000,000	Rangeland restoration reports	VPO, FVPO-Zanzibar, PO-RALG, MLF, TALIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Strengthen mechanisms for controlling invasion of alien species	Mechanisms for controlling invasion of alien species strengthened by 2033	Type and number of identified species Mapped areas, size and area	2023-2033	1,000,000	Invasive species control report	VPO, FVPO-Zanzibar, PO-RALG, MLF, TFS, TAWA, TANAPA, TALIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promoting adoption of livestock keeping technologies and best practices for environmental sustainability	Livestock keeping technologies and best practices for environmental sustainability adopted by 2033	Type of technologies and best practices, number of users	2023-2033	2,000,000	Livestock sustainability reports	VPO, FVPO-Zanzibar, PO-RALG, MLF, TFS, TAWA, TANAPA, TALIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities

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Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	Strengthening systems for early warning and control of climate risks	Systems for early warning and control of climate risks strengthened by 2033	Types of systems Type and number of users Risk areas mapped	2023-2033	2,000,000	Climate early warning systems report	VPO, FVPO-Zanzibar, PO-RALG, MLF, TFS, TAWA, TANAPA, TALIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
<b>Fisheries</b>							
	Promoting and strengthening conservation of fisheries resources	Conservation of fisheries resources promoted and strengthened by 2033	Percentage of conserved fisheries resources, size and area	2023-2033	3,000,000	Fisheries resources conservation report	VPO, FVPO-Zanzibar, PO-RALG, MLF, MoWI, Basin Authorities, TAFIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promoting climate resilient aquaculture technologies	Climate resilient aquaculture technologies promoted by 2033	Type and number of technologies Percentage increase of aquaculture initiatives	2023-2033	2,000,000	Climate resilient aquaculture promotion and adoption / use report	VPO, FVPO-Zanzibar, PO-RALG, MLF, MoWI, Basin Authorities, TAFIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
	Promoting and strengthening the restoration and management of coastal and marine ecosystems	Restoration and management of coastal & marine ecosystems promoted and strengthened by 2033	Number and size of restored ecosystems Change in fisheries stocks	2023-2033	2,000,000	Coastal and marine restoration report	VPO, PO-RALG, FVPO-Zanzibar, MLF, MoWI, Basin Authorities, TAFIRI, LGAs, NGOs, academia, research institutions, private sector, media, communities
<b>Sub-total (3)</b>					<b>23,000,000</b>		
<b>Land and water</b>							
	Promote the adoption of technologies and practices for the improvement of soil fertility and water quality	Technologies and practices for improving soil fertility and water quality adopted by 2033	Type and number of technologies and practices Type and number of users	2023-2033	2,500,000	Sustainable soil-water practices promotion and adoption / use report	VPO, PO-RALG, FVPO-Zanzibar, MoA, MoWI, LGAs, NGOs, private sector, academia, research institutions, media, communities
<b>Soil and Water quality</b>							

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
Improved	Strengthen mechanisms for controlling and managing the use of agro-chemicals of agro-chemicals	Mechanisms for controlling and managing the use of agro-chemicals improved by 2033	Types of agro-chemicals used Water and soil quality	2023-2033	1,000,000	Agro-chemicals usage report	VPO, FVPO-Zanzibar, PO-RALG, MoA, MoWI, TPRI, NEMC, LGAs, NGOs, private sector, academia, research institutions, media, communities
	To develop and strengthen the implementation of land use plans	Land use plans developed and strengthened by 2033	Number of land use plans approved Number of title deeds issued	2023-2033	3,000,000	Land use planning report	VPO, PO-RALG, FVPO-Zanzibar, MLHS, NLUPC, LGAs, NGOs, private sector, academia, research institutions, media, communities
	To promote the control and management of invasive species	Invasive species controlled and managed by 2033	Types of invasive species Area and size Techniques used	2023-2033	1,000,000	Invasive species control report	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TAWA, TFS, TANAPA, LGAs, NGOs, private sector, academia, research institutions, media, communities
<b>Water sector</b>							
	Promote the identification, restoration and management of water catchments	47,276 ha of degraded water catchments restored and sustainably managed by 2033	Number, area and size of water catchments	2023-2033	2,000,000	Water catchment restoration reports	VPO, FVPO-Zanzibar, PO-RALG, MoWI, Basin Authorities, MNRT, MAINL-Zanzibar, TFS, NEMC, LGAs, NGOs, private sector, academia, research institutions, media, communities
	Strengthen mechanisms for the management of water sources	75,642 ha of water sources sustainably managed by 2033	Number, types and size of water sources	2023-2033	1,000,000	Water management plans and reports	VPO, FVPO-Zanzibar, PO-RALG, MoWI, Basin Authorities, MNRT, MAINL-Zanzibar, TFS, LGAs, NGOs, private sector, academia, research institutions, media, communities

