

UNITED REPUBLIC OF TANZANIA



VICE PRESIDENT'S OFFICE

**NATIONAL ACTION PROGRAMME TO
COMBAT DESERTIFICATION
(2025-2030)**

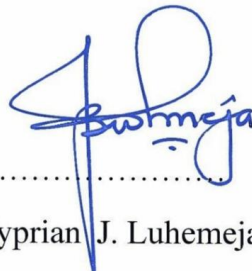
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.....
Eng. Cyprian J. Luhemeja

PERMANENT SECRETARY

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ACRONYMS AND ABBREVIATIONS

ACRP	Agriculture Climate Resilience Plan
AFR-100	African Forest Landscape Restoration Initiative to bring 100 million hectares of land in Africa into restoration by 2030
a.m.s.l	above mean sea level
ASDP	Agricultural Sector Development Programme
COFMA	Community Forest Management Agreement
COP	Conference of the Parties
COSTECH	Tanzania Commission for Science and Technology
CSA	Climate Smart Agriculture
CSOs	Civil Society Organizations
DLDD	Desertification, Land Degradation and Drought
PMO-DMD	Prime Minister's Office - Disaster Management Department
EMA	Environmental Management Act
GACOF	Great Horn of Africa Climate Outlook Forum
GDP	Gross Domestic Product
GEF	Global Environment Facility
HBS	Household Budget Survey
HFO	Heavy Furnace Oil
IWRMD	Integrated Water Resource Management and Development
JFM	Joint Forest Management
JNIA	Julius Nyerere International Airport
kWh	Kilowatt-hour
MDAs	(Government) Ministries, Departments and Agencies
MPAs	Marine Protected Areas
MTEF	Medium Term Expenditure Framework
MW	Megawatt
MWp	Megawatt peak
LDN	Land Degradation Neutrality
LGAs	Local Government Authorities
LPG	Liquefied Petroleum Gas
NAFORMA	National Forest Resources Monitoring and Assessment Project
NAP	National Action Programme
NBS	National Bureau of Statistics
NCMC	National Carbon Monitoring Centre
NDC	National Development Corporation
NEAC	National Environmental Advisory Committee
NEMC	National Environment Management Council
NEP	National Environment Policy
NLUPC	National Land Use Planning Commission
ODA	Official Development Assistance
PFM	Participatory Forest Management
PO-RALG	President's Office - Regional Administration and Local Government Authorities
REA	Rural Energy Agency
RUWASA	Rural Water Supply and Sanitation Agency

SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
SO	Strategic Objective
SOC	Soil Organic Carbon
TaFF	Tanzania Forest Fund
TAFIRI	Tanzania Fisheries Research Institute
TAFORI	Tanzania Forest research Institute
TALIRI	Tanzania Livestock Research Institute
TANAPA	Tanzania National Parks
TanBIF	Tanzania Biodiversity Information Facility
TANESCO	Tanzania Electric Supply Company
TANROADS	Tanzania National Roads Agency
TARI	Tanzania Agricultural Research Institute
TARURA	Tanzania Rural and Urban Roads Agency
TAWIRI	Tanzania Wildlife Research Institute
TCSAA	Tanzania Climate Smart Agriculture Alliance
TFS	Tanzania Forest Services Agency
TGDC	Tanzania Geothermal Development Corporation
TMA	Tanzania Meteorological Agency
TPDC	Tanzania Petroleum Development Corporation
TPSF	Tanzania Private Sector Foundation
TSCF	Trillion Standard Cubic Feet
TZS	Tanzanian Shillings
UNCCD	United Nations Convention to Combat Desertification
UNESCO	United Nations Educational, Scientific and Cultural Organization
URT	United Republic of Tanzania
USD	United States Dollar
VPO	Vice President's Office
WMAs	Wildlife Management Areas
WRB	World Reference Base for Soil Resources
WSDP	Water Sector Development Programme

CHAPTER ONE

INTRODUCTION

1.1 Background and Context

An estimate of dry lands is approximately 61% of Tanzania. It is further elaborated that degradation in the dry lands has increased from 42 in 1980s to 80% in 2018. These dry lands include the arid areas, semi-arid and dry sub-humid areas with a growing season of less than 179 days. Dodoma, Singida, Manyara and Shinyanga fall in arid lands, semi-arid areas include large part of Tabora, Mbeya, Tanga, Dar-es-salaam, Pwani, Kilimanjaro, Arusha, Mara, Kagera Lindi, Mtwara and Zanzibar.

In view of the global dimension and associated impacts of land degradation, the United Nations Convention to Combat Desertification (UNCCD) was established in 1992 and entered into force in 1994 while Tanzania ratified the Convention in June, 1997. The objective of the Convention is to curb desertification and mitigate the effects of drought through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas. Articles 9 and 10 of the UNCCD requires Parties to prepare and implement National Action Programs (NAPs). In this regard, NAPs are a key tool for the implementation of the UNCCD at the country level supported by action programmes at sub-regional and regional levels. Tanzania developed its first NAP in 1999, the second in 2004 and the third in 2014. The later ended in 2018.

In the context of the UNCCD, the term Desertification, Land Degradation, and Drought (DLDD) is commonly used to capture these interrelated processes with similar socio-economic and environmental impacts. Addressing DLDD will involve long-term integrated strategies that simultaneously focus on the improved productivity of land and the rehabilitation, conservation and sustainable management of land and water resources. In this regard, the UNCCD Strategic Framework (2018-2030) was adopted through Decision 7/COP.13 in 2017 which aims to avoid, minimize, and reverse desertification/land degradation and mitigate the effects of drought at all levels. In addition, Parties are required to apply and, as appropriate, align with the UNCCD Strategic Framework (2018–2030) in their national policies, programmes, plans and processes relating to DLDD, including in their National Action Programmes, as appropriate.

In view of the Party obligations under the UNCCD, the previous NAP (2014) has been revised to align with the newly adopted UNCCD Strategic Framework (2018-2030). This is also in response to various national, regional and international instruments which emerged since the NAP (2014) was formulated. The review and alignment of the NAP, 2014 demonstrates the Government's commitment to fulfill its obligations under the UNCCD and contribute on the global efforts to achieve land degradation neutrality (LDN¹).

¹ LDN is a state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increase within specified temporal and spatial scales and ecosystems.

1.2 The Multi-Dimensional Problem of Desertification, Land Degradation and Drought (DLDD)

Land is a dynamic resource for producing food and other ecosystem goods and services including conserving biodiversity, regulating hydrological regimes, cycling soil nutrients, and storing carbon, among others. Productive land is the most significant geo-resource, or natural capital assets, that human beings possess; human subsistence depends on it. For the rural poor communities that depend heavily on land as their main asset, their survival and the sustainability of their livelihoods are completely dependent upon, and intricately linked to, the health and productivity of their land. Increased population, climate change, unsustainable land use, land degradation and growing urban areas increase the pressure on productive land and water resources. Simultaneously, competition for productive land increases due to growing demand for food and fodder.

The dry lands (arid, semi-arid and dry sub-humid) continue to be the most vulnerable and threatened by desertification, land degradation and drought (DLDD). Drought also disrupts ecological and economic systems. Sustainable Land Management (SLM) with its focus on soil structure and land cover improvements has the potential to make significant progress towards four critical global sustainability goals related to DLDD, namely food security (SDG-2), energy access (SDG-7), water availability (SDG-6) and Life on Land (SDG-15). SLM practices significantly enhance soil water retention capacity and improve water availability.

Women bear the burden of land degradation but can also be part of the solutions. In this respect, gender sensitive investments in addressing the conditions of degraded land will not only contribute to achieving food security, poverty alleviation and sustainability but also contribute to improving the living conditions of women in ecosystems affected by DLDD. Land is intimately related to climate change adaptation and mitigation, and its sustainable management provides a tool for addressing both. Maintaining and enhancing the condition of land also contributes to biodiversity conservation and its sustainable management. Serious actions are needed to protect, restore and manage land and soils sustainably to be able to achieve our commitments for climate change adaptation and mitigation, biodiversity conservation, forest and SDG targets.

1.3 Purpose of the National Action Programme (NAP)

According to article 10 of the UNCCD, the purpose of NAP is to identify the factors contributing to desertification and practical measures necessary to combat desertification and mitigate the effects of drought. The NAP provides a national framework for domesticating and implementing obligations under the UNCCD. It reviews the state of land degradation in the country, identifies critical issues and challenges of land degradation and offers strategic interventions in line with relevant national priorities, obligations of the Convention and relevant regional and international instruments.

1.4 Rationale for Review and Alignment of the NAP (2014 - 2018)

Land degradation remains as one of the priority environmental and socio-economic challenges in the country in spite of continued conservation and management efforts over several pa

st decades. It is acknowledged that effects of DLDD and efforts needed to address it are complex and long-term, and therefore holistic approach is vital to better manage and restore land resources. On this basis, the commitment and engagement of Tanzania in implementing the UNCCD, as a multilateral platform for global action on DLDD, is considered to be the most cost-effective means. Interestingly, the benefits of actions to combat land degradation are not limited to the country but are trans-boundary in geographic scale as they also benefit neighboring countries due to shared ecosystems and catchments.

The adoption of the updated UNCCD Strategic Framework (2018-2030) provides revitalized drive and blueprint for avoiding, reducing, and reversing land degradation which will also contribute in climate change adaptation and mitigation, biodiversity conservation and the provision of ecosystem services. Consequently, domestication of the new global land agenda through the review and alignment of NAP (2014) is necessary to facilitate and bring change on the ground. The focus is to restore the productivity of the degraded land which constitutes almost half of the country land area, improve the livelihoods of more than 30 million people, and to reduce the impacts of drought on vulnerable populations in the country.

In the same breath, the 2030 Agenda for Sustainable Development which was adopted in 2015, introduced 17 Sustainable Development Goals (SDGs) particularly SDG 15: Life on Land which aims to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. More specifically, Target 15.3 states that, “By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world”. This target has therefore become a strong vehicle to drive UNCCD agenda, while at the same time contributing to other SDGs, including those relating to climate change mitigation and adaptation, biodiversity conservation, ecosystem restoration, food and water security, disaster risk reduction and poverty reduction.

Africa Agenda 2063 is a blueprint for transforming Africa into the global powerhouse of the future. It recognizes environmental sustainability and climate resilient economies and communities as a key for undiminishing future of the region. It also advocates for Sustainable natural resource management and Biodiversity conservation fostering sustainable land management including sustainable consumption and production patterns.

Similarly, there are several national strategies and plans which entail broad and specific national priorities and targets that are relevant in combating DLDD. It is therefore of strategic importance to capitalize on synergies, cross-sectoral integration and multi-stakeholder engagement as an important accelerator for achieving most of the Sustainable Development Goals. These include: the Third Five Year Development Plan (2021/22- 2025/26); National Environment Policy (2021); National Environmental Master Plan for Strategic Interventions (2022-2032); National Strategic Campaign on Environmental Conservation and Sanitation (2021-2026); National Climate Change Response Strategy (2021-2026); Zanzibar Climate Change Strategy, (2014), Nationally Determined Contribution (2021); National Invasive Species Strategy and Action Plan (2019-2029); Land Degradation Neutrality (LDN) Target Setting Programme (2020); and relevant Sectoral Policies, Plans and Strategies.

The overall implementation of the previous NAP (2014) 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 Local Government Authorities; and low level of awareness among key stakeholders. In view of this situation, there is a need for strengthening integrated approach to improve and sustain national efforts in addressing Desertification, Land Degradation and Drought (DLDD).

It is against this background that, the review and alignment of NAP (2014) regardless of being an obligation under the UNCCD, is an opportunity to take stock of the achievements made, effectiveness of existing policy approach and interventions, and consolidate 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 National Action Programme (NAP) Review Process

The NAP has largely been developed from a broad-based consultative and participatory planning process, involving a wide range of stakeholders. The formulation of this NAP adopted the following approach namely, stocktaking, drafting of the NAP, and stakeholder's consultation. A brief description of each of the steps is provided hereunder.

a) Stocktaking

Preparation of the NAP was preceded by a stocktaking exercise involving review of current DLDD data and the performance in implementation of the NAP (2014). The purpose of stocktaking exercise was to gauge the implementation performance of the preceding NAP and update trends; assess achievements, gaps, challenges, lessons learned; and consider emerging issues so as to inform the formulation of new NAP.

The first step during the stocking exercise was a desk review of current DLDD information involving compilation, examination and synthesizing of information from national, regional and international documents. This involved review of policies and strategies, plans, project documents, reports and published papers related to DLDD.

The second step using various progress reports was to evaluate the implementation of NAP (2014), which involved assessment of its achievements, challenges and lessons learnt. Based on review of current DLDD information and review of NAP (2014), a draft stocktaking report was prepared.

The third step was to share the draft stocktaking report with key stakeholders particularly Ministries, Departments and Agencies (MDAs) and other stakeholders. The stocktaking draft report was also posted on the website of the Vice President's Office and the public was invited to submit comments. Comments from stakeholders were incorporated in the final stocktaking report which paved the way and informed drafting of the revised NAP.

b) Drafting of the NAP

Drafting of the NAP was done by a multi-stakeholder team of experts which was formed by the Permanent Secretary, Vice President's Office. The team of experts commenced drafting based on the stocktaking report and the UNCCD Strategic Framework (2018-2030), among other reference documents. The draft revised NAP was produced and subjected to national stakeholder's workshop.

c) Consultation of stakeholders

The Draft NAP was subjected to a broad spectrum of stakeholders through a National Stakeholders Workshop that was organized to validate the final revised NAP before it was published. The workshop gathered participants from Local Government Authorities (LGA), Government Ministries, Departments and Agencies (MDAs), Academia, Development Partners, Civil Society Organizations (CSOs), private sector and the media. Comments obtained from the stakeholders were incorporated into the Final Draft NAP.

