

# The United Republic of Tanzania MINISTRY OF NATURAL RESOURCES AND TOURISM

### **NATIONAL FOREST POLICY IMPLEMENTATION STRATEGY**

2018 - 2028

#### ABBREVIATIONS AND ACRONYMS

AGB Above-Ground Biomass

AIDS Acquired Ammonal Deficiency Syndrome

HIV Human Immunodeficiency Virus

BGB Below-Ground Biomass

CBD Convention on Biological Diversity
CBFM Community Based Forest Management

CBOs Community Based organizations

CITES Convention on International Trade in Endangered Species of Wild

Fauna and Flora

DPs Development Partners

EAMCEF Eastern Arc Mountains Conservation Endowment Fund

EIA Environmental Impact Assessment

FAO Food and Agricultural Organization of the United Nations

FBD Forestry and Beekeeping Division FITI Forest Industries Training Institute

FTI Forestry Training Institute
FYDP Five Year Development Plan
GDP Gross Domestic Product

IRA Institute of Resource Assessment

IUCN International Union for Conservation of Nature

JFM Joint Forest Management LGAs Local Government Authorities M&E Monitoring and Evaluation

MNRT Ministry of Natural Resources and Tourism

NAFORMA National Forest Resources Monitoring and Assessment

NCMC National Carbon Monitoring Centre

NFP National Forest Policy NFRs Nature Forest Reserves

NGOs Non-Governmental Organizations

NSAs Non-State Actors

NWFPs Non Wood Forest Products

PFM Participatory Forest Management PFP Private Forestry Programme

PMO-RALG President's Office-Regional Administration and Local

REDD+ Reducing Emissions from Deforestation and Forest Degradation,

(conservation of forest carbon stocks, sustainable management of

forests, and enhancement of forest carbon stocks)

SADC Southern Africa Development Community

SDGs Sustainable Development Goals
SMEs Small and Medium Enterprises
SUA Sokoine University of Agriculture
TAF Tanzania Association of Foresters

Taff Tanzania Forest Fund

TAFORI Tanzania Forestry Research Institute

TFS Tanzania Forest Services
TTSA Tanzania Tree Seed Agency

ToF Trees outside Forests
TZS Tanzania Shilling

UNCED United Nations Conference on Environment and Development

UNEP United Nations Environment Programme

UNFCCC United Nations Framework Convention on Climate Change

VPO Vice President's Office

UNESCO United Nations Education, Scientific and Cultural Organization

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#### **CHAPTER ONE**

#### 1.0 INTRODUCTION

#### 1.1 Rationale for the Implementation Strategy

Effective achievement of the objectives of the National Forest Policy (NFP) of 2018 requires an elaborate Implementation Strategy. This Strategy provides clarity, focus and coordination mechanisms for different players in the implementation process and will be implemented for 10 years from 2018 to 2028.

The Strategy indicates the ways and means of implementing the Policy. It is aligned to the national development plans (Five Year Development Plan (FYDP) II for 2016-2021 and FYDP III for 2021-2026) and takes into account regional and international commitments.

#### 1.2 Implementation Strategy focus

The focus of the implementation strategy is on the National Forest Policy which aims at increasing the contribution of the Forest Sector to overall National income while sustaining the resource base. Specifically, this will be achieved through effective development and management of forest and tree resources; conservation of ecosystems; enhancement of production of forest and tree products; promotion of investments in forests, tree resources and industries; and strengthening human and institutional capacity as well as regional and international collaboration.

### 1.3 Roles and Responsibilities for Various Institutions and Stakeholders

The primary implementers of this Strategy is the Ministry responsible for Forestry. The Ministry has a role to coordinate with institutions outside particularly finance, lands, agriculture, livestock, fisheries, energy, environment, industry, trade, regional administration and Local Government Authorities (LGAs). Other key stakeholders who will implement this Strategy include the private sector, Development Partners (DPs), Non-Government Organizations (NGOs), and Community Based Organizations (CBOs). Additionally, Faith Based Organizations (FBOs) and Media have important roles to play.

#### 1.4 Expected Results

The NFP of 2018 will create an enabling environment for promotion of innovative forest products and services; put in place effective supervision, coordination and a regulatory forestry framework in the country; and guide stakeholders in developing initiatives in the sector. These will result in greener landscapes, improved forest value chains, human and institutional capacity and livelihoods.

#### 1.5 Conclusion

Implementation of this Strategy will unleash the potential of the sector to contribute more to the national economy while paying special attention to conservation.