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	Promote the adoption of rain water harvesting technologies	Appropriate rain water harvesting technologies adopted by 2033	Types of technologies Number of users Quantity of water harvested	2023-2033	3,000,000	Water harvesting reports	VPO, PO-RALG, FVPO-Zanzibar, MoWi, Basin Authorities, MNRT, MAINL-Zanzibar, TFS, LGAs, NGOs, private sector, academia, research institutions, media, communities
	Strengthening water quality management and control mechanisms	Water quality management and control mechanisms improved by 2033	Effluent discharge permit Water use permits	2023-2033	1,500,000	Water quality reports Water use reports	VPO, FVPO-Zanzibar, PO-RALG, MoWi, Basin Authorities, MNRT, MAINL-Zanzibar, TFS, NEMC, LGAs, NGOs, private sector, academia, research institutions, media, communities
<b>Mining</b>							
	Promote and strengthen sustainable mining technologies and practices for reducing degradation and pollution of the environment	Sustainable mining technologies and practices for reducing degradation and pollution of the environment promoted and strengthened by 2033	Types of technologies Number of users Number and types of mines	2023-2033	2,000,000	ESIA/EIA compliance reports Environmental audit /inspection reports	VPO, PO-RALG, FVPO-Zanzibar, MM, MoWi, Basin Authorities, MNRT, MAINL-Zanzibar, TFS, NEMC, LGAs, NGOs, private sector, academia, research institutions, media, communities
<b>Sub-total (4)</b>					<b>17,000,000</b>		

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	<b>Climate change resilience</b>						
	Promoting mainstreaming climate change issues in all sectoral programmes, strategies and action plans	Mainstreaming of climate change issues in all sectoral programmes, strategies and action plans promoted by 2033	Number and type of programmes, strategies and action plans	2023-2033	2,000,000	Climate mainstreaming report	VPO, FVPO-Zanzibar, PO-RALG, MoWi, MoA, MLF, MI, MNRT, MAINL-Zanzibar, NEMC, LGAs, NGOs, private sector, academia, research institutions, media, communities
	<b>Poverty alleviation</b>						
Cross cutting	Promoting the scale up of sustainable livelihoods options in target landscapes	Sustainable livelihoods options scaled up by 2033	Type and number of sustainable livelihood programs Number of beneficiaries	2023-2033	3,000,000	Household income report	VPO, FVPO-Zanzibar, PO-RALG, MoWi, MoA, MLF, MI, MNRT, MAINL-Zanzibar, LGAs, NGOs, private sector, academia, research institutions, media, communities
	Strengthening mechanisms for improving access to market and financial services	Mechanisms for improving access to market and financial services strengthened by 2033	Type and number of market and financial services Number of beneficiaries	2023-2033	1,500,000	Market and financial service access reports	VPO, FVPO-Zanzibar, PO-RALG, MoFP, MNRT, MAINL-Zanzibar, MoA, MLF, Fis, LGAs, NGOs, private sector, academia, research institutions, media, communities
	Promote programmes for value addition of timber and NTFPs	Programmes for value addition of timber and NTFPs promoted by 2033	Number of programmes Types and value of timber and NTFPs Number of beneficiaries	2023-2033	2,000,000	T&NTFPs value addition reports	VPO, FVPO-Zanzibar, PO-RALG, MoFP, MNRT, MAINL-Zanzibar, MoA, MLF, Fis, LGAs, SIDO, VETA, NGOs, private sector, academia, research institutions, media, communities
	<b>Gender</b>						
	Promote gender inclusive FLR initiatives	Gender inclusive FLR initiatives promoted by 2030	Type and number of initiatives Number of women and youth groups engaged	2023-2033	1,000,000	Gender/ FLR reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TFS, MoHCDGEC, LGAs, NGOs, private sector, academia, research institutions, media, communities