1.6 Overview on Policy and Legal framework

The Tanzania Development Vision 2025 (TDV 2025) for mainland and the Vision 2050 for the Revolutionary Government of Zanzibar (ZDV50) have set the overall National Development Agendas. Both visions aim at high standard of living by raising incomes of their people and economic growth. Among the key attributes of the TDV 2025 are high quality livelihoods, good governance and competitive economy capable of producing stained inclusive and shared benefits. The ZDV50 envisioned attaining Upper Middle-Income Status by the year 2050 through sustainable and inclusive human development. The vision recognizes and places in priority the roles of agriculture production, blue economy and tourism through effective and sustainable exploitation of marine resources. The ZDV50 envisage targets to exploit a competitive advantage in fisheries and aquaculture, coastal and marine tourism, marine trade and infrastructure as well as oil and gas. During preparation of this NAP the United Republic of Tanzania was developing a Vision 2050 which among others will take into account issues of environment particularly DLDD, Climate Change and Biodiversity conservation as among the pillars to achieve sustainable development of the Country.

1.6.1 Policy Framework

The two development visions have been streamlined into Tanzania mainland and Zanzibar sectorial development policy frameworks. The relevant policy frameworks with key provisions in combating environmental problems including the desertification, land degradation, drought climate change impacts and biodiversity losses are:

a) The Tanzania Environmental Policy (2021)

National Environmental Policy (NEP) 2021 is a core guide which serves as the national framework for harmonized and coordinated environmental management, including the forests, land and water resources for the improvement of the welfare of present and future generations in Tanzania.

b) *The Zanzibar Environmental Policy (2013)*

The Zanzibar Environmental Policy (ZEP 2013) serves to guide environmental management including land, water and forests reflecting the ZV 2050, envisioning “*Sound environment management for sustainable economic and social benefit for present and future generations*” through promoting the “*sound and sustainable environmental management practices through provision of policy guidance, institutional strengthening and cooperation*”.

c) *The National Agriculture Policy (2013)*

This provides overall agricultural development framework to contribute to the TDV2025. It recognizes issues of land degradation associated with agriculture; notably soil erosion causing adverse changes in hydrological, biological, chemical and physical properties of soils. Thus it promotes actions for sustainable intensification of agricultural practices and discourages slash and burn and overuse of agro-chemicals. Among others it fosters improvement of land husbandry through agro-forestry, soil erosion control and soil fertility improvement activities contributing to sustainable land management and addressing climate change.

d) *The Zanzibar Agricultural Policy (2002)*

The agricultural development focus for Zanzibar is to modernize and commercialize the agricultural sector for increased productivity and rural incomes while ensuring an ecologically sustainable environment. This is pursued through promoting “*sustainable development of the agricultural sector for economic, social and environmental benefits for its people*”.

e) *The National Land Policy (1995)*

It provides framework for village land use planning and management and empowers the village authorities. The policy synergistic aim for SADC-GWWI is protecting land resources from degradation for sustainable development.

f) *The National Forestry Policy (1998)*

The National Forestry Policy 1998 provides framework for forests landscapes management and ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility. It recognizes and encourages ownership of forest as private, local authority and communities forests reserves through the Participatory Forests Management (PFM).

g) *The Zanzibar Forest Policy (1999)*

The Zanzibar Forest Policy 1999, it provided framework for protecting and conserving forest resources and landscapes biodiversity. It recognizes the role of forest resources in maintaining soil and water conservation and other environmental benefits.

h) National Livestock Policy (2006)

The national livestock policy provides the framework for livestock sector development and natural resources management in the rangelands. The policy promotes the sustainable utilization of rangelands in livestock production, adaptation and management of rangeland with respect to seasonal variations of quality and quantity of forage.

i) The National Water Policy (2002)

The Policy aims to ensure there is enough supply of quality and potable water to meet domestic, environmental and other priority development needs of the present and future generations. It advocates promotion of Integrated Water Resources Management (IWRM) as a way to ensure water sources are effectively used and conserved.

j) The National Energy Policy (2015)

The Policy is to provide guidance for sustainable development and utilization of energy resources to ensure optimal benefits to Tanzanians and contribute towards transformation of the national economy. Further, the policy emphases are promotion of sustainable renewable energy sources and energy efficiency and conservation to foster implementation of climate change adaptation and mitigation activities to support sustainable development and economic growth.

k) The National Wildlife Policy (2007)

The Policy provides for protection of water catchments for wildlife water supply; conservation of biodiversity; protection of fragile ecosystems; and restoration of degraded habitats for flora and fauna. The Policy emphases is effective participation of all stakeholders, especially local communities and the private sector, in the management and conservation of wildlife resources.

l) The Zanzibar Blue Economy Policy (2020)

The Blue Economy Policy of the Revolutionary Government of Zanzibar, places importance on recognizing the role of blue economy in promoting socio-economic development of the people of Zanzibar by integrating the economic potential of the sea and the inland terrestrial catchments without depleting the ecosystems, through protecting the marine environment and the sustainable use of biodiversity, carbon sequestration and coastal resilience to climate change impacts.

1.6.2 Legal Framework

Tanzania has two main Legal frameworks for environmental compliances. These are:

- a) The Environmental Management Act Cap 191. It provides the legal and institutional framework for sustainable management of the environment for Tanzania mainland.

b) The Zanzibar Environmental Management Act (2015) Part III (Articles 14-23). The Act empowers Zanzibar Environmental Authority (ZEMA) to help safeguard the environment.

A part from these two main frameworks, many other acts can support the NAP implementation in the country. These are listed as:

- i) The Forest Act No. 14 Cap. 323, providing legal framework for the management of forests. The Act governs protection, conservation, management and utilization of forests and forest products in Tanzania.
- ii) Zanzibar Forests and Conservation Act No. 10 of 1996 (Parts I-XIII), providing legal framework for protection, conservation and the development of forests in Zanzibar for the social, economic and environmental benefit of present and future generations of the people of Zanzibar.
- iii) The Land Act No. 4 Cap 113. This Act governs all land issues in Tanzania. It stipulates that land in Tanzania is public property and remain vested in the President as trustee for and on behalf of all citizens of Tanzania;
- iv) The Village Land Act No. 5 Cap 114, governing village land category. It empowers the village Governments to have legal control of village land and its uses.
- v) The Land Use Planning Act Caps 287 & 113, providing procedures for preparation, administration and enforcement of land use plans.
- vi) The Grazing-land and Animal Feed Resources Act No. 13 Cap.180, dealing with the management and development of grazing-lands and animal feed resources. It provides mandate to the Local Government Authorities in safeguarding and developing grazing lands
- vii) The Water Resources Management Act No. 11 with environmental management Cap 191, enforcing the protection, the use and the development of water resources for meeting basic present and future generation human needs.
- viii) The Wildlife Conservation Act No. 5 Cap 283 R.E. 2022. stipulating the importance of involvement of local communities in the management and conservation of ecosystems in the Wildlife Management Areas (WMAs).
- ix) National Park Act No 11, Cap 282, provides for the establishment, control and management of national parks and for related matters with regards to natural resources and wildlife.
- x) Ngorongoro Area Conservation Act No 14, Cap 284, promotes natural resources conservation and development, while safeguarding and promoting the local community interests.

- xi) Plant Health Act No 4, includes Cap 191, which enforces compliance to environmental management procedures when dealing with pesticides.

Further, the Government deployed a number of initiatives and interventions. These include:

a) National Environmental Action Plan (NEAP of 2010)

This is a national guiding framework for sustainable environmental management including biodiversity, which lead to identification and planning for urgent climate change adaptation actions that are robust enough to lead to long-term sustainable development by reducing risks in a changing climate.

b) The National Adaption Programme of Action of (2007)

The national adaptation programme incorporates environmental concerns into natural resource management planning for economic development. It provided framework for preventing the loss of wildlife habitats and biodiversity; control of invasive alien species & deforestation, environmental degradations, i.e. water resources degradation and pollution; and addressing the climate change impacts.

c) National Environmental Master Plan for Strategic Interventions (NEMPSI) (2022-2032)

The NEMPSI provide the framework for addressing the environmental challenges including land degradations, deforestation, biodiversity loss, climate change, deterioration of water sources, coastal and marine degradation, waste management and environmental pollution, biotechnology and invasive species

d) Nationally Determined Contribution (NDCs)

This is as a national commitment for climate action consistent with decision 1/CP.20 to be implemented by the relevant sectors by 2030. It provides national relevant sectors contributions to climate change mitigation and adaptation actions.

e) National Climate Change Response Strategy (2021 – 2026)

This is a framework provides CC technological and infrastructural adaptation and mitigation for resilience and mainstreaming sector policies and action plans and the complimentary initiatives that focus on biodiversity conservation and sustainable use.

f) Zanzibar Climate Change Strategy, (2014)

The strategy is a framework for addressing vulnerability adaptation to CC, climate smart agriculture and natural resource management, including sustainable forests and energy sources. It prioritizes climate change actions that build resilience

and developing opportunities for carbon- relevant sustainable development.

g) National Invasive Species Strategy and Action Plan (2019 – 2029)

This strategy provides a framework for managing the negative ecological, health and economic impacts caused by invasive species (IS). It is particularly of significance to GGW with regards to the impacts the IS on biodiversity, crops and pasture production and water resources.

CHAPTER TWO

COUNTRY PROFILE

2.1 Physiography

Tanzania is an East African country lying just below the equator, Latitude 1° S and 12°S and Longitude 29°E and 41°E (Figure 1). The most Northerly point is Mutukula (1⁰ 01' S and 31⁰ 25' E), most Southerly point Mtalika (11⁰ 32' S and 37⁰ 05' E. The most Westerly and Easterly points are Kigoma (4⁰ 52' S and 29⁰ 38' E) and Msimbati (10⁰ 21' S and 40⁰ 26' E), respectively. Mainland Tanzania is bordered on the north by Kenya and Uganda; on the west by Rwanda, Burundi and Democratic Republic of the Congo; on its south western side by Zambia and Malawi; in the south by Mozambique and in the east by the Indian Ocean.

The country is constituted by Mainland Tanzania and Zanzibar with a total area of 945,249 km² comprising of land area of 883,749 km² (881,289 km² Mainland and 2,460 km² Zanzibar Islands), plus 61,500 km² inland water bodies. Mainland Tanzania encompasses major island of Mafia (518 km²) and Zanzibar consists of Unguja (1,666 km²) and Pemba (795 km²).

2.2 Physical Features

2.2.1 Topography

The Tanzania terrain comprises plains along the coast; a plateau in the central area that ranges between 1,000 and 1,500 meters above sea level (a.m.s.l); highlands in the north-east and south west are characterized by mountain ranges and peaks; river and lake basins and the Great East African Rift Valley.



Figure 1: The map of Tanzania showing regional and international boundaries (URT, 2022)

2.2.2 Soils

According to the World Reference Base for Soil Resources (WRB), Tanzania has 19 dominant soil types. These are dominated by Cambisols (35.64 percent), Acrisols (8.63 percent), Leptosols (8.11 percent), Luvisols (7.26 percent), Ferralsols (6.32 percent), Vertisols (5.02 percent) and Lixisols (4.95 percent). Zanzibar is predominantly with six types of soils. These include: Laptosols (43.5%), Ferralsols (16.3%), Vertisols (17.8), Acrisols (7.2), Nitisol (5.3) and Histosols (3.2%).

2.2.3 Vegetation

Tanzania vegetation ranges from grasses to shrubs, miombo woodland and montane to rich forests that contain more than 2,000 plant species. The most typical vegetation is the dry grassland scattered with thorny scrub and acacia that is found along the Eastern Plateau, which makes up most of the country's land area. This area includes open grasslands, savanna as well as woodlands and comprises the Serengeti Plains. Most of the Tanzania forest is montane vegetation which is located on the Eastern Arc Mountains, forming an unbroken range between 50 and 200 km inland. A belt of miombo woodland stretches in southern and western Tanzania and is characterised by *Brachystegia*, *Acacia* and Baobab trees. Along the coast are fairly common, with alpine moors on the slopes of Mount Kilimanjaro and Meru. These ecosystems are famous habitats for diverse types of wildlife. The most dominant vegetation in Zanzibar are tropical coastal forest, coral rag forest, Mixed vegetation and mangrove forest.

2.2.4 Geology

The general geology of Tanzania comprises mainly of the Precambrian². The Precambrian rocks underlie most of central and western Tanzania. Archean granite and greenstone rock assemblages form the central nucleus of the country, the Tanzania Craton. The craton is surrounded by Proterozoic belts: the Paleoproterozoic Usagaran-Ubendian belt, and the Mesoproterozoic Kibaran (Karagwe-Akolean). The Neoproterozoic Mozambique Belt occurs in the eastern part of the country. Parts of the Usagaran-Ubendian belt were rejuvenated during the Neoproterozoic to early Cambrian Pan-African thermo-tectonic event. Shallow water sediments of the Neoproterozoic (900-800 million years) Malagarasi Super group underlie parts of western Tanzania. The Karoo basin crosses southern Tanzania in a north-easterly direction. Mesozoic and younger marine sediments occur along the coast of Tanzania. Geology of Zanzibar Islands (Unguja and Pemba) is characterized by sediments Miocene and Quaternary rocks (<25 million years). Quaternary rocks of terraced coralline reefs and coral limestone mostly are developed inwards from the eastern part of the Islands.

2.3 Climate

2.3.1 Rainfall

The climate of Tanzania is characterized by bimodal and unimodal rainfall regimes. The northern part of the country including areas around Lake Victoria Basin (Mwanza, Kagera, Mara, Shinyanga, Geita and Simiyu), North-Eastern Highlands (Kilimanjaro, Arusha and Manyara) and the Northern Coast (Dar es Salaam, Tanga and Northern Morogoro) experience two main rain seasons (bimodal) namely, long rains (Masika) which normally begins in mid-March and end at the end of May and short rains (Vuli), which begins in mid-October and continues to early December. The Central part of the country (Dodoma and Singida), the Southern part (Ruvuma,

² The **Precambrian** is the earliest of the geologic ages, which are marked by different layers of sedimentary **rock**. Laid down over millions of years, these **rock** layers contain a permanent record of the Earth's past, including the fossilized remains of plants and animals buried when the sediments were formed.

Lindi and Mtwara), the Western areas (Kigoma, Tabora, Katavi and Rukwa) and South-western Highlands (Mbeya, Njombe, Iringa and Southern Morogoro) have a prolonged unimodal rainfall regime that start in November and continues to the end of April. These rain seasons are associated with the southwards and northwards movement of the Inter-tropical Convergence Zone (ITCZ).