#### **CHAPTER TWO**

#### 2.0 SITUATION ANALYSIS

#### 2.1 Forest Resource Base and Management

Forest resource in Tanzania Mainland cover about 48.1 million hectares which is equivalent to 55% of the total land surface area. The main types of forests are Montane, Lowland, Mangroves, Plantations and Miombo woodlands. The distribution of the total forested area in terms of forest type is shown in Table 2.1.1

Table 2.1.1 Distribution of forested area by type

Forest Type	Area (ha) * 1000	Percent of total forestland
Montane forests	995.3	2.1
Lowland forests	1,656.5	3.4
Mangrove forests	158.1	0.3
Forest Plantations	554.5	1.2
Closed woodlands (with > 40% canopy cover)	8,729.0	18.2
Open woodlands (with 10 - 40% canopy)	35,997.3	74.8
Total	48,090.7	100

Source: NAFORMA Report, 2015

The forests are divided into two main use categories, namely protection and production forests. Protection forests are those located on fragile landscapes, water catchment areas or biodiversity hotspots and they are conserved. This category covers 28.09 million ha (58.4% of all forests). Harvesting activities are not allowed in protection forests. Production forests are natural forests or plantations that are managed for the supply of wood to meet the diverse needs of the nation and for export. They cover 20 million ha which is 41.6% of all forests (NAFORMA Report, 2015).

The growing stock is estimated as 3.3 billion cubic metres (cubic metres), of which closed forests account for 11.3% while woodlands account for 73.9%. The remaining 14.8% is accounted for by Trees outside Forests (ToF). The total annual supply of wood at national

level is estimated at 83.7 million cubic metres. For sustainable utilization, Tanzania may harvest up to 42.8 million cubic metres of wood per year, which is the allowable cut. However, the wood volume cut in 2010 was 62.3 million cubic metres. This is 19.5 million cubic metres above the allowable cut which translate into high deforestation and degradation rate taking place in both reserved and unreserved forests.

While the above data are very useful at the level of national planning, they are not sufficiently detailed to be used for forest management planning at local levels or for individual forests. Forest resource assessments are usually carried out at national and forest levels. The former is used to provide data for general forest resource planning while the latter provides data for specific management planning needs of each forest. Since formulation of the 1998 National Forest Policy, only one assessment at the national level was undertaken from 2009 to 2014 and data published in the NAFORMA report of 2015.

According to the NAFORMA report (2015), the annual rate of deforestation was estimated as 372,816 ha. Recent estimates by Tanzania's National Carbon Monitoring Centre (NCMC) in 2018 show that the annual rate of deforestation has increased to 469,420 ha. The main causes of deforestation are increasing population, poverty, forest clearing for agriculture, wild fires, persistent reliance on wood fuel for energy, over-exploitation of wood resources and unsustainable land use practices. This loss is contributing to emission of greenhouse gasses which have impact on global warming and the resulting climate change.

Among the well-known effects of climate change on forest resources include overall reduction of growth rates, possible loss of some species, migration of some species to higher altitudes and changes in the reproductive biology (phenology). In times of drought, fires may be more intensive, causing losses of forests while in case of floods, huge erosion and loss of trees is likely. A study of the impact of climate change on forest ecosystems in Tanzania revealed that the subtropical thorn woodland (Itigi thicket forest ecosystem which covers 456,101 ha only) currently in existence only in Tanzania and Zambia may completely disappear, and that subtropical dry forest and subtropical moist forest will decline by 61.4% and 64.3% respectively. The results will be an increase in tropical very dry forest, tropical dry forest and tropical moist forest and replacing the current life zones. This means that Tanzania's forests will be changing and getting drier. All these will definitely impact on the forest management processes and more importantly on the available products and services.

To ensure effective participation of Tanzania in climate change issues, in 2009, the National REDD framework was developed, followed by the National Climate Change

Strategy in 2012 and the National REDD+ Strategy in 2013. The Government is engaged in developing the capacity, knowledge and mechanisms to implement the REDD+ commitments expressed in the Strategy.

The existing forest tenure arrangements are central, local and village governments, private and unreserved forests. The highest percentage of forestland is owned and managed by village governments (Table 2.1.2). Tenure holders are responsible for all aspects of management, including production, conservation and protection.