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	Promoting gender mainstreaming to all FLR programmes	Gender issues mainstreaming to all FLR programmes by 2033	Type and number of programmes Types of gender issues	2023-2033	1,000,000	Gender mainstreaming reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TFS, MoHCDGEC, LGAS, NGOs, private sector, academia, research institutions, media, communities
	Promote the integration of local knowledge in FLR initiatives	Local knowledge integrated in FLR initiatives by 2033	Type of local knowledge	2023-2033	750,000	Indigenous knowledge documentation and usage reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TFS, MoHCDGEC, COSTECH, LGAS, NGOs, private sector, academia, research institutions, media, communities
<b>Sectoral coordination</b>							
	Strengthening inter-sectoral collaboration and coordination at all level	Inter-sectoral collaboration and coordination strengthened by 2033	Joint meetings Joint operations Integrated plan	2023-2033	2,000,000	Partnership reports Stakeholder / sectoral coordination reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TSF, LGAS, NGOs, private sector, academia, research institutions, media, communities
<b>Awareness raising and capacity building</b>							
	Promoting awareness raising and capacity building on the implementation of FLR strategy	Awareness raising and capacity building promoted for the implementation of FLR strategy by 2033	Number of awareness programs Number of capacity building programs Information dissemination channels	2023-2033	1,500,000	Awareness and capacity building reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TSF, LGAS, NGOs, private sector, academia, research institutions, media, communities
<b>Research and innovation</b>							
	To promote research and innovation on FLR related sustainable water management	Research and innovation on FLR related sustainable water management promoted by 2033	Type and number of research and innovations	2023-2033	2,000,000	Research / innovation reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TSF, LGAS, NGOs, private sector, academia, research institutions, media, communities

Objective	Strategies	Targets	Indicators	Time frame	Budget (TZS in millions)	Means of Verification	Responsible Institutions
	<b>Law enforcement</b>						
	Strengthen mechanisms for the enforcement of FLR regulatory frameworks	Mechanisms for the enforcement of FLR related regulatory frameworks strengthened by 2033	Levels of compliance Prosecution trends	2023-2033	1,850,000	Law enforcement and court reports	VPO, FVPO-Zanzibar, PO-RALG, MNRT, MAINL-Zanzibar, TSF, LGAS, NGOs, private sector, academia, research institutions, media, communities
<b>Sub-total (5)</b>					<b>18,600,000</b>		
<b>Grand total</b>					<b>78,60000,000</b>		