Annual rainfall amount varies from 550 mm in the central parts of the country to 2,500 mm in some parts of surrounding Lake Victoria. Tanzania's topographical diversity gives rise to four distinct climate zones namely: i) hot and humid coastal belt (including the Zanzibar archipelago), which has the warmest temperatures, averaging 27-30°C, and receives 750-1,250 mm of annual rainfall, with Zanzibar receiving 1,400-2,000 mm; ii) hot and arid central plateau, which receives just 500 mm of rainfall; iii) cooler semi-temperate high lakes region in the north and west which receives 750-1,250 mm of rainfall annually; and iv) highlands of the northeast (i.e. Kilimanjaro) and southwest including the coldest parts of the country with average temperatures of 20-23°C.

2.3.2 Temperature

Along the coast and in the off-shore islands the average temperatures ranges between 27°C and 29°C, while in the central, northern and western parts temperatures range between 20°C and 30°C. Temperatures are higher between the months of December and March and coolest during the months of June and July. In the Southern highlands and mountainous areas of the north and northeast, temperature occasionally drops below 15°C at night, and in the cold months on June and July sub-zero temperatures can also be experienced. Distribution of minimum temperature (Tmin) is identical to that of maximum temperature (Tmax), lower values of Tmin are centered on south-western and north-eastern highlands. Mbeya, Iringa, Njombe, Arusha and Kilimanjaro are the coolest regions characterized by mean annual Tmin values which are less than 15°C. Coastal areas including Dar es Salaam, Tanga, Mtwara, Zanzibar and Pemba are characterized by relatively higher values (>20°C) of mean annual Tmin. Annual mean maximum temperature for Tanzania for the period of 2012 to 2016 was 28.5°C. Furthermore, the highest mean maximum temperature observed was 32.2°C recorded at Julius Nyerere International Airport (JNIA) meteorological station in Dar es Salaam in 2012. The lowest mean maximum temperature was 23.7°C recorded at Mbeya meteorological station in 2014. Available statistics show that, annual mean maximum temperature variations from station to station are small.

2.3.3 Wind

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 predominantly southerly. They are characterised 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 characterised with high air temperatures (>30°C) and bring the lighter rains (*Vuli*) from November to December. The mean relative average humidity in Tanzania is recorded as 44.6 percent and on monthly basis, it ranges from 30 percent in September and October to 58 percent in March. The coastal areas are more humid compared to the rest of the country.

2.3.4 Humidity

The mean relative humidity in Tanzania for an average year is recorded as 44.6 percent and on monthly basis, it ranges from 30 percent in September and October to 58 percent in March. The coastal areas are more humid compared to the rest of the country.

2.4 Socio-Economic Issues

2.4.1 Population

The population of Tanzania is 61.7 million, according to the 2022 National Population and Housing Census, with women comprising 51.3 percent of the total population as compared to 48.7 percent for men. The annual population growth rate is about 3.2 percent. The average population density is 59 persons per km² with variation across administrative regions. The average household size in Tanzania Mainland is 4.4 persons per household, whereby rural households have the largest household size of 4.7 persons. Zanzibar has sparsely population density of 768 persons per km² with variation across regions, the average household size is 5.0 persons indicating slightly decrease from an average 5.1 persons recorded in 2012.

Life expectancy at birth has increased from an average of 62.2 years in 2013 to 66.1 years in 2021 as a result of continued improvements in social services. Total Fertility Rate (TFR) has declined from an average of 5.3 children in 2013 to 5.0 children in 2019. Crude death rate has declined from an average of 9.0 deaths per 1,000 people in 2013 to 7.2 deaths in 2019.

Projections indicate that by 2021, almost a third of the population in country was urban. By 2021, 32.6 percent of the population was urban whereas 67.4 percent of the population lives in rural areas. Major urban centers/cities and towns include Dar es Salaam, Arusha, Mwanza, Mbeya and Morogoro.

2.4.2 Key Economic Sectors

The major contributing economic sectors to the national GDP in 2021 were agriculture (26.1 percent), construction (13.8 percent); trade and repairs (8.7 percent); manufacturing (8.8 percent); transport and storage (7.1 percent); mining and quarrying (7.2 percent), forestry and hunting (3.9 percent); financial and insurance service (3.4 percent); information and communication (1.5 percent); Accommodation and food services (1.1 percent); water supply, sewerage and waste management (0.5 percent); and electricity (0.2 percent).

2.5 Natural Resources

Tanzania is endowed with various treasures of unique environmental resources. Tanzania's rich natural resources are also fundamental for the country's growth and economic development. Among important environmental resources found in Tanzania include forest, water, land, coastal marine ecosystems, wildlife, natural gas and minerals.

2.5.1 Forest

Forests and wooded areas coverage in Tanzania is about 48.1 million hectares. The three types of natural forests in Tanzania include: i) miombo woodlands, ii) montane forests and ii) mangroves. These forests are further categorized by type of vegetation cover, usage and legal status, and that with regard to type of vegetation cover, 44.6 million ha or equivalent to 93 percent of the total forest area in Tanzania is covered by woodlands, followed by Lowland forests (3.4 percent), Humid Montane Forest (2.0 per cent), Plantation Forest (1.2 percent) and Mangroves (0.3 percent).

In Zanzibar the total area covered by forest are 107,468 ha of which 37,492 ha are protected areas (16,863 ha mangrove and 20,609ha terrestrial), 60,000ha are community managed forest, 8,706 ha forest plantation, and 1,270 ha are rubber plantation. (Zanzibar Wood Biomass Survey 2013) The forest cover of Zanzibar is endowed with rich and valuable biodiversity and natural resources, which to a large extent play an important role in the daily livelihood of the people of Zanzibar. They are very important for cooking, building timber, tourism, fodder, water catchments, habitat for wildlife, medicinal, climate regulator, rain fall and estuaries for fish breeding areas. To the large extent, the forest resources contributed significantly towards the exiting social and economic development of Zanzibar and its environmental integrity. Currently, the forest and green environment of Zanzibar is at risk of deteriorating due to natural and human influences. In generally, forests occupy 40 % of the total land area.

In terms of usage, the estimated annual consumption of wood is 1.34 million cubic metre which exceed the annual allowable of 0.48 million cubic metres. The current annual deficit is 0.85 million cubic metre per annum. The annual deficit is met by over-harvesting in the accessible forests. This leads to degradation and deforestation of the remaining forest and woodlands. (Zanzibar Wood Biomass Survey 2013)

2.5.2 Water Resources

Tanzania has relatively abundant water resources, with relatively high, but seasonal, rainfall and a number of major rivers and lakes in which many of them are transboundary.

Water Basins: Tanzania is divided into nine hydrological zones or river basins for purposes of water resources management. These basins are: (i) Pangani; (ii) Wami/Ruvu; (iii) Rufiji; (iv) Ruvuma and Southern Coast, all of which drain into the Indian Ocean; (v) Lake Nyasa; (vi) Lake Rukwa; (vii) Lake Tanganyika; (viii) Lake Victoria; and (ix) the internal drainage basin. As can be noted the most extensive is Rufiji water basin which covers an area of 181,964 km², followed by Lake Tanganyika (160, 426 km²) and internal drainage basin (142,943km²), respectively. The smallest is Lake Nyasa basin which covers an area of 33,997. km².

Per capita water resources: Renewable water resources in Tanzania constitute rivers, reservoirs and lakes, shallow and deep-water wells (boreholes), artesian wells and springs. Temporal and spatial distribution of surface and groundwater sources in the country is mainly controlled by the natural geological setting and weather. The available annual renewable water resources in Tanzania are estimated at 125,763 MCM per year, which include 104,568 MCM of surface water

and 21,195 MCM of groundwater. This estimate is equivalent to an average of 2,250 m³/cap/yr, which is above the globally agreed Water Stress Indicator of 1700 m³/cap/yr. However, the amount of renewable water resources decreases with time and hence reduces the annual average available per capita due to different reasons including climate change effects, poor planning, inadequate water security infrastructures, population increase, increased social economic activities and catchment degradation.

Freshwater Systems: About 5.7 percent of the total land area of the country is covered by three important lakes in Africa, namely, Lake Victoria, Lake Tanganyika and Lake Nyasa. Tanzania shares other lakes and rivers with other countries. These include Lakes Chala and Jipe and Rivers Kagera, Mara, Ruvuma and Songwe. Lake Victoria is the second largest lake in the world (68,800 km²) while Lake Tanganyika is the second deepest water reservoir (1,470 m deep) in the world. Tanzania is home to many great rivers which provide habitats for multiple plant and animal species, fishing, farming and hydro-power generation.

2.5.3 Wetlands

There are about 115 different wetlands ecosystems occupying 10 percent of the total land area of Mainland Tanzania (approximately 88,300 km²) harbouring over 650 associated species, such as molluscs, crustaceans, echinoderms and fish. The wetlands have different conservation status, whereby some are in forests and game reserves, national parks, and other protected areas, while others have no conservation status. The major wetlands include Kilombero, Malagarasi-Muyovosi, Rufiji-Mafia, Lake Natron and Ihefu. In terms of their distribution, 60 percent extend over village land while the remaining 40 percent is located over public land.

2.5.4 Land

Tanzania possesses 94,508,700 ha of territorial area, out of which nearly 89 million ha is land and the remaining is covered by water. About 44 million ha are classified as suitable for agricultural production and only 24 percent of arable land is being utilized. Land under medium and large-scale farming is 1.5 million ha and land under smallholder farmers is about 8.6 million ha. Generally, the urban areas occupy 2 percent of the total geographical area even as they are now occupied by close to 30 percent of population.

The percentage shares of total land area for agricultural land constitute 43.7 percent, forest (37.3 percent) and other land uses (19 percent). Agricultural land is further divided into: i) arable land which amounts to 14.3 percent of the total agricultural land and used for cultivation of crops like wheat, maize, and rice that are replanted after each harvest; ii) land for permanent crops which constitute 2.3 percent of the agricultural land and used for cultivation of crops like citrus, coffee, and rubber that are not replanted after each harvest, and includes land under flowering shrubs, fruit trees, nut trees, and vines; and iii) land for permanent pastures and meadows (27.1 percent).

2.5.5 Wildlife

Tanzania is endowed with unique diverse wildlife attractions which include National parks, Game reserve, Game Controlled Area and Marine Parks. Tanzania has a total of 22 gazetted national parks which comprise a total area of 104,578 km² which is equivalent to 11.6 percent of the total land area. Nyerere National Park is the largest national park in the country with a total area of 30,893 km² (3.2 percent of the total land surface). Ruaha is the second largest national park with an area of 20,300 km² whereas Serengeti is the third largest national park with an area of 14,763 km². Saanane is the smallest national park covering an area of 50 km²

Tanzania has a total of 28 game reserves covering an area of 117,755.4 km². Game reserves are wildlife protected areas which are declared for the purpose of conservation. Consumptive and non-consumptive wildlife utilization is allowed after obtaining permits. Selous is the largest game reserve covering an area of 50,000 km² (54,600) which is about 42.5 percent of the total area under game reserves. The remaining game reserves individually constitute less than 10 percent of the total game reserve area.

In Zanzibar there are 10 terrestrial protected areas of which 6 are in Unguja Island and 4 are in Pemba Island. With respect to protected area status Zanzibar has one 1 National Park (Jozani – Chwaka Bay National Park), two nature reserves (Ngezi- Vumawinbi in Pemba and Masingini in Unguja) and seven forest reserves (Jambiani – Muyuni, Kiwengwa – Pongwe, Ufufuma – Pongwe, Kidikitundu – Nongwe – Vundwe, Malilini, Msitu mkuu and Ras kiuyu. Unlike Mainland, Zanzibar has no big wildlife, however, has endowed with small endemic wildlife which are very potential for eco-tourism include red colobus monkey and Pemba flying fox.

2.5.6 Natural gas

Tanzania counts on four tectonic groups of natural gas basins (coastal, Karoo rift, the East African valley and cratonic sag basins) of which, so far, only two have become productive. These corresponds to the fields at Songo Songo Island in Lindi and those of Mnazi Bay in Mtwara. As of 2022, the confirmed quantity of discovered gas was 57.54 trillion Standard Cubic Feet (TSCF).

At present, natural gas is being used in several power plants (TANESCO and Songas) and to about 48 industries that are using natural gas as replacement fuel of other refined products. There are more than 1,000 households in Dar es Salaam, Pwani, Lindi and Mtwara that are linked to the natural gas network for cooking and water heating and more than 1,000 vehicles that are using natural gas.

2.5.7 Minerals

The country has various mineral resources including gold, iron, silver, copper, platinum, nickel and tin; gemstones such as diamonds, Tanzanite, ruby, garnet, emerald, alexandrite and sapphire; industrial minerals such as kaolin, phosphate, lime, gypsum, diatomite, bentonite, vermiculite,

salt and beach sand; building materials such as stone aggregates and sand; and energy minerals such as coal and uranium.

The mineral sector contributed 7.2 percent of GDP in 2021 and about 50 percent of the country's foreign exchange earnings from exports apart from traditional exports. The mining industry experienced an estimated 9.6 percent growth in 2021.

2.5.8 Energy

The Tanzania national energy balance is dominated by biomass which accounts for 85 percent. Other sources include petroleum (9 percent), electricity (5 percent) and renewable energies (1 percent). In energy statistics, two types of energy production namely, primary and secondary energy are distinguished. Primary energy products are extracted or captured directly from natural resources such as crude oil, coal and natural gas. Secondary energy products are produced by transforming primary energy products.

2.5.8.1 Energy Production and Consumption

According to the Ministry of Energy, the total share of Biomass in Primary Energy Supply is expected to decrease by 49 percent by 2040 due to increase of modern energy supply and services. Energy consumption pattern in Tanzania indicates the highest energy consumer to be the residential/domestic uses (73 percent), followed by industry (14 percent) and transport (6 percent).

2.5.8.2 Electricity Generation

Electricity generation in 2021 was largely dominated by natural gas, which accounted for 892.72 MW (57 percent), followed by hydro power with 573.70 (36.6 percent). Diesel/HFO/GO accounted for 88.80 MW (5.7 percent) and Biomass 10.50 MW (0.7 percent). It is also revealed that, electricity generation increased from 7,862.9 GWh in 2020 to 8,580.8 GWh in 2021.

2.5.8.3 Electricity Consumption in Tanzania

By June 2021, the average electricity consumption per capita in Tanzania was 138 kWh/year. This is relatively small compared to 2,500 kWh/year global average and 550 kWh/year for Sub-Saharan Africa. The average growth rate for electricity demand in Tanzania ranges between 10 percent and 15 percent per annum. Electricity consumption statistics show that the largest user group in 2021 was general use (T1) which accounted for 36.7 percent of total electricity consumption. This is followed by high Voltage use (T3) which accounted for 35.8 percent. The lowest electricity consumption group was domestic use (D1) which accounted for 3.6 percent of total consumption in the year.

2.5.8.4 Renewable Energy

Tanzania has various renewable energy sources including biomass, solar, hydropower, geothermal, biogas, wind, tidal, and waves. According to the ADBG, (2015), currently, the

country's total generation capacity from renewable energy (excluding large hydro) is about 4.9 percent; this includes captive generation in sugar, tannin and sisal factories, solar and small hydro plants.

a) Hydropower

Currently, hydropower constitutes about 33.91 percent of the total power generated in Tanzania. Hydropower in Tanzania has an installed capacity of 574.6 MW, which is approximately one-third of total installed power capacity. Apart from the existing 574.6 MW, Tanzania is expected to generate additional 2,612 MW of hydropower including 2,115 MW that will be generated from the Julius Nyerere Hydropower Plant.

b) Wind Energy

Tanzania has areas of high wind potential that cover more than 10 percent of her land with annual average wind speeds of 5–8 m/s which exist along a coastline of about 800 km with predominant surface winds, moving from south-east to northeast. The country's wind energy production potential stands at 1,000 MWp although there is currently not much to show as its contribution to the national power grid. Areas such as Makambako (Njombe) and Kititimo (Singida) have sufficient wind speed for grid-scale electricity generation, with average of wind speeds 8.9 m/s and 9.9 m/s at the height of 30 m, respectively.

c) Solar Energy

Tanzania has substantial amount of solar energy ranging between 2,800-3,500 hours of sunshine per year, and a global horizontal radiation of 4-7 kWh per m² per day, suggesting that solar can be a major source of energy in the country. The national solar energy potential is estimated at 670 MWp. Solar energy is used as a source of power by 24.7 percent of the households with access to electricity in the country. On the other hand, solar energy is used mostly in rural areas with about 64.8 percent compared to urban areas with only 3.4 percent. The regions of Lindi, Njombe, Mtwara, Katavi, and Ruvuma lead in the use of solar power electricity in Tanzania. The main uses include heating and drying and photovoltaic for lighting, water pumps, refrigeration purposes, and telecommunication. About 6 MWp (megawatt peak) of solar PV electricity has been installed countrywide for various applications in schools, hospitals, health centres, police posts, small telecommunications enterprises and households, as well as for street lighting.

d) Biomass energy

Wood energy demand accounts for approximately 85-90 percent of Tanzania's overall energy supply and demand. Almost 90 percent of that demand comes from the household sector, with the remainder coming from household enterprises (often referred to as cottage industries), commercial, institutional and some industrial demand. Charcoal demand has nearly doubled over the past ten years driven by rapid urbanisation and high relative prices or scarcity of energy substitutes, particularly kerosene, electricity, biogas, biomass briquettes and LPG. Dar es Salaam city and other urban centers remain the largest charcoal consumers. Over 1 million tons of

charcoal is consumed annually, of which Dar es Salaam City consumes more than 60 percent, the quantity is predicted to be double by 2030.

Biomass is mainly from forests that is harvested traditionally and unsustainably. More than 1 million people engage in charcoal production and supply. Additional to forestry biomass, there are residues or wastes from agriculture and forest. They include agricultural crop residues, such as coffee husks, rice husks, coconut husks, and sisal, cashewnut, cotton, wheat and other crop residues that result from agro-processing; and animal wastes. Forestry wastes including sawdust, shavings, thinning and other residues that come from harvesting, cutting and processing forest resources primarily for timber, pulp and paper, are potentially extensive alternative biomass resources. Biomass is presently also used for grid generation (around 18 MW) and by the agro-industry to generate its own electricity (about 58 MW estimated). Currently, the installed capacity of sugar industries for power generation through co-generation from the bagasse is about 40 MW.

e) Geothermal

Tanzania has significant geothermal potential exceeding 5,000 MW, with most prospects located in the East African Rift System. Geothermal prospects are grouped into main three zones, namely, the northeaster zone with regions of Mara, Kilimanjaro, and Arusha; the south-western zone with regions of Rukwa and Mbeya; and the eastern coastal belt zone in Rufiji Basin. The Government through the Tanzania Geothermal Development Company (TGDC) has completed four detailed surface studies on developing areas such as Ngozi and Kiejo-Mbaka in Mbeya region, Songwe in Songwe region, and Luhoi in Coast region.

CHAPTER THREE

SITUATIONAL ANALYSIS

Land is under increasing pressure stemming from competition for access, changing consumption patterns and the drive for greater economic growth. These have resulted in land degradation in many parts of the country. Land degradation is caused by many factors acting alone or in combination, concurrently or one at a time, yet progressively. Human activities including unsustainable farming, overgrazing, over exploitation of forest resources; and inadequate land use management are the causes of land degradation, which changes the quality of the land.

3.1 State of Land Degradation and Affected Ecosystems

The general trends of land degradation in the country reveals that it has increased from 42% in 1980 to about 80 percent (46 percent being moderate and 34 percent highly degraded) of the total land area is degraded at varying rates (**Figure 2**). The extent and magnitude vary across regions, depending on the type and intensity of the economic activities that drive the degradation. The highly degraded areas in the country are, Tabora, Dodoma, Singida, Shinyanga, Lindi, Pwani, Simiyu, Manyara and Arusha. Moderately degraded areas include Iringa, Songwe, Katavi, Mara, Mwanza, Tanga and Morogoro. Very few areas in the country have low level of Degradation. These include, Kagera, Geita, Kigoma, Njombe, Kilimanjaro and Ruvuma.

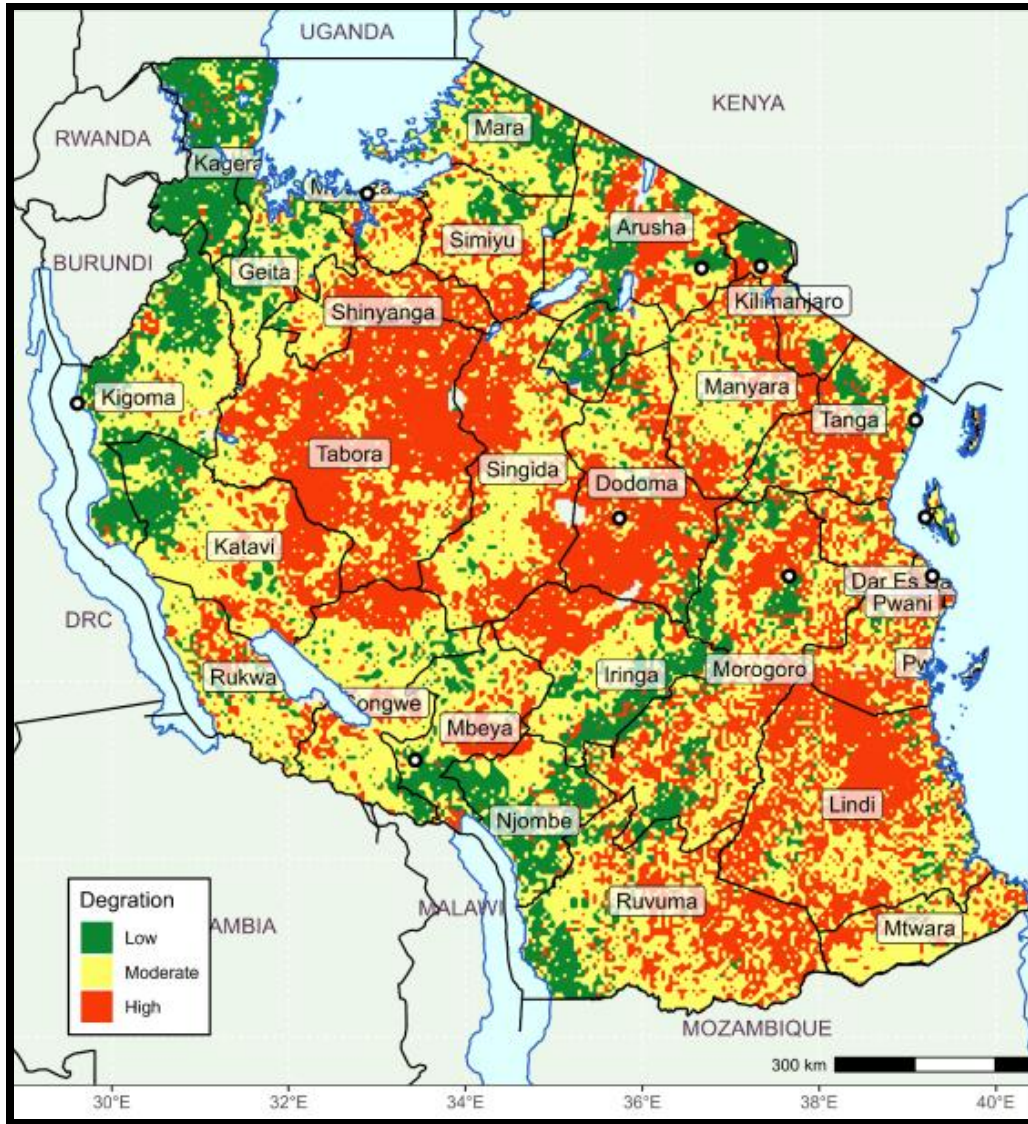


Figure 2: Map indicating land degradation severity map in Tanzania (URT, 2022)

3.2 Causes of Land Degradation

Land degradation is associated with unsustainable human activities that cause removal of land cover, soil loss and loss of soil quality. The activities include unsustainable agriculture, deforestation, overgrazing, unsustainable mining activities, bush fires and proliferation of invasive species. Human activities and climate change influence the changes in land use and land use cover which affects the status of land degradation.

i) Unsustainable agriculture

The unsustainable agricultural activities include agricultural expansion, cultivation on steep slopes, cultivation within 60m from river banks, cultivation in valley bottom (*vinyungu*) and

river banks, misuse of agrochemicals (fertilizers and pesticides) and mismanagement of irrigation water. For instance, valley bottom cultivation “vinyungu” which has now changed to commercial level, contributes to land degradation through obstruction of water flow downstream, sedimentation, and contamination of river water by agrochemicals. Areas affected most are Iringa, Njombe, Mbeya and Songwe. Cultivation in riverbanks, is mostly evidenced in Morogoro, Pwani, Mbeya, Njombe, Iringa.

ii) Overgrazing

Livestock grazing when sustained at acceptable levels has ecological importance in terrestrial ecosystems. However, overgrazing causes ecological consequences in the ecosystem and contributes to land degradation. The livestock population has dramatically increased contributing to reduced land cover, increase soil erodibility and making the land fragile and prone to other agents of degradation. The livestock census in 2008 and 2020 shows that livestock population has increased dramatically in the southern part of the Country as there has been increasing migration from the northern semi- arid areas to the southern part. There has been very high increase in livestock population in Kigoma (846.1%), Mtwara (700.1%), Lindi (562.47%), Ruvuma (498.1%), Pwani (189.6%), Iringa (133.6), (Njombe (125%), Mbeya (119.5%), and Tanga (106.1%). The drastic increase in cattle population has aggravated land degradation to the southern part of the country.

iii) Mining activities

Unsustainable mining activities cause serious physical disturbance to the land, river banks and bed, hence accelerate soil erosion and siltation. Abandoned open pits, tailings and waste rocks which remain after mining of metallic, gemstones and building materials. Mining activities also contribute to erosion and sedimentation in rivers and river banks. The other factor that contributes to land degradation includes deforestation, which involves forest clearing for timber, fuelwood and construction material. Deforestation removes the land cover and leaves the land unprotected and prone to other agents of land degradation.

iv) Inadequate land-use planning

Land use planning is an important tool to ensure that land is used on a sustainable basis. In Tanzania, much of land, especially the village land is used without formally approved land use plans, resulting in unsustainable use of land such as overstocking and unplanned settlements. Out of 12,450 villages in Tanzania, it is only about 2,370 villages have been surveyed and land use plans prepared (NLUPC, 2021). About half of the 48 Local Government Authorities (LGAs) surveyed in 2017/18, (52%) ranked inadequate land-use management as the highest driver to land degradation in their areas of jurisdiction.

v) Culture and beliefs

Unsustainable land management practices built up over generations have often become part of cultural fabric of traditional pastoral and peasant farming communities. Pastoral/nomadic livestock keeping practices is one of the long-standing unsustainable land uses practice in

Tanzania. This culture is built upon keeping large herds of cattle often for prestige, exceeding the carrying capacity of grazing land. Under this culture, land is viewed as open access and the herdsmen move with their large herds of cattle from one place to another in search for fodder and water. Some of these communities include agro-pastoral Sukuma, Barbaig and Maasai.