## CHAPTER FOUR

### 4.0 IMPLEMENTATION AND INSTITUTIONAL ARRANGEMENTS

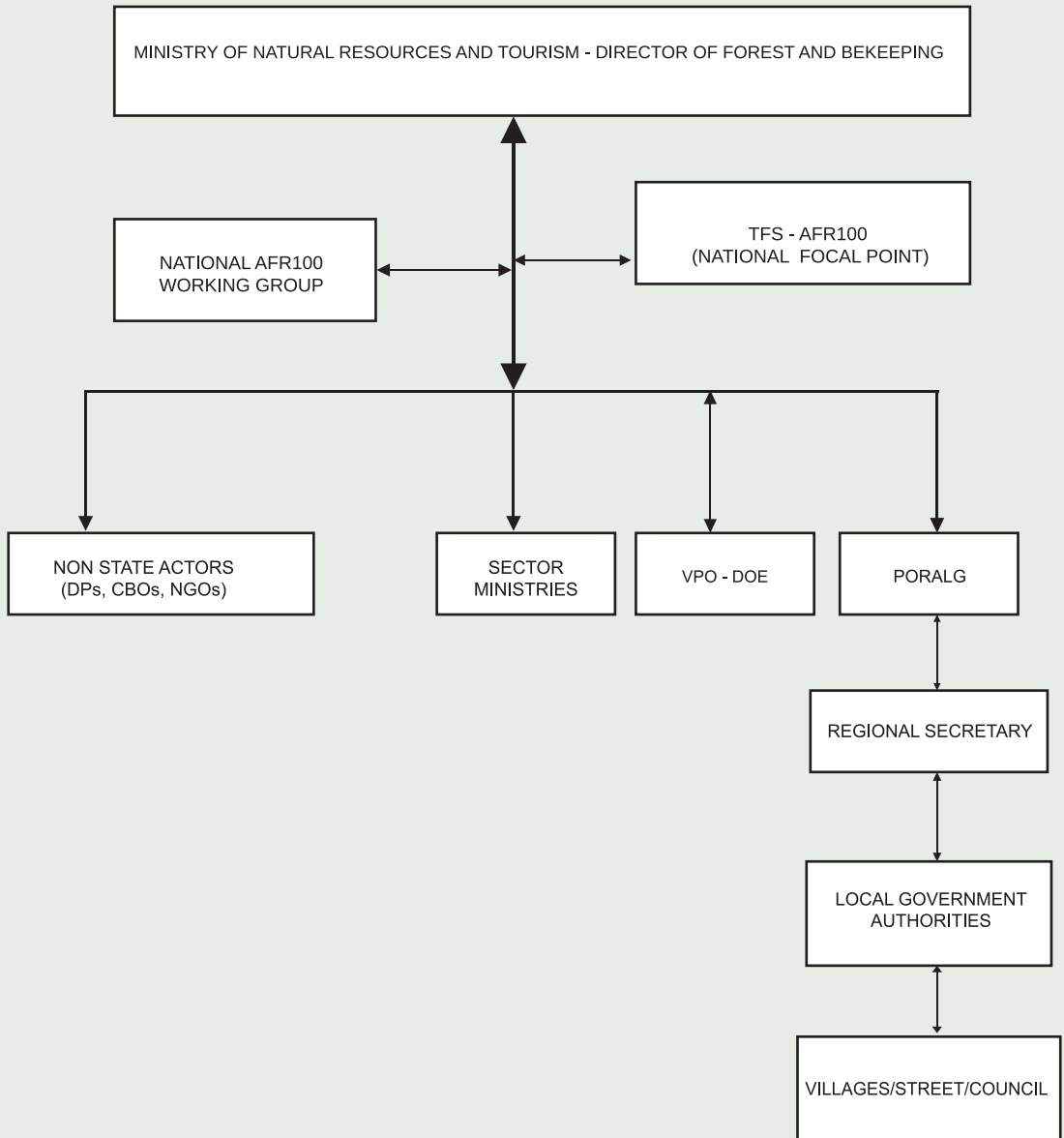
#### 4.1 Institutional Arrangement

A wide range of actors shall be responsible for the implementation of the Forest Landscape Restoration Strategy. The FLR will be implemented through sectoral Ministries and LGAs, Private sectors, NGOs, CBOs and communities. The sector Ministries and LGAs are required to mainstream FLR strategic interventions and subsequent targets in their respective sectoral policies and strategies.

Furthermore, cooperation among stakeholders at national, regional as well as international levels will be of paramount importance. The key actors include the Ministry responsible for the environment, relevant Sector Ministries from Mainland and Zanzibar, Regional Secretariats, Local Government Authorities, the National Environment Management Council (NEMC), the Department of Environment Zanzibar, the Department of Forestry and Non-Renewable Resources, and Tanzania Forest Fund. Other players include Development Partners, Academic and Research Institutions, International and Local Non-governmental organizations, the Private Sector, Civil Society Organizations, Media, and Local Communities.

#### 4.2 Coordination

The general implementation of this Strategy will be coordinated at the sector level (Figure 12) whereby the Ministry of Natural Resources and Tourism and the Ministry of Agriculture, Irrigation, Natural Resources, Livestock and Fisheries (MAINRLF) - Zanzibar will provide policy guidance throughout the implementation process of FLR. TFS and the Department of Forestry and Non-Renewable Resources in collaboration with other stakeholders will ensure effective implementation of FLR strategy. Institutional Framework ensure coordination across ministries, regional secretariats, villages, and non-state actors, fostering cohesive planning and adaptive implementation. This structure harmonizes national priorities, local action, and stakeholder partnerships to achieve FLR goals (Figure 12).



**Figure 12:** Institutional Framework for FLR strategy implementation in Tanzania

### **4.3 Information and communication**

To ensure effective communication for FLR, the strategy will use existing communication tools; television, radio, social media, newsletters, posters, exhibitions, workshops, and meetings to reach and engage the general public and promote FLR implementation. In addition, a new platform for sharing the experiences, updates, lessons, and progress of FLR with key actors will be formed.

A cross-sector communication unit comprising representatives from sectors involved in FLR implementation, will oversee media selection by analyzing factors like audience demographics, geographic reach, policy alignment and performance metrics. Messages will be tailored to address region-specific needs and strategic priorities, ensuring relevance and impact. Regular feedback and performance reviews will refine outreach approaches, fostering transparency and inclusivity.

### **4.4 Reporting Arrangement**

Tanzania Forest Services (TFS), as the national focal point for Forest Landscape Restoration (FLR), is responsible for compiling and reporting the country's FLR implementation status to the Ministry of Natural Resources and Tourism (MNRT). The MNRT then consolidates and transmits this information to the African Union Development Agency –NEPAD (AUDA-NEPAD), which serves as the continental coordinator for FLR efforts across Africa.

### **4.5 Resource Mobilization**

A resource mobilization plan shall be developed by the lead Ministry to ensure the effective implementation of FLR strategy. Successful financing of this strategy will require the mobilization of additional resources from the public and private sectors and development partners. Specifically, through contributions from various funding sources including Government budget, NEPAD contributions, private sector Partnerships, development Partners, international non-governmental organizations, bilateral Partners and Multilateral Development Banks, multilateral arrangements under the Bonn Challenge and Paris Agreement (i.e.funds from Climate change programmes).

Central and local government through their sector budgets and plans shall allocate substantial human, physical and financial resources within available means for the implementation of this strategy.

The resource estimates will be determined by the scope of work and approved activities of the strategy and Implementation Action Plan.

Sector Ministries, Government Agencies, International and Local Non-Government Organization, Private Sector, Local Communities, Civil Society Organizations and other actors will be required to mobilize resources for the implementation of FLR strategy.

#### **4.6 Monitoring and Evaluation**

Monitoring and evaluation (M&E) are essential for tracking the progress and effectiveness of the Forest Landscape Restoration (FLR) strategy. The information from Monitoring & Evaluation will be used to guide the implementation of the Plan with the view to maximizing the effectiveness and efficiency of the interventions. Evaluations will be conducted twice a year (mid-term and final) for the whole period of the FLR strategy. The mid-term evaluation will assess the implementation of strategic interventions and provide an opportunity to adjust the implementation plan. The final evaluation will occur at the end of the ten-year Restoration Strategy to measure results achieved against planned activities. However, annual assessment will be done to ensure successful implementation of FLR strategy.

# APPENDICES

**Appendix 1: Estimated Costs- Ecosystem Services (PES)**

Specific restoration activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Responsible	area of country	Estimated costs (TZS)
Identify fiscal and financial incentive schemes.	Access to loans and finance	Contribution to middle-income and industrial development by 2025	5.2 million ha	MNRT/MoFP	20%	20,000,000
Establish/enforce incentive schemes (existing funds, certification standards, fiscal, PES, etc)	Easy acquisition of soft and hard loans and increasing income from the sub-forest sector through payment of ecosystem services	Contribution to middle-income and industrial development by 2025	5.2 million ha	MNRT/MoFP/Investment Bank	20%	25,000,000
Land tenure/property rights reform	Land use plans developed by offering CCROs hence reduce conflicts	Contribution to the number of villages with land use plans out of 12545 villages	Villages under 5.2 million out of 12,545 villages	MNRT/Ministry of Lands	400 villages	50,000,000
Use of improved cooking stoves	Reduced usage of fuelwood and allied smoking diseases	Enabling environment of middle-income and industrial development by 2025	All households under the restoration area	MNRT/Ministry of Energy	5,000,000 Ha	45,000,000
Research and studies for PES	More information regarding PES in place	The research info shed more light on how to manage PES	Forest sector to accrue more financial resources for sustainable forest management	MNRT/ VPO	14.8M	150,000,000

Specific restoration activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Responsible	area of country	Estimated costs (TZS)
Extension activities: understanding the value and best practices to promote ecosystem functions	Restoration is well understood to all stakeholder's public at large	Enabling environment of middle-income and industrial development by 2025	All stakeholders and the entire public	MNRT	5,000,000	200,000,000
Strengthening farmer's group on climate resilient markets & value chains-farmer cooperatives	The farmer's group benefited and income increased by value addition	Contribution to middle-income and industrial development by 2025	5.2 million ha	MNRT	5,000,000	50,000,000
Strengthening of national and local institutional capacity (training)	Training manual developed and approved	Contribution to middle-income and industrial development by 2025	All stakeholders and beneficiaries	MNRT	5,000,000	50,000,000
Fiscal incentives: Seed and seedling supply systems are enhanced to provide materials for planting.	Improved seeds and seedling procured	Contribution to middle-income and industrial development by 2025	65,000,000 teak seeds	MNRT	5,000,000	130,000,000,000
Farmer field schools and exchange visits	Farmers with skills, knowledge, and practical experience	Contribution to middle-income and industrial development by 2025	All target groups within the restoration area	MNRT	5,000,000 43,550,000 tree seedlings	20,000,000
Financial incentives: Land rent exception for forest/land managers for conservation purposes. Environmental Awards	Stakeholders exempted from paying land rent and innovators awarded environment prize.	Contribution to middle-income and industrial development by 2025	All target groups within the restoration area	MNRT/MoF/M LHHSD	5,000,000	25,000,000

Specific restoration activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Responsible	area of country	Estimated costs (TZS)
Forest restoration mainstreamed as an economic activity (Financial institutions/Banks, etc).	A well-established system of accruing loans in place	Contribution to middle income and industrial development by 2025	All target groups within restoration area	MNRT	5,000,000	20,000,000
Insurance to cover forest development and farmers	A well-established system of getting insurance in place	Contribution to middle income and industrial development by 2025	Insurance companies and all stakeholders	MNRT/MoFP	5,000,000	30,000,000
<b>TOTAL</b>						<b>130,685,000,000</b>