3.3 Impacts of Land Degradation

i) Loss of agriculture and grazing land

Land degradation causes decline in soil fertility and productivity, crop and pasture production hence diminishing arable land. Degradation can also cause decrease in arable land through physical soil removal and formation of gullies. The loss of land productivity further leads to limited growth of pasture and hence reduce grazing land. This is evidenced in most dryland areas of Arusha, Manyara, Simiyu, Dodoma, Shinyanga and Singida.

ii) Deterioration of water sources

Land degradation is associated with catchment degradation which leads to soil erosion and sedimentation in riverbeds that cause degradation of water quality. Degradation of catchments reduce the catchment capacity to retain rainwater and maintain gradual water flow downstream. This reduces perennial flow of water which makes some rivers to become seasonal and increase flood incidences due to increased surface runoff.

iii) Migration and land conflicts

Excessive land degradation triggers migration of people and their livestock in search for productive land, fodder and water. Grazing land in semi-arid areas such as Shinyanga, Mwanza, Simiyu, Dodoma and Manyara, have been affected by overgrazing, recurring droughts and subsequent soil erosion. As a result, livestock-keepers move to other areas, often to agriculture production areas searching for water and fodder. This results in conflicts of farmers-livestock keepers, in various places of the country such as Rufiji (Pwani Region), Mvomero, Kilosa and Kilombero (Morogoro Region) and Mbarali (Mbeya Region).

iv) Biodiversity loss

Land degradation leads to removal of vegetation cover which consists of a number of species. The vegetation is also a habitat to a number of faunas which when the vegetation is removed, their habitat is lost and hence their survival is threatened. Widespread deforestation could lead to loss of biodiversity. Logging of the most valuable timber species such as *Milicia excelsa* (*Mvule*), *Pterocarpus angolensis* (*Mninga*) and *Dalbergia melanoxylon* (*Mpingo*) has led to threaten the species to extinction.

Continued biodiversity loss, unsustainable utilization and associated degradation of a wide range of ecosystem services amounts to at least 5 percent of the national GDP and affects most severely the poor communities who depend most directly on their immediate environment for survival.

3.4 National Initiatives

a) Mainstreaming of NAP into national policies, plans, programmes and strategies

Mainstreaming sustainable land management is at the forefront of development planning and policy formulation across all sectors in the country. Guidelines of mainstreaming NAP into sectoral Policies, Plans and Programmes were prepared and published in 2014. The Guidelines are meant to ensure that relevant policies, plans, programmes integrate sustainable land management (SLM) with a wider-reaching set of outcomes towards achieving sustainable development. Sectors that have made substantial efforts in mainstreaming DLDD include Agriculture, Forestry, Tourism, Wildlife, Energy, Mining, Fisheries, Livestock, and Water .

b) Promoting SLM best practices

A series of best practices for SLM has proven to be successful in the country which are documented in the Compendium of Best Practices for Sustainable Land Management in Tanzania (2014). Common SLM best practices being practiced in in the country are listed in **Table 1**.

Table 1: List of common SLM best practices in Tanzania

Sector	SLM practice	Specific type
Agriculture	Conservation agriculture	<ul style="list-style-type: none"> • Minimum tillage • Cover crops • Crop rotation • Contour bunds (ridge terraces or stones) • Mulching • Intercropping with leguminous cover crops • crop residue management
	Soil and water conservation	<ul style="list-style-type: none"> • Crop residues management • drip/trickle irrigation • Rice intensification • Rainwater harvesting • Pit and trench farming • Terracing • Ridging • Tie-ridging • Excavated bunded basins (<i>majaluba</i>) • Composting
	Cropland management	<ul style="list-style-type: none"> • Crop diversification • Green manuring
	Soil fertility management	<ul style="list-style-type: none"> • Integrated soil fertility management • Integrated Plant Nutrient Management • Manuring and compost manure • Efficient use of fertilizer (micro dosing) • Ngoro pits

Sector	SLM practice	Specific type
	Agro-forestry	<ul style="list-style-type: none"> • tree in crop land • rotational wood lot • improved fallow • fodder bank
Livestock	<ul style="list-style-type: none"> • sustainable grazing land management 	<ul style="list-style-type: none"> • Pasture farming • Proper livestock carrying capacity • Intensive livestock keeping practice Traditional fodder conservation – <i>ngitiri</i> • Establishment of community grazing areas in each district of Zanzibar • Establishment/digging of water wells and proper irrigation drainage system at Kizimbani pasture museum for sustainable pasture farming • Performing on farm research on drought resistance pasture species
	<ul style="list-style-type: none"> • Water availability and conservation 	<ul style="list-style-type: none"> • Water melons (<i>Citrus vulgaris</i>) as an alternative source of water for livestock • Charco /earth dams • Rainwater harvesting and preservation • Boreholes
Water Resources	<ul style="list-style-type: none"> • Water storage and conservation of water sources 	<ul style="list-style-type: none"> • Subsurface dams • Rain water harvesting • Road runoff harvesting • Silt trapping • Stream-flow diversions (<i>Ndiva</i>)
Fisheries	<ul style="list-style-type: none"> • Aquaculture 	<ul style="list-style-type: none"> • Fish ponds • Mariculture • integrated aquaculture • cage culture • sustainable fishing
Energy	Energy efficient cooking stoves	
	Renewable Energy Sources	<ul style="list-style-type: none"> • Photovoltaic solar power • Wind power • Biogas
Wildlife	<ul style="list-style-type: none"> • Sustainable wildlife management 	<ul style="list-style-type: none"> • National Parks • Wildlife Management Areas (WMAs) • Game Reserves • Game Controlled areas • Sustainable use of wildlife in protected areas Zanzibar • Zoo establishment • Establish wildlife breeding site in small islands with minimum human impact • Wildlife conservation club

Sector	SLM practice	Specific type
		<ul style="list-style-type: none"> • Trophy hunting in Community forests • Establishment of Bee reserves in community forest
Forestry	Indigenous vegetation conservation technologies	<ul style="list-style-type: none"> • Spiritual and traditional beliefs • natural regeneration • Tree planting in degraded areas • Friendly eco-tourism investment • Improved cooking stoves (Majiko mkombozi) • Carbon trading
	Participatory Forest Management	<ul style="list-style-type: none"> • Joint Forest Management (JFM) • Community Based Forest Management (CBFM) • Community Forest Management Agreement (COFMA) •
	Alternative Income generating activities	<ul style="list-style-type: none"> • Butterfly farming • Pottery • Crab fattening, • Beekeeping • Mat weaving • Investment in forest area • Ecotourism • Spice growing • Establishing zoos • Fish farming in mangroves

c) Restoration and rehabilitation

Restoration and rehabilitation of degraded lands is practiced in order to assist with the recovery of ecosystem functions and services. Tanzania has pledged to restore 5.2 million ha by 2030, under the African Forest Landscape Restoration Initiative (AFR 100). Some of the practices being promoted and implemented include tree planting through which each district is required to plant 1.5 million trees annually; agroforestry; indigenous forestation practices like *ngitili*; destocking; alternative sources of energy; sustainable crop and livestock intensification; and Participatory Forest Management (PFM). On other hand through the same programme African Forest Landscape Restoration Initiative (AFR 100) Zanzibar aimed to restore 25,000 ha through enrichment planting in protected areas, natural regeneration, and woodlot.

Several programmes that are implemented with regional approach such as Lake Tanganyika Sustainable Management Programme, Mara River Environmental Project, Songwe River Project, Lake Victoria Environmental Management Project, and Nile basin Transboundary Programme were collaborative with neighbor countries. These programmes have helped improve the environmental situation of the respective ecosystems, contribute to poverty reduction and improve food security of adjacent communities.

d) Drought risk management and early warning systems

Tanzania has specific disaster drought risk management and early warning systems in Agriculture, Livestock, Forest and Wildlife sectors. For instance, the Ministry of Natural

Resources and Tourism has wildfire monitoring system using GIS and remote sensing. Further, Tanzania Meteorological Agency (TMA) monitors weather and climate and provides early warning information. Tanzania is also collaborating with other regional early warning centers (GACOF-Nairobi, SADC-Botswana, Indian Ocean Center-Reunion) through sharing meteorological data and early warning information.

e) Promoting alternative livelihoods

Traditional livelihoods have been observed as land-intensive practices, such as agriculture and production of land-based goods. The inability of these systems to meet the needs of growing populations along with the pressures of intensive use of marginal lands has led to vested interests in alternative livelihood sources.

Some of the alternative livelihoods being promoted and implemented in the country include: beekeeping (traditional and commercial using commercial beehives and modified traditional beehives) in Singida and Tabora Regions; butterfly farming in Eastern Arc Mountains - Muheza, Tanga.; eco-tourism; handcrafts (including pottery and mat making); spice growing - Muheza Tanga Region; aquaculture; horticulture; and keeping small ruminants and poultry.

f) Establishing knowledge sharing systems

Knowledge sharing systems are common platforms meant to strengthen and improve DLDD information generation, management, dissemination, sharing and exchange for policy and decision makers, public, media and other key stakeholders.

Several such systems exist in the country including:

- i) *Tanzania Climate Smart Agriculture Alliance (TCSAA)*: is a platform for the promotion of Climate Smart Agriculture (CSA) across United Republic of Tanzania (Mainland and Zanzibar), with the aim of creating a truly national and broad-based forum on CSA in Tanzania through effective linkages with key CSA initiatives at the Region, Africa and Global levels;
- ii) *Tanzania Biodiversity Information Facility (TanBIF)*: promotes mobilization, sharing and utilization of biodiversity data and information in Tanzania;
- iii) *Tanzania Biosafety Clearing House*: This is a mechanism set up to facilitate the exchange of information on a variety of scientific, technical, environmental, legal and capacity building information on Living Modified Organisms (LMOs);
- iv) *The Agricultural Sector Stakeholders Database*: The purpose of this database is to improve visibility of agricultural investments and interventions to help the Government strategize better and make informed decisions.

- v) *Ministerial Gender desks*: All Government Institutions have dedicated desks responsible for addressing gender issues relevant to the sector/institution knowledge and technology inclusive.
 - vi) *Tanzania Association of Women Leaders in Agriculture and Environment (TAWLAE)* implemented a project for scaling up sustainable Climate Smart Agro-ecology practices for enhanced food security and Environmental Conservation in Serengeti Ecosystem. The project aimed at capacity building of Women on sustainable livelihoods, greenhouses farming and poultry keeping.
- g) *Improving access to safe drinking water in affected areas*

Water is used for different purposes ranging from water supply for domestic use, hydropower production, recreation, irrigation and livestock watering, fisheries, and biodiversity conservation, industrial production and navigation. Irrigation is by far the largest consumptive use comprising about 89 percent of the total, with domestic water supply comprising 9 percent and industrial water use 2 percent.

Water supply coverage in Tanzania is 86.2 percent and 47.9 percent for urban and rural areas, respectively. Nearly nine in ten households (87.8 percent) use water from improved water sources during the rainy season while 73.0 percent uses such water during the dry season. Despite these figures, it is worthwhile to note that more than one third of water in urban areas is lost through a leakage that is about 37 percent and 41.8 percent for other urban areas and Dar es Salaam, respectively.

3.5 Mobilization of Financial and Non-Financial Resources

a) Bilateral and multilateral funding mechanisms

Tanzania has implemented projects and programs relevant to the UNCCD through the support of bilateral and multilateral sources including the Global Environment Facility (GEF), Africa Development Bank and Adaptation Fund. Some of the projects implemented are: Lake Tanganyika Sustainable Environmental Management Programme; Lake Victoria Environmental Management Programme; Sustainable Land Management Programme in Kilimanjaro Region; Sustainable Land Management Programme in Tabora Region; and Sustainable Land management in Ruvu and Zigi Catchments.

b) Public resources

Trends in national-level financing for activities relevant to the implementation of the Convention has been inadequate but generally stable. This includes Government Budget allocated to activities related to tree planting, forest management and conservation, land use planning, promotion of alternative energy, and rehabilitation of degraded areas.

c) Innovative sources of finance, including from the private sector

Amount of resources mobilized from innovative sources of finance, including from the private sector for activities relevant to the implementation of the Convention has been inadequate but generally increasing. Typical innovative sources of funding included the following:

- i) Part of revenue raised from forest sector is allocated to Tanzania Forest Fund for tree planting and other land conservation activities;
- ii) Revenue raised by National Environment Management Council through fines, fees and penalties is used for funding its operations;
- iii) Private companies also funding UNCCD related activities including financial institutions, private companies and mobile companies.

3.6 Assessment of Implementation of the National Action Programme (NAP) (2014)

The NAP (2014) provided a framework for action to combat the accelerating threats of desertification in the country. Overall implementation of NAP has had mixed results (**Table 2**).

Table 2: Key achievements made and challenges encountered in implementation of NAP (2014)

Sector	Achievements	Challenges
Environment	<ul style="list-style-type: none"> • National Environment Policy (2021) • National Environmental Master Plan for Strategic Interventions (2022-2032) • National Climate Change Response Strategy (2021-2026) • Nationally Determined Contribution (2021) • Land Degradation Neutrality Target Setting in Tanzania (2020) • National Invasive Species Strategy and Action Plan (2021-2029) • National Guidelines and Regulations (2022) for governing carbon trading in Tanzania • Engagement with Green Great Wall Initiative (GGWI) which aims to restore the degraded land of Africa. • Accreditation of institutions to serve as Implementing Entities of Multilateral Funding Mechanisms including Green Climate Fund (GCF) and Adaptation Fund. • Zanzibar Environmental Policy 2013 • Zanzibar Green Legacy Initiative • Climate Change Strategy 2014 • Zanzibar Biodiversity Finance Plan 	<ul style="list-style-type: none"> • Persisting land degradation countrywide • Limited financing for addressing DLDD • Low public awareness on DLDD issues • Inadequate engagement of private sector and CSOs in addressing DLDD
Agriculture	<ul style="list-style-type: none"> • Agricultural Land use Master Plan • Agriculture Climate Resilience Plan (ACRP) (2014-2019) and Climate Smart Agriculture Guidelines (2017) • Area under irrigation has increased from 461,324 ha to 694,715 ha 	<ul style="list-style-type: none"> • Unsustainable agricultural activities include agricultural expansion, cultivation on steep slopes, cultivation within 60m from river banks, cultivation in valley bottom (vinyungu) and river banks, misuse of agrochemicals (fertilizers and pesticides) and mismanagement of irrigation water.
Livestock	<ul style="list-style-type: none"> • Tanzania Livestock Master Plan (2017/18-2021/22) and Strategy for Reliable Access to Grazing and Water for Livestock (2018) were prepare • Livestock were evicted from Ihefu wetland (about 150 km²) in 	<ul style="list-style-type: none"> • Overgrazing and nomadic pastoral practices • Migration and land use conflicts • Shrinking of rangelands • Inadequate livestock infrastructure

Sector	Achievements	Challenges
	2006/2007 which has resulted into regeneration of vegetation and increased water level.	<ul style="list-style-type: none"> • Invasive Species
Forest	<ul style="list-style-type: none"> • Tree planting campaign through which a total of 382.1 million trees were planted country-wide between 2015 and 2020 • 4,122,500 hectares which is about 12% of all forests in the country are managed through PFM and 60,000 ha through COFMA • A total of 1,734 ha of new commercial plantations were established including Wino (Songea), Iyondomsimwa (Ileje), Silayo (Chato), Mpepo (Mbinga), Buhigwe (Kigoma) and Mtibwa/Pagale (Mvomero). In addition, a 50,000-ha acacia plantation for production of gum was established in Iramba, Singida; 	<ul style="list-style-type: none"> • Overdependence on fuel wood and charcoal as sources of energy (85% of the energy demand) • Unsustainable farming practices • Wildfire/Bush fire • Tobacco Curing • Increasing demand and trade for plant and animal species • Increasing demands of pegs for seaweed farming
Wildlife and forest (protected areas)	<ul style="list-style-type: none"> • 40% of the total land area is protected • 33 Wildlife Management Areas (WMAs) covering more than 30,000 km² (or about 8% of the wildlife protected area) involving about 300 villages • 77 Important Bird Areas (IBAs) covering a total of more than 168,000 km² or about 18% of the total land area 	<ul style="list-style-type: none"> • Invasion by exotic (non-native) species is a significant management issue in some areas, including within protected areas.
Minerals	<ul style="list-style-type: none"> • Efforts towards formalization of artisanal miners 	<ul style="list-style-type: none"> • Unsustainable mining activities cause serious physical disturbance to the land, river banks and bed, hence accelerate soil erosion and siltation. • Abandoned open pits, tailings and waste rocks which remain after mining of contributes to land degradation through reduced land functionality •
Energy	<ul style="list-style-type: none"> • Deployment of energy efficient firewood and charcoal cooking stoves • Biogas plants have been installed countrywide for domestic consumers • Natural gas distribution services for domestic and industrial use 	<ul style="list-style-type: none"> • Overdependence on fuel wood and charcoal as sources of energy (85% of the energy demand)

Sector	Achievements	Challenges
Land	<ul style="list-style-type: none"> • National Land Use Framework Plan (2013-2033) was prepared. • Out of 12,450 villages in Tanzania, about 2,370 villages have been surveyed and land use plans prepared 	<ul style="list-style-type: none"> • Inadequate formulation and/or enforcement of land use plans at national and local government authority levels • most of the land remains open access for various activities such as pastoralism and shifting cultivation
Water resources	<ul style="list-style-type: none"> • Integrated Water Resources Management and Development (IWRMD) Plans have been prepared for all nine (9) water basins; • A total of 133 water sources have been demarcated, whereas 18 water sources have been gazetted in all nine water basins • Water Resources Management Strategic Interventions and Action Plan to Implement Climate Change Adaptation (2013-2018) 	<ul style="list-style-type: none"> • Unsustainable human activities in water catchment basins • Encroachment of water sources
Waste management	<ul style="list-style-type: none"> • Improved collection of solid waste in urban areas from an average of about 5% in 1990's to 50% to date and provision of sewerage systems covering about 10% to 15% of the urban population • Licensing system for collection, recycling and export of hazardous waste 	<ul style="list-style-type: none"> • Inappropriate and haphazard disposal of both solid waste and wastewater • Inadequate urban planning
Financial resources	<ul style="list-style-type: none"> • Modest Government budget was allocated to address some of the DLDD related challenges • At the operational phase of application for GEF-6 funding for July 2014-June 2018, the United Republic of Tanzania became eligible for development and implementation of projects worth US\$ 21.2 million for biodiversity protection, US\$ 7.3 million for climate change and about US\$ 8.6 million for land degradation. 	<ul style="list-style-type: none"> • Inadequate mechanisms to mobilize needed resources. • Inadequate engagement of private sector especially the banking and industry sub-sectors as potential source of finance for the implementation of the NAP.

Other major factors responsible for the inadequate implementation of NAP (2014) included:

- i) insufficient capacity of central and local government authorities to coordinate the planning, formulation and implementation of projects addressing DLDD-related activities;
- ii) Inadequate institutional capacity on law enforcement;
- iii) Inadequate formulation and/or enforcement of land use plans at national and local government authority levels;
- iv) Low level of awareness of DLDD issues among key stakeholders;
- v) Inadequate mechanisms to mobilize needed resources for implementation particularly from local (governmental budget and private sector) with less focus on innovative financial resource mobilization;
- vi) The role of private sector especially the banking and industry sub-sectors as potential source of finance for the implementation of the NAP was overlooked, particularly considering the role they can play in facilitating and augmenting the existing investments made by land managers.

CHAPTER FOUR

THE NATIONAL ACTION PROGRAMME

The National Action Programme (NAP) to Combat Desertification describes its goal and objectives; key planning frameworks; and the Action Plan entailing priority actions, targets, indicators and means of verification.

4.1 Goal and objectives

The goal of the NAP is to prevent, halt and where possible reverse the effects and impacts of desertification, land degradation and drought, in order to contribute to poverty alleviation, reduce loss of biodiversity, adapt to climate change, improve livelihoods, achieve land degradation neutrality and sustainable development goals (SDGs), for the benefit of current and future generations.

The specific objectives of the NAP are to:

- i) improve the condition of affected ecosystems, combat desertification and land degradation, promote sustainable land management and contribute to land degradation neutrality;
- ii) improve the living conditions of affected populations;
- iii) mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems;
- iv) generate national and global environmental benefits through effective implementation of the UNCCD; and
- v) mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level.

4.2 Key Planning Frameworks for NAP

4.2.1 UNCCD Strategic Plan and Framework (2018-2030)

The UNCCD Strategic Framework (2018-2030) is a new global roadmap to address land degradation that was adopted at the UNCCD COP13 in September, 2017. It is a global commitment to achieve Land Degradation Neutrality (LDN) in order to restore the productivity of vast swathes of degraded land, improve the livelihoods of more than 1.3 billion people, and to reduce the impacts of drought on vulnerable populations.

The general objective of the Strategic Framework is to avoid, minimize and reverse desertification and land degradation, mitigate the effects of drought and strive to achieve a land degradation-neutral world. It targets five strategic objectives, clarified in each case by a list of actions for their implementation and the expected impacts. **Table 3** presents the operational objectives of the Strategy, expected impacts and indicators.

Table 3: Strategic objectives of the UNCCD Strategic Framework (2018-2030)

Strategic objective	Expected impacts	Indicators
<p>Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality</p>	<ul style="list-style-type: none"> • Expected impact 1.1: Land productivity and related ecosystems services are maintained or enhanced. • Expected impact 1.2: The vulnerability of affected ecosystems is <i>reduced</i> and the resilience of ecosystems is increased. • Expected impact 1.3: National voluntary land degradation neutrality targets are set and adopted by countries wishing to do so, related measures are identified and implemented, and necessary monitoring systems are established. • Expected impact 1.4: Measures for sustainable land management and the combating of desertification/land degradation are shared, promoted and implemented. 	<ul style="list-style-type: none"> • SO 1-1: Trends in land cover • SO 1-2: Trends in land productivity or functioning of the land • SO 1-3: Trends in carbon stocks above and below ground
<p>Strategic objective 2: To improve the living conditions of affected populations</p>	<ul style="list-style-type: none"> • Expected impact 2.1: Food security and adequate access to water for people in affected areas is improved. • Expected impact 2.2: The livelihoods of people in affected areas are improved and diversified. • Expected impact 2.3: Local people, especially women and youth, are empowered and participate in decision-making processes in combating DLDD. • Expected impact 2.4: Migration forced by desertification and land degradation is substantially reduced. 	<ul style="list-style-type: none"> • SO 2-1: Trends in population living below the relative poverty line and/or income inequality in affected areas • SO 2-2: Trends in access to safe drinking water in affected areas
<p>Strategic objective 3: To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems</p>	<ul style="list-style-type: none"> • Expected impact 3.1: Ecosystems' vulnerability to drought is reduced, including through sustainable land and water management practices. • Expected impact 3.2: Communities' resilience to drought is increased. 	<ul style="list-style-type: none"> • Monitored through qualitative information

Strategic objective	Expected impacts	Indicators
<p>Strategic objective 4: To generate global environmental benefits through effective implementation of the UNCCD</p>	<ul style="list-style-type: none"> • Expected impact 4.1: Sustainable land management and the combating of desertification/land degradation contribute to the conservation and sustainable use of biodiversity and addressing climate change. • Expected impact 4.2: Synergies with other multilateral environmental agreements and processes are enhanced. 	<ul style="list-style-type: none"> • SO 4-1: Trends in carbon stocks above and below ground • SO 4-2: Trends in abundance and distribution of selected species • SO4-3: trends in adaptive capacity to climate change impacts • SO4-4: trends in resilience to climate change impacts.
<p>Strategic objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level</p>	<ul style="list-style-type: none"> • Expected impact 5.1: Adequate and timely public and private financial resources are further mobilized and made available to affected country Parties, including through domestic resource mobilization. • Expected impact 5.2: International support is provided for implementing effective and targeted capacity-building and “on-the-ground interventions” in affected country Parties to support the implementation of the Convention, including through North–South, South–South and triangular cooperation. • Expected impact 5.3: Extensive efforts are implemented to promote technology transfer, especially on favourable terms and including on concessional and preferential terms, as mutually agreed, and to mobilize other non-financial resources. 	<ul style="list-style-type: none"> • SO 5-1: Trends in international bilateral and multilateral official development assistance • SO 5-2: Trends in domestic public resources • SO 5-3: Trends in number of co-financing partners • SO 5-4: Resources mobilized from innovative sources of finance, including from the private sector • SO 5-5: Total amount of approved funding for developing countries and countries with economies in transition to promote the development, transfer, dissemination and diffusion of environmentally sound technologies • SO 5-6: Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation • SO 5-7: United States dollar value of financial and technical assistance, including through North–South, South–South and triangular cooperation, committed to developing countries and countries with economies in transition

4.2.2 National Environmental Master Plan for Strategic Interventions (2022-2032)

Tanzania's economy is largely dependent on natural resources. However, unsustainable utilization driven by over-dependence on natural resources has increased pressure on these resources resulting into environmental degradation. This affects a range of ecosystems that subsequently results to an economic loss of at least five percent (5%) of the national Gross Domestic Product (GDP). Despite Government initiatives put in place including national policies and legislations, environmental challenges persist. One of the factors exacerbating this situation is limited spatial information on environmental degradation and their appropriate intervention options resulting into formulation of interventions that are generic, inappropriate to specific areas and duplication and misallocation of limited resources at local and national level. In view of that, the Government has developed National Environmental Master Plan for Strategic Interventions (NEMPSI).

The Master Plan serves as a blueprint for environmental management in the country. The overall objective of the NEMPSI is to guide strategic and coordinated environmental interventions at all levels, based on spatial variation of environmental challenges and intervention options. The specific objectives of the master plan are to:

- i) Provide the existing status of environmental challenges, indicating the causal effect, existing initiatives and constraints;
- ii) Provide the direction of required changes;
- iii) Indicate priority focus areas for interventions; and
- iv) Establish realistic and fact-based intervention options for addressing the environmental challenges.

The NEMPSI covers all regions of the Mainland Tanzania and zooms-in at a local scale and ecosystem level. It addresses environmental challenges identified by the National Environment Policy (2021) and other relevant national policies. It has identified a total of twelve (12) key environmental challenges facing the country including land degradation; deterioration of water sources; impacts of climate change; environmental pollution; deforestation and forest degradation; loss of wildlife habitat and biodiversity; deterioration of coastal and marine ecosystem; wetland deterioration; inadequate waste management; urban environmental challenges; proliferation of invasive species; and inadequate environmental governance.

With reference to land degradation, it is revealed that the extent of land degradation has increased from 42% in 1980 to 80% (whereby 46% is moderate and 34% is highly degraded) in 2018. The highly degraded areas are found in Tabora, Dodoma, Singida, Shinyanga, Lindi, Pwani Simiyu, Manyara, Arusha, and Ruvuma regions while the moderately degraded areas include Iringa, Songwe, Katavi, Mara, Mwanza, Tanga and Morogoro.

4.2.3 Voluntary National Land Degradation Neutrality (LDN) Targets

The concept of Land Degradation Neutrality (LDN) emerged from the United Nations Conference on Sustainable Development (Rio+20) in 2012 which envisage to secure enough healthy and productive natural resources by adopting sustainable land management policies and practices to minimize current, and avoid future, land degradation; and restoring degraded and

abandoned lands. The LDN was also adopted as one of the Sustainable Development Goals (SDGs) - (Goal 15.3). The objective of LDN is to maintain the amount of healthy and productive land resources over time in line with national sustainable development priorities through Sustainable Land Management (SLM) practices and ecosystem restoration.

Tanzania participated in the Land Degradation Neutrality (LDN) Targets Setting Programme in 2018, supported by the UNCCD, which aimed to identify the LDN baseline and define voluntary national LDN targets so as to be able to evaluate the effectiveness of the actions taken to address problems of land degradation towards achieving land degradation neutrality. The voluntary LDN targets set are presented in **Table 4 and 5**.