**Appendix 2: Estimated Costs - Land/Soil Conservation Contribution to Food Security, and Livelihood of Communities**

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs	part of country
Agroforestry practices	Improved food security, improved soil fertility, land stabilization and erosion control, source of wood products (firewood, livestock fodder, building poles), soil moisture restoration	Vision 2025 Target - 3.1 High-quality livelihood	141,828.75	195,723,675	0.15
Community-based forest management through the establishment of village, private and individual forests	Improve community access and use rights for forest resources, improve community livelihood, strengthen ownership of forest resources,	Vision 2025 Target 3.2 Good Governance and Rule of Law SDG 15 Five years DP UN-Decade on Ecosystem Restoration Bonn Challenge Conserve and restore biodiversity. Poverty reduction Climate resilience Food security	283,657.5	391,447,350	0.30
Introduction of improved farming practices and techniques	Increase climate adaptation and resilience, Improve food security and livelihood.	Poverty reduction Climate resilience	141,828.75	195,723,675	0.15
Awareness creation	Acceptance of restoration strategy, Increased knowledge of landscape restoration, environmental education	Conserve and restore biodiversity	47,276.25	65,241,225	0.05
To support the development of village land use plans	Conflict resolution mechanism, sustainable land uses,	Sustainable land uses	189,105	260,964,900	0.20

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs	part of country
To support the management of invasive species	Ensures biodiversity restoration, Control erosions and reduce land degradation,	Conserve and restore biodiversity	47,276.25	65,241,225	0.05
Establishment of check dams and soil moisture management	Potential for improving livelihood (fish farming)	Climate resilience Poverty reduction	42,276.25	58,341,225	0.04
Promote women and youth engagement on restoration activities.	Gender mainstreaming and compliance. Increases voices of women and youths on landscape restoration	Gender equality Conserve and restore biodiversity.	42,276.25	58,341,225	0.04
<b>Total</b>				<b>1,291,024,500</b>	

**Appendix 3: Estimated Costs - Integrated Spatial Land Use Planning and Management**

Specific restoration objectives/activities	Benefits	The primary contribution to national /Regional /Global goals	Estimated area of opportunity (ha)	Estimated costs	Part of country
Land management and Law enforcement	Sustainability of the proposed land uses for reduction of land degradation due to improper adherences to the land use plans.	SDG15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt degradation and halt biodiversity loss.	85,097,25	223,975,962	0.09
Management of water use	Socio-Economic Benefits of Implemented Water Resources Development. Projects are Maximized in the water Catchment and Basin areas.  Establish Institutional arrangement and stakeholder engagement for the implementation of the WRB IWRMDP  Water resources are efficiently used for more productivity with less water through reduction of water consumption and increased water productivity.	SDG6. Ensure availability and sustainable management of water and sanitation for all  SDG7. Ensure access to affordable, reliable, sustainable and modern energy for all.	47,276.25	124,431,090	0.05
Awareness creation	Acceptance of restoration strategy, Increased knowledge on landscape restoration, environmental education	Vision 2025, Target 3.1 High-quality livelihood  Universal access to safe water.  Vision 2025, Target 3.2 Good Governance the Rule of Law A learning society that is confident, learns from its own development experience and that of others and	75,642	199,089,744	0.08

Specific restoration objectives/activities	Benefits	The primary contribution to national /Regional /Global goals	Estimated area of opportunity (ha)	Estimated costs	Part of country
		owns and determines its development agenda			
Environmental Protection and Conservation	<p>The environment is green, clean and full of life, effectively protected.</p> <p>Water source areas provide a regulated supply of high-quality water.</p> <p>Riparian vegetation protects river banks, coastal areas are stabilized and protected against floods and high tides and biodiversity is increasing</p>	<p>SDG15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss.</p>	85,097	223,975,304	0.09
Disaster Risk Management		SDG9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	47,276	124,430,432	0.05
Urban planning and formalization of land ownership	<p>Areas of different land uses identified, help rational resource allocation, conflict resolution mechanism, harmonization of land use about environmental conservation</p> <p>Strengthen land ownership, incentive for investment, and ensures responsible landscape restoration.</p>	Aichi Target- strategic goal	37,821	99,544,872	0.04
Village land use planning	<p>Sectoral integration,</p> <p>Conflict resolution mechanism, reduction of inversion to public land</p>	Sustainable land uses	104,007	273,746,424	0.11

Specific restoration objectives/activities	Benefits	Primary contribution to national /Regional /Global goals	Estimated area of opportunity (ha)	Estimated costs	Part of country
Capacity building on natural resources governance (law enforcement, policy integration, sector coordination)	Improved natural resources governance at all levels, contributing to landscape restoration	A well-educated and learning society	5.2 M	170,163,977.4	5.5
	Total			<b>1,439,357,805</b>	