Table 4: Voluntary land degradation neutrality target(s)

Target	Year
1. Restore 11,011,950 ha of forests through sustainable forest management	2030
2. Prevent and avoid decline of land productivity of forests on 2,640,600 ha	2030
3. Improve land productivity of shrub and grassland on 1,714,500 ha	2030
4. Improve land productivity of croplands on 8,462,500.5 ha	2030
5. Improve land productivity of wetlands on 361,275ha	2030
6. Increase soil organic carbon in cropland to 54.5 tons/ha	2030
7. Reduce soil erosion (loss of top soils) by 19tons/ha	2030

Table 5: Additional targets relevant to Strategic Objective 1

Target	Year
1. 60 percent reduction of charcoal Consumption in urban area	2030
2. 100 million tree planted country wide	2030
3. Access to clean and safe drinking water in rural areas improved from 72 percent to 85 percent	2030
4. Village Land Use Plans increased to 30 percent	2030
5. Rural Population with Access to clean water increased to 90 percent	2030
6. Increased tree seed orchards from 160 ha to 1,000 ha	2030
7. Improved and increased botanical gardens from 8 to 15	2029
8. Non-wood forest products species planted for commercial production increased from 0 to 20	2029
9. Restore 5.2 million ha of degraded forest landscapes	2030
10. Increased area of commercial forest plantations to 1,850,000 ha	2030
11. Increased number of large projects approved and complying with EIA and Audit Regulations	2030
12. Increase Number of Nature Reserves from 17 to 35 in order to increase forest Cover	2030

4.3 Synergies

The implementation of the NAP will involve joint planning and programming for the implementation of the Rio Conventions (the United Nations Framework Convention on Climate Change; the Convention on Biological Diversity; and the United Nations Convention to Combat Desertification) and the 2030 Agenda on Sustainable Development. Efforts will be made to link climate change adaptation and mitigation initiatives with the underlying causes of DLDD, in addition to linking the NAP with the need for institutional capacity development at all levels. In

this context, the implementation of the NAP would adopt holistic strategies that focus on improved productivity of land, rehabilitation, conservation and sustainable management of land resources, contributing to improved living conditions of communities.

4.4 The Action Plan

Table 6 presents the Action Plan to Combat Desertification indicating priority activities that will be implemented for the period from 2023 to 2030. The Action Plan also includes targets, indicators, indicative budget, timeframe, means of verification, and responsible institution.

Table 6: The Action Plan

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
Specific objective 1: To improve the condition of affected and likely to be affected ecosystems, combat desertification and land degradation, promote sustainable land management and contribute to land degradation neutrality by 2030						
1.1 Restore highly degraded areas and enhance Sustainable Land Management (SLM) in moderately and low degraded areas	70 percent	Proportion of agricultural land area restored in seriously degraded landscapes of Great Ruaha River, Wami-Ruvu River sub-basins, Uluguru Mountains and Eastern Watershed of Lake Victoria	50	2023-2030	Monitoring reports	LGAs, Ministry responsible for Lands, Livestock, Water, Agriculture, Minerals, and Natural Resources; NLUPC; TFS; TANAPA; Research and Academic Institutions, private sector, Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar, Lands Commission, Ministry of Water, Energy and Minerals Zanzibar.
	50 percent	Proportion of area of the other landscapes (non-agriculture and grazing) in the degradation hotspots (Dodoma, Singida, Tabora, Shinyanga, Pwani and Manyara and Zanzibar) restored through vegetation regeneration, afforestation, and gully rehabilitation	30	2023-2030	Monitoring reports	
	50 percent	Proportion of area of	30	2023-2030	Monitoring	

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
		degraded mountain ecosystems, primarily by soil erosion, which are important catchment areas restored through Soil conservation, agroforestry and best agricultural practices			Reports, Research reports	
	50 percent	Proportion of area restored in moderately degraded areas of Pangani Basin, western watershed of Lake Victoria, Kigoma, Katavi, Njombe, Iringa, Kilimanjaro, Manyara and Morogoro through soil erosion control practices, Soil fertility management, and climate smart agriculture	50	2023-2030	Monitoring Reports, Research Reports	
	50 percent	Proportion of area of degraded rangeland restored to reduce livestock feed/ water stress and livestock migration in the Lake Victoria and dryland zones of Mara, Mwanza, Simiyu, Shinyanga,	30	2023-2030	Monitoring reports	

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
		Tabora, Singida, Manyara, Arusha and Dodoma regions and Zanzibar				
1.2 Restore degraded landscape due to small-scale mining activities (Geita, Chunya, Nzega, Mara, Singida, Shinyanga Katavi, Mwanza, Manyara, Tanga, Morogoro Regions and Zanzibar)	25 percent	Proportion of excavated pits by small-scale mining that are refilled and vegetated	50	2023-2030	Monitoring reports	Mining Commission, Ministry responsible for Minerals, Lands, Livestock, Water, Agriculture, and Natural Resources; TFS; Research and Academic Institutions, private sector and CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar, Ministry of Water, Energy and Minerals Zanzibar.
	50 percent	Proportion of restored landscape affected by small-scale mining	40	2023-2030	Monitoring reports	
	50 percent	Proportion of the primary mining licenses that have developed and implemented plans to use plantation trees as alternative supporting poles in mining activities	0.5	2023-2030	Monitoring reports	
1.3 Restore highly deforested regions to ensure maximum provision of ecosystem services (Tabora, Shinyanga, Kigoma, Katavi, Micheweni, Chake-chake, North 'A', North 'B' and Central Districts in Zanzibar)	4	Number of highly deforested regions that have developed and implemented forest conservation programmes and projects	12	2023-2030	Monitoring Reports	LGAs, and MNRT, MAINL, MoW; VPO; TFS: private sector; and CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar,

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
	By June 2030	Programmes for forest fire management in forest areas strengthened and implemented	5	2023-2030	Monitoring reports	LGAs, VPO, and MNRT; TFS; private sector; and CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar,
	1.5 million trees annually	Number of trees planted by each district annually	20	2023-2030	Monitoring reports	
	By June 2030	Programmes to access carbon credit market through awareness creation and capacity building developed and implemented	20	2023-2030	Monitoring reports	
1.4 Develop and implement programmes for up-scaling use of alternative sources of energy for domestic cooking and industrial use	50 percent	Proportion of households, institutions and charcoal producers in highly deforested areas that use energy efficient technologies (cooking stoves and charcoal kiln)	1	2023-2030	Monitoring Reports, Household survey reports	Ministry responsible for Energy, VPO, REA, TPDC, NDC, Private Sector, Research and Academic Institutions CSOs and Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar.
	By June 2030	Establishment of infrastructure to support supply and accessibility	100	2023-2030	Monitoring Reports, Household	Ministry of Agriculture, Irrigation, Natural Resources and Livestock

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
		of natural gas for uses in households and industries promoted			survey reports	Zanzibar
	By June 2030	Cultivation of fast-growing tree species suitable for charcoal and commercial firewood production promoted	1	2023-2030	Monitoring Reports, Household survey reports	Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar
	By June 2030	Awareness programme on targeted behavioral change towards use of charcoal and firewood developed and implemented	5	2023-2030	Monitoring Reports, Household survey reports	
1.5 Develop and implement sustainable village land use plans and Community Forest Management Agreement (COFMA)	50 percent	Proportion of remaining 9,762 villages without land-use plans to reduce competition and conflict over natural resources.	85	2023-2030	Monitoring Reports	Ministry of Lands, LGAs; NLUPC; CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar, Zanzibar Commission of lands
1.6 Prepare and update regularly National Atlas of Land Degradation depicting land use, process of degradation and severity level	Prepared by June 2025 and updated by 2030	National Atlas of Land Degradation in place	1	2023-2030	Annual Reports	VPO, NBS, PO-RALG, NCMC, Academia Commission for Lands, Ministry of Water, Energy and Minerals Zanzibar

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
1.7 Review and disseminate a compendium of indigenous knowledge, best practices, appropriate technologies and success stories on SLM.	By June 2025	Reviewed compendium of best practices in place	0.5	2023-2025	Annual Reports	VPO, PO-RALG; Ministry responsible for Natural resources, Lands, Education, Water, Fisheries, Agriculture; TMA, CSOs; Academia; and Media, Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar, Zanzibar Commission for Lands
1.8 Enforce environmental compliance in development activities that pose land degradation risks (road construction, mining, urban development, waste management)	6,000	Number of development projects that comply to SEA and EIA regulations	1	2023-2030	Annual Reports	VPO, NEMC, PO-RALG, LGAs, Ministry responsible for: Works, Minerals, Energy, Industry; TANROADS, TARURA, Mining Commission, and private sector FVPO Ministry of Water, Energy and Minerals Zanzibar
Sub-total (1)			532			
Specific objective 2: To improve the living conditions of affected and likely to be affected populations by 2030						
2.1 Conserve, protect and manage water sources in a sustainable manner (Priority rivers include Kagera, Mara, Ruaha	By June 2030	Plans for restoration and management of land cover in water sources through tree planting and natural regeneration	5	2023-2030	Monitoring reports	Ministry responsible for Water, Agriculture, Livestock; Water Basin Boards; UWSSSAs; RUWASA; LGAs;

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
Mkuu, Momba, Lufurio, Wami and Ruvu Rivers; water basins of Lake Victoria, Lake Tanganyika, Lake Nyasa, Lake Rukwa; and wetlands of Mara, Malagarasi Malagarasi-Muyovosi Water catchment areas in Zanzibar		developed and implemented.				NEMC; VPO; Academia; CSOs and Ministry of Water, Energy and Minerals Zanzibar
	By June 2030	Program to promote sustainable livestock keeping including destocking, rangeland management and access to water for livestock developed and implemented	10	2023-2030	Monitoring reports	
	By June 2030	Sustainable agriculture through the adoption of best agricultural practices, conservation agriculture and climate-smart agriculture promoted	5	2023-2030	Monitoring reports	
	80 percent	Proportion of water	20	2023-2030	Annual	

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
		sources identified and conserved in DLDD affected areas			Reports, Monitoring Reports	
2.2 Promote alternative livelihoods of affected communities in DLDD affected areas	50 percent	Proportion of affected population involved in alternative livelihood activities in highly degraded Regions (Tabora, Dodoma, Shinyanga, Singida, Pwani and Manyara) and ecologically important Ecosystems in Unguja and Pemba	50	2023-2030	Monitoring Reports	LGAs, PO-RALG, Ministry responsible for Community Development, Natural Resources, Energy, Minerals, Agriculture, Water, CSOs and Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar,
2.3 Improve infrastructure in the areas affected by, or prone to DLDD	70 percent	Proportion of livestock keepers with access to livestock infrastructures in highly degraded Regions (Tabora, Dodoma, Shinyanga, Singida, Pwani Manyara, Unguja and Pemba ecologically important Ecosystems	100	2023-2030	Monitoring Reports	Ministry responsible for Livestock, Minerals Agriculture, Natural Resources, Land, Disaster Management and Fisheries, LGAs Ministry of Agriculture, Irrigation, Natural Resources and Livestock
	50 percent	Proportion of farmers with access to irrigation	500	2023-2030	Monitoring Reports,	Ministry responsible for Agriculture, Water; NIC;

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
		infrastructures in highly degraded Regions			Annual Report	PO-RALG, LGAs
Sub-total (2)			690			
Specific objective 3: To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems by 2030						
3.1 Prepare and implement National Drought Management Plan	By June 2025	National Drought Management Plan in place	0.5	2023-2025	Annual reports	PMO-Disaster Management; TMA; VPO, Ministry responsible for Agriculture, Livestock and Water; CSOs
	80 percent	Proportion of interventions from Drought Management Plan implemented	10	2023-2030	Annual reports, Monitoring reports	
3.2 Promote use of climate smart agriculture (CSA) practices and technologies	50 percent	Proportion of farmers practicing CSA in drought affected areas	5	2023-2030	Annual reports	Ministry responsible for Agriculture, Livestock, Land, Natural resources Fisheries and Water; Research and academic institutions; LGAs; District Authorities private sector; CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar, LGA Zanzibar

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
3.3 Develop and operationalize safety-net programmes.	80 percent	Proportion of population with access to safety-net programmes in DLDD affected areas	100	2023-2030	Monitoring reports, survey reports	PMO-Disaster Management; VPO, Ministry responsible for Agriculture, Natural resources Health, Water; PO-RALG, private sector, CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar.
3.4 Promote mainstreaming drought and disaster risk reduction strategies into LGA plans and budgets	100 percent	Proportion of LGAs that have mainstreamed drought and disaster risk strategies	20	2023-2030	Annual Reports, Monitoring Reports	PMO-DMD, PO-RALG, VPO, LGAs, District Authorities.
3.5 Promote and invest on commercial Forest plantations	1,850,000 ha	Hectares of commercial forest plantations	15	2023-2030	Annual Reports, Monitoring reports	Ministry responsible for Natural Resources; TFS, VPO, Research and academic institutions, private sector, CSOs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar.
3.6 Promote and invest on sustainable irrigation agriculture	From 694,715 to 1,000,000	Area under irrigation in hectares	50	2023-2030	Annual Reports, Monitoring	National Irrigation Commission; Ministry responsible for

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
	ha				Reports	Agriculture, Water and Livestock; LGAs; private sector Ministry of Agriculture, Irrigation, Natural Resources and Livestock.
3.7 Establishment of Automated agro-meteorological Stations in Highly Vulnerable Agricultural Areas	80 percent	Proportion of highly vulnerable agricultural areas (districts) with installed Automated Agro-meteorological Stations.	10	2023-2030	Annual reports, monitoring reports	TMA, Ministry responsible for Agriculture, Water, Disaster Management, Livestock; LGAs Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar.
Sub-total (3)			210.5			
Specific objective 4: To generate national and global environmental benefits through effective implementation of the UNCCD by 2030						
4.1 Promote mainstreaming of environmental issues in land use planning and management across sectors	By June 2030	Environmental issues mainstreamed in land use planning	2	2023-2030	Annual reports and Monitoring reports	Ministry responsible for Lands, Agriculture, Livestock, Natural Resources, Water; NLUPC; Research and Academic Institutions; LGAs; VPO Ministry of Agriculture, Irrigation, Natural Resources and Livestock FVPO. COLA

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
4.2 Undertake periodic assessment on economics of land degradation	By 2030	Periodic Assessment Report on economics of land degradation in place.	3	2023-2030	Annual reports	VPO, Ministry responsible for Finance, Natural Resources, Land, Water, Agriculture, Livestock, Fisheries; Research and Academic Institutions; NBS; COSTECH; LGAs' Ministry of Agriculture, Irrigation, Natural Resources and Livestock Zanzibar, Ministry of Water, Energy and Minerals Zanzibar
4.3 Prepare and implement National Awareness Campaign on DLDD	Prepared by 2026 and implemented by 2030	National Awareness Campaign in place	0.5	2023-2030	Annual Reports	VPO, PO-RALG; LGAs Ministry of Agriculture, Irrigation, Natural Resources and Livestock
	60 percent	Level of community awareness on land degradation in DLDD affected areas	5	2023-2030	Monitoring Report, Survey Reports	VPO, LGAs, PMO-RALG Ministry responsible for Minerals, Agriculture, Livestock, Fisheries, Water, Forestry, Energy, Infrastructure, Education; Media; CSOs