**Appendix 4: Estimated Costs - Water Catchment Restoration Contribution to Land and Water Management**

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs (TZS)	Part of country
Water catchment mapping	Land use and degree of degradation identified	Sustainable land uses	47,276	124,430,432	0.05
Agroforestry practices	Food security improved, Soil fertility improved, land stabilization and erosion control, source of wood products (firewood, livestock fodder, building poles), soil moisture restoration	Poverty reduction, Food Security, Energy resources, Climate resilience, Water supplies improved,	66,186	9,133,668	0.07
Buffer strips	Rivers, wetlands, and forests protected, soil erosion controlled and livelihood improved	Poverty reduction, Biodiversity controlled, Food security	75,642	10,438,596	0.08
Multi-sectoral Implementation of IWRMD plans	sustainable water resources management	Climate resilience Poverty Reduction	75,642	10,438,596	0.08
Mapping and gazette	water sources protected	Biodiversity Climate resilience	18,910	49,771,120	0.02

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs (TZS)	Part of country
potential water sources	improved quality and quantity	Poverty Reduction Biodiversity energy Resources Food security			
identification and demarcation of water sources	water availability improved	Climate resilience Poverty Reduction Biodiversity Energy resources Food security	75,642	10,438,596	0.08
Intra-basin water transfer	increased water supply for the environment and social and economic needs	Climate resilience Poverty reduction Biodiversity Energy resources Food security	47,276	6,524,088	0.05
New Water sources identification and development.	improved water source availability	Climate resilience Poverty Reduction Biodiversity Energy Resources Food security	47,275	6,523,950	0.05
Rainfall harvesting	flood control and improve water availability	Energy Resources Food security Climate resilience	56,736	7,829,568	0.06

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs (TZS)	Part of country
		Poverty reduction Biodiversity Energy resources Food security			
Demand management	reduction of water shortage impact	Climate resilience Poverty reduction Biodiversity Energy resources Food security	47,276	6,524,088	0.05
Promote and encourage livelihood projects that reduce pollution and enhance conservation of water sources.	water resources conservation	Climate resilience Poverty Reduction Biodiversity Energy Resources Food security	56,731	43,828,878	0.06
Conduct research and studies to restore water sources.	improved techniques for water source management	Climate resilience Poverty Reduction Biodiversity Energy resources Food security	56,731	45,765,150	0.06
Mapping point and nonpoint sources of pollution	Pollution control	Food security Climate resilience	37,821	99,544,872	0.04

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs (TZS)	Part of country
		Poverty reduction Biodiversity Energy resources Food security			
Strengthen cross-sectoral collaboration	sustainable water resources management	Climate resilience Poverty reduction Biodiversity Energy resources Food security	56,731	7,828,878	0.06
Improved irrigation techniques	reduced water loss, increased water availability	Climate resilience Poverty reduction Biodiversity Energy resources Food security	28,365	3,914,370	0.03
Establishment of alternative livelihood,	reduced water source degradation	Climate resilience Poverty Reduction Biodiversity Energy resources Food security	37,821	5,219,298	0.04
Implementation of policies, legislation, plans, strategies and programmes	ensure compliances	Food security Climate resilience	37,821	5,219,298	0.04

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs (TZS)	Part of country
		Poverty Reduction Biodiversity Energy resources Food security			
River Restoration	flood control reduction of siltation, reduced erosion restored riverine	Poverty reduction Biodiversity Energy resources Food security	28,365	3,914,370	0.03
Environmental flow assessment (EFA)	improved water allocation for various needs	Climate resilience Poverty reduction Biodiversity Energy resources	37,821	5,219,298	0.04
	<b>Total</b>			<b>462,507,114</b>	

**Appendix 5: Estimated Costs - Integrated Water Resources Management**

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (ha)	Estimated costs (TZS)	Part of country
Determination and Establishment of Climate Change Adaptation Measures and Practices	Disaster risk management	Poverty reduction, Food Security, Energy resources, Climate resilience, Water supplies improved,	236,381	138,000,000	0.25
Water resources management and development	Environmental sustainability, water demand management and disaster prevention.	Poverty reduction, Food security, Energy resources, Climate resilience, Water supplies improved,	94,552	130,481,760	0.10
Water Demand Management	Irrigation Efficiency and Water Productivity Improvement Upgrading and Improvement of Domestic/ Commercial/ Institutional Water Supply and Distribution System	Poverty reduction, Biodiversity controlled,	113,463	156,578,940	0.12
Water Governance	Strengthening community participation and stakeholder communication	Gender equality Climate resilience Food security	75,642	138,000,000	0.08