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
						Ministry of Agriculture, Irrigation, Natural Resources and Livestock
4.4 Promote sustainable management on energy sources, waste, sand mining, urban greening and urban planning in major Cities and Municipalities	20	Number of sustainable initiatives implemented in Cities and Municipalities	100	2023-2030	Annual Report, Monitoring Reports	PO-RALG, Ministry responsible for Lands, LGAs Ministry of Agriculture, Irrigation, Natural Resources and Livestock
Develop and maintain database on DLDD issues to support the preparation of National Report on Implementation of the UNCCD	Developed by June 2025 and maintained by 2030	Database on DLDD in place	1	2023-2030	Annual Reports	VPO, NBS, PO-RALG, Ministry responsible for: Agriculture, Water, Minerals, Livestock and Finance; CSOs; Academia, Ministry of Agriculture, Irrigation, Natural Resources and Livestock
Sub-total (4)			111.5			
Specific objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level by 2030						
5.1 Review and implement Integrated Financing Strategy and Investment Framework (2014), including proposals for projects and activities for resource mobilization for NAP implementation, and	Reviewed by June 2026	Revised Integrated Financial Strategy and Investment Framework in place	0.5	2023-2026	Monitoring Report	VPO, Ministry responsible for Finance; Sector Ministries; Research and academic institutions; CSOs; private sector
	2	Number of programme	0.5	2023-2030	Annual	VPO, Ministry

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
overcoming the barriers to its implementation.	programme proposals prepared by 2026 and implemented by 2030	proposals and activities for resource mobilization prepared and implemented			Report	responsible for Finance; Sector Ministries, private sector, CSOs, FVPO
	50 percent	Proportion of interventions from Integrated Financial Strategy and Investment Framework implemented	1	2023-2030	Annual Report	VPO, Ministry responsible for Finance; Sector Ministries, NEMC; private sector, CSOs
5.2 Promote mainstreaming of SLM issues into sectoral policies, strategies and plans	90 percent	Proportion of SLM relevant sectors (Agriculture, Water and Land Sectors) that have mainstreamed SLM issues in their policies and plans	5	2023-2030	Annual Report	Ministry responsible for Agriculture, Livestock, Lands, Fisheries, Minerals, energy, agriculture, Natural Resources and Water; PO-RALG; LGAs; VPO, FVPO. Ministry of Agriculture, Irrigation, Natural Resources and Livestock

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
5.3 Promote economic incentives that encourage investments in restoration of degraded land	By June 2025	Conduct assessment to identify investment opportunities in sustainable land management (SLM)	0.5	2023-2025	Annual Report	VPO, Ministry responsible for Finance; TPSF FVPO, Ministry of Water, Energy and Minerals Zanzibar
	By June 2025	Establish and promote Business models for attracting investment in SLM activities in degraded landscapes	0.5	2023-2025	Annual Report	VPO, Ministry responsible for Finance; TPSF
	By June 2026	Strengthen capacity for access to finance for land management	0.5	2023-2026	Annual Report	VPO, Ministry responsible for Finance; TPSF
5.4 Engage private sector, CSOs and other stakeholders in mobilization of resources for addressing DLDD	20	Number of projects and programmes addressing DLDD implemented by Private Sector and CSOs	0.5	2023-2030	Annual Report	VPO, Ministry responsible for Finance; TPSF
	10 billion per year	Amount of funding resources mobilized by CSO and the Private Sector for addressing DLDD	0.1	2023-2030	Annual Report	VPO, Ministry responsible for Finance, Community Development, Home Affairs; PO-RALG; LGAs; TPSF

Priority Actions	Targets	Indicators	Indicative Budget (TZS billion)	Timeframe	Means of Verification	Responsible Institutions
5.5 Engage development partners, international and national financing institutions in financing DLDD interventions	10	Number of Development Partners cooperating with Tanzania in addressing DLDD issues	0.5	2023-2030	Annual Report	VPO, FVPO
	5 projects	Number of interventions, projects or programmes on DLDD funded	0.5	2023-2030	Annual Report	VPO, FVPO
	140 billion per year	Amount of fund resources mobilized by international and national financial institutions or addressing DLDD issues	0.1	2023-2030	Annual Report	VPO, Ministry responsible for Finance; private sector; CSOs
Sub-total (5)			10.2			
GRAND TOTAL			1,554.2			

CHAPTER FIVE

IMPLEMENTATION ARRANGEMENT

5.1 Institutional Arrangement

a) Vice President's Office and the first vice Presidents of the Revolutionary Government of Zanzibar

The overall coordination of the implementation of the NAP will be the responsibility of Vice President's Office (VPO) in Mainland, and the First Vice President Office (FVPO) of the Revolutionary Government of Zanzibar (RGZ) as elaborate in Figure 1 (URT, 2014 a). The VPO will also be responsible for coordinating preparation of national DLDD related implementation frameworks, strategies, plans and guidelines. Further, the VPO will be responsible for coordinating and overseeing monitoring and evaluation of the overall implementation of the NAP.

b) Government Ministries, Departments and Agencies

The general implementation of the strategies at sectoral level will be the responsibility of the relevant Government Departments and Agencies. In addition, MDAs will collaborate and cooperate with other state and non-state actors in preparation and implementation of projects, programmes, action plans and strategic interventions relevant to their respective sectors based on the strategic interventions identified in the NAP.

Each MDA will prepare sector specific action plans indicating targets to be achieved; time frame for implementing the interventions in short, medium and long term; and outcome indicators. The plans will subsequently be integrated into the Government budgets through the Medium-Term Expenditure Frameworks (MTEF) for implementation.

Broad and complex interventions may be addressed by preparing and implementing stand-alone projects or programmes.

Sectoral ministries and LGAs will be reporting the implementation status to VPO on an annual basis whereby the VPO will ensure the availability of such information to the public.

c) President's Office - Regional Administration and Local Government (PO-RALG)

The PO-RALG will coordinate and work closely with Local Government Authorities (LGAs) in collaboration with Sector Ministries to implement strategic interventions at local level.

d) National Bureau of Statistics (NBS)

The National Bureau of Statistics (NBS) will have the responsibility to keep and update database on DLDD, climate change and biodiversity whereas the Prime Minister's Office (PMO) will continue to be a coordinate management of all disasters in the country, including those related to DLDD and climate change.

e) Tanzania Meteorological Authority (TMA)

Furthermore, Tanzania Meteorological Authority (TMA) is responsible for the provision of meteorological services, weather forecasts, climate services and warnings and advisories information for the country.

f) Civil Society Organizations (CSOs)

CSOs are encouraged to cooperate with the Government in implementing the NAP through various projects and/or programmes. The private sector is encouraged to implement innovative projects to address DLDD.

g) Development Partners

Development partners either bilaterally or through multilateral arrangements are encouraged to support the government in implementing the NAP by providing technical and financial support, as well as facilitating resource mobilization. They are also encouraged to provide capacity building and facilitate technology development and transfer to various stakeholders to contribute towards implementation of the NAP.

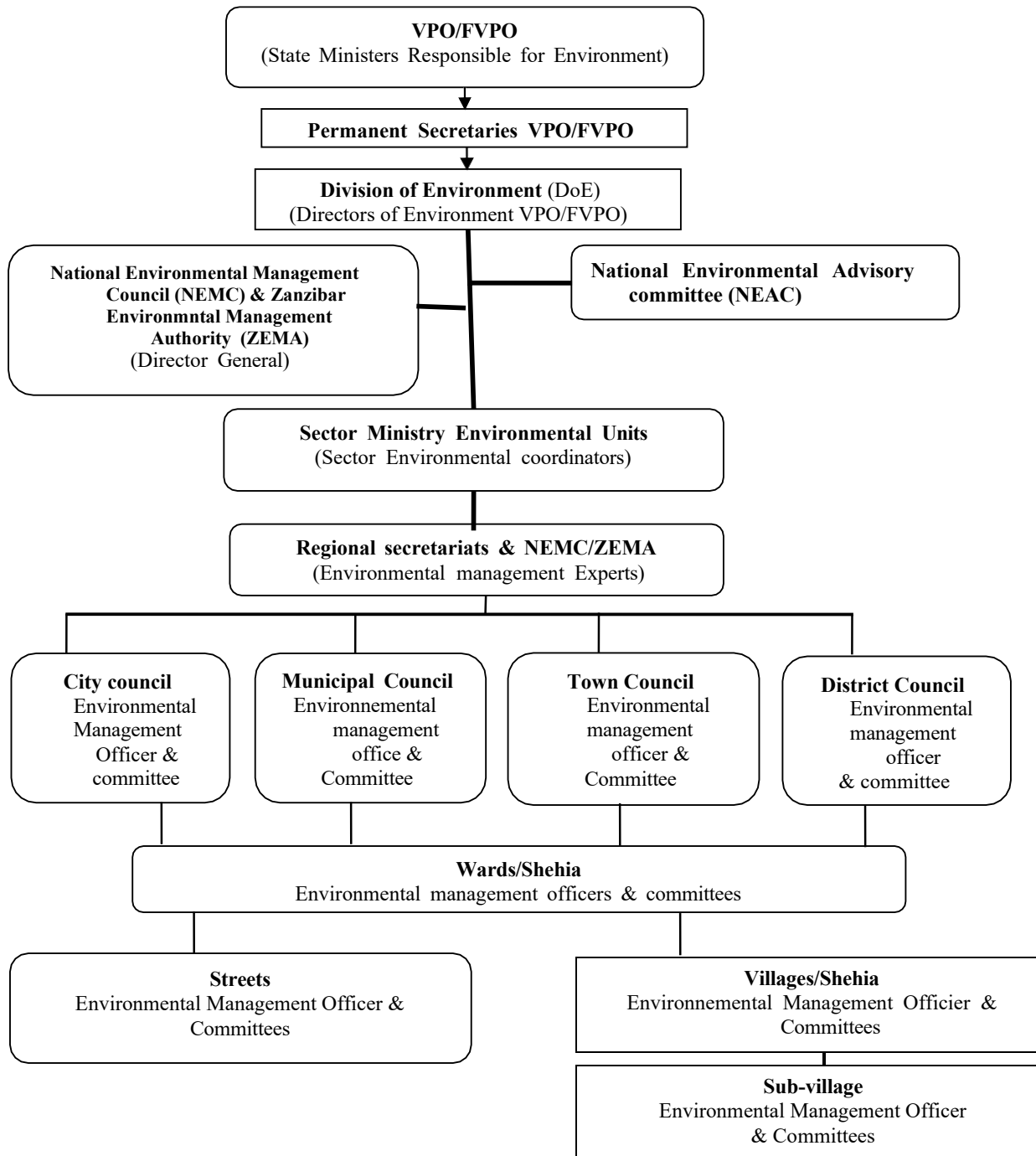


Figure 1: Institutions and arrangements for environmental management in Tanzania

5.2 Resource Mobilization

Tanzania will largely depend on financial support from international community that are financing DLDD include the Global Environment Facility (GEF), Green Climate Fund (GCF), Adaptation Fund, LDCF and bilateral development partners. Domestic funding from the government budget, private sector, civil society organizations as well as individual contributions will complement this effort. However, an integrated approach and coordinated working system is

highly required to ensure that funds to address DLDD are used to achieve the objectives presented in this NAP.

5.3 Monitoring, Review and Evaluation Plan

5.3.1 Monitoring Plan

Monitoring will involve continuous and systematic data collection, analysis, indicator and reporting frequencies, interpreting and reporting on the implementation of NAP. This will provide information to the Ministry Responsible for Environment and stakeholders on ongoing interventions, for the purpose of assessing the extent of progress and achievements made over the objectives and the use of allocated funds.

For effective conducting monitoring activities, the Ministry responsible for Environment, in collaboration with Sector ministries and LGAs, will prepare a joint comprehensive annual monitoring plan. For the sake of transparency and common understanding, the plan will be approved by the Permanent Secretaries from sector ministries and LGAs implementing the NAP.

For effective implementation of the joint monitoring plan, the VPO's Permanent Secretary in consultation with Sector Permanent Secretaries will compose a team of experts. The team shall be required to prepare and submit a monitoring report to the Permanent Secretary of the Ministry responsible for Environment.

5.3.2 Performance Review Meetings

Performance review meetings will be conducted by the Ministry responsible for Environment in collaboration with sector ministries, LGAs, Department and Agencies to track the progress on milestones developed and targets. **Table 7** describes how review meetings will be conducted.

Table 7: Review Meetings

No.	Type of meeting	Frequency of the meeting	Chairperson	Participants
1.	Quarterly Review meetings	Quarterly	Director of Environment	Directors in sector ministries, Executive Directors of Departments and Agencies
2.	Mid-Year Review Meetings	Twice per Year	Permanent Secretary, VPO	Permanent Secretaries from Sector Ministries
3.	Annual Review Meetings	Once per Year	Minister of Environment	Ministers from Sector Ministries

5.3.3 Performance Evaluation Plan

Performance evaluation will be a periodic assessment to identify the effectiveness and efficiency of performance of the objectives. The evaluation process will concentrate on outcomes. During the seven years of implementation, two evaluations will be conducted mid (3.5 years) and final evaluation (7 years). These evaluations will assess progress towards attainment of NAP specific goals and targets. Challenges encountered during the implementation will be identified and measures to address them will be developed accordingly. The final evaluation will be conducted to obtain evidence as to whether the interventions and outputs have led to the achievement of the outcomes as envisioned in the NAP.

5.3.4 Performance Reporting Plan

This will involve reporting on the performance in compliance to the progress towards attainment of NAP. Goals and Targets or implementation of targets against expenditures focusing on the impacts to stakeholders and community at large. The Sector Ministries and Local Government Authorities shall be required to prepare quarterly progressive report on the performance of the NAP implemented on their areas of jurisdictions. The reports shall be submitted to the Permanent Secretary of the Ministry Responsible for Environment. For the case of LGAs, the report shall be submitted through the Ministry responsible for LGAs.