Environmental Protection and Conservation	Public Health and good sanitation						
To develop and implement a basin and catchments drought/flood early warning system	Catchment Management Riparian Area Management Environmental Management and Pollution Control	Biodiversity controlled	189,105	260,964,900	0.20		
	prepared and resilient against water related disasters	Climate Regulation	236,381	138,000,000	0.25		
		Food and Water Security					
		Climate resilience					
	<b>Total</b>			<b>962,025,600</b>			

## Appendix 6: Estimated Costs - Improved Fisheries Systems

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of opportunity (%)	Estimated area of opportunity (ha)	Estimated costs (TZS)	% of country
Rangeland restoration and community-based livestock (rangeland) management	improved Pasture areas	URT NLD Targets				
1. Extension services	improved livestock infrastructures	5 Years Development Plan	50%			
2. Integrated Land use plan	Improve livestock value chains.	Vision 2025 objectives: Food security, growth of the national economy, the well-being of fisheries stakeholders and conserving environment.	(NLD - Improve land productivity of shrub and grassland on 1,714,500ha by 2030)	2,599,250	25,992,500,000	49.76%
3. Construction of Charco-dams and rainwater harvesting	Pastoral Community wellbeing	Grazing Land and Animal Feed Resources Act of 2010 (Grazing Land Development)				
4. Capacity building in adaptation and mitigation methodologies for livestock keeping	land use plans, frameworks and spatial plans	National Fisheries Policy 2015		398,130		
Restoration of coastal ecosystems and community-based fisheries management.	increase fish stock and security	URT NLD Targets	20% of coastal line length	6,200,000 Ha is covered by various water bodies, diverse river systems, and	3,981,300,000	7.62%
1. Restore degraded mangrove forest and strengthening VNRC and BMU	breeding sites restoration	5 Years Development Plan				
2. Prepare spatial plans	Improve fisheries value chains.					

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of Opportunity (%)	Estimated area of opportunity (ha)	Estimated costs (TZS)	% of country
for marine environment and inland water bodies	Community wellbeing  Improve salt mining  Reduce pressure on mangroves  Improve seaweed farming	Vision 2025 objectives: Food security, growth of the national economy, the well-being of fisheries stakeholders and conserving environment.  Zanzibar Development Vision 2050  Strategic Direction:  Effectively coordinating and managing the development of the ocean and its endowments for significant.  Contribution to economic prosperity. Fisheries Policy 2015		numerous wetlands)  (6,400,000 Ha of territorial water area)		
Promote Ecotourism	Coastal Communities wellbeing  Natural resources protection  reduce pressure on pelagic and other fish species	5 Years Development Plan  Vision 2025 objectives: Food security, growth of the national economy, the well-being of fisheries stakeholders and conserving environment.  Zanzibar Development Vision 2050  Strategic Direction:	50% around communities and nationally managed areas	2,611,750	26,117,500,000	50%

Specific restoration objectives/activities	Benefits	Primary contribution to national goals	Estimated area of Opportunity (%)	Estimated area of opportunity (ha)	Estimated costs (TZS)	% of country
		Building an integrated, inclusive and sustainable tourism sector as a reliable economic industry and a market for other Sectors by promoting high-value tourism, creating decent jobs for locals and ensuring that most tourist dollars spent stay in Zanzibar				
	Improved fish smoking methods	Fisheries Policy 2015	50% of fishers and Pastoralist (3,9 Households are pastoral)	2,611,750	26,117,500,000	50%
Increase awareness in communities on sustainable natural resource use	Responsible use of natural resources	5 Years Development Plan	202,050 fishers operating about 60,000 artisanal fishing vessels)			
	Climate-smart practices	Zanzibar Development Vision 2050				
		Strategic Direction: Pursuing comprehensive green and blue development through the sustainable management of Environment and Natural Resources (ENR) and climate resilience, contributing to socio-economic development goals				
	Total				82,208,800,000	

## Appendix 7: Esimated Costs\_All Activities

No.	Restoration objective/Activity	Estimated costs (TZS)
1	Ecosystem Services (PES)	130,685,000,000
2	Land/Soil Conservation Contribution to Food Security, and Livelihood of Communities	1,291,024,500
3	Integrated Spatial Land Use Planning and Management	1,439,357,805
4	Water Catchment Restoration Contribution to Land and Water Management	462,507,114
5	Integrated Water Resources Management	962,025,600
6	Improved Fisheries Systems	82,208,800,000
	<b>Grand total</b>	<b>217,048,715,019</b>

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**NATIONAL FOREST LANDSCAPE  
RESTORATION STRATEGY**

**2023 -2033**