Table 2.1.2 Distribution of forested area by ownership

Tenure Holders	Area (Ha) * 1000	Percentage
Central Government	16,610.6	34.5
Local Government Authorities	3,107.4	6.5
Village Governments	21,975.1	45.7
Private	3,515.9	7.3
General land (unreserved forests)	2,881.7	6.0
TOTAL	48,090.7	100

Source: Adopted from NAFORMA Report, 2015

Currently, there are about 2.3 million ha (10.2% of the forest reserves on village lands) which are under effective management. The remaining 19.67 million ha (89.5%) of forests in village lands is unreserved (open access forest areas) and is subjected to unsustainable practices such as agricultural expansion, wild fires, livestock grazing and illegal harvesting. This is a reflection of weak capacity of village governments to effectively manage the forests. In the majority of cases, formalization of forest land tenure, especially for villages and private owners is incomplete.

The Government introduced Participatory Forest Management (PFM) that is being promoted all over the country to improve management of forest resources. This was considered to be one of the best approaches in implementing the 1998 National Forest Policy. There are two approaches to PFM. These are Joint Forest Management (JFM) and Community Based Forest Management (CBFM). JFM takes place on reserved land owned and managed by either the government (central or local) or private sector. In this approach, forest adjacent communities enter into joint management agreements to share responsibilities, costs and benefits with the owner. It is estimated that about 5.4 million ha of forests (mostly montane and mangrove forests) are under JFM arrangements. CBFM

covers about 2.3 million ha mainly on forests in village lands. In this arrangement the local communities have full mandates to own and manage forests.

There is substantial evidence suggesting that PFM enhances sustainable forest management and has been effective in enhancing natural, social and financial capitals. Local communities involved in PFM have good access to forests and can harvest products. However, incidences of disintegrating PFM initiatives have been reported from various parts of the country including for example Duru-Haitemba (Babati), Mgori (Singida) and Suledo (Kiteto). The major causes of such disintegration are associated with shortcomings regarding a) expertise to make and implement proper management plans b) weak forest extension services and c) heavy dependency on donor funds to manage the forest activities.

Forest certification is a globally recognized standard for assessing the quality of forest management. The system applies minimum standards and mechanisms for verification and certification as compliant to sustainable forest management. The system is currently not properly applied in Tanzania for various reasons, among them lack of enforcement. Currently, there is no mechanism for certifying forests that are well managed. This places Tanzania unfavourably in international trade in certified products.

A study conducted by the United Nations Environment Programme (UNEP) in 2015 and in collaboration with MNRT which focused on the effect of the current levels of deforestation on the Gross Domestic Product (GDP) and on the broader economy revealed that, when provisioning forest ecosystem services are considered in the system of national accounts and which can therefore be reflected in the GDP, the value of net economic losses from deforestation to the Tanzanian economy over a period of 20 years (2013–2033) is TZS 273 billion (US\$ 171 million). Equally, when timber resources and other provisioning services are considered including non-timber forest products, regulating services such as water provisioning for domestic use and livestock, and supporting services such as biodiversity, the value of net losses from deforestation to the Tanzanian economy in the period of 20 years (2013–2033) amounts to TZS 5,588 billion (US\$ 3.5 billion).

These findings suggest that, the present value of net losses is an order of magnitude higher when taking into account the effect of deforestation on the full range of forest ecosystem services. Overall, the findings highlight that it is economically viable to invest in conserving forests, as well as tackle the direct and underlying drivers of deforestation and move towards an economic model that stimulates sustainable use and conservation of forest ecosystems. However, products and services provided by ecosystems, including

forests, are always undervalued in standard economic indicators such as GDP. The current contribution of forests to GDP through wood products is estimated as 3.5% which is below the actual value if other services such as consumption of wood fuels, bee products, catchment and environmental values, support to pollination of agricultural crops and other forest benefits would have been included. This is due to the failure to undertake forest valuation.

The sector's contribution to the economy is increasing due to rising demand for forest products and services and macroeconomic changes. The sector is estimated to provide about three million person-years of employment. However, the growth in demand is not properly monitored in order to enable better future development of forest resources.

The quality of wood depends on species, seed quality and processing technologies. In 2017, seed supply was 18.3 tonnes while the demand was 40 tonnes. The availability of seed of indigenous species is especially scarce and the quality is inadequate. Tanzania Tree Seed Agency (TTSA) aims at increasing efficiency and enhancing supply of indigenous and exotic seeds for tree growing in the country. TTSA has mandates to develop, procure and market high quality tree seed and other propagation materials. Other seed suppliers have emerged and are complementing TTSA efforts in tree breeding, species and provenance trials and development of tree seed orchards.

According to the NAFORMA report the regeneration of natural forests is quite good – up to 3000 tree seedlings/wildings per ha. Better use of this potential in regenerating the landscapes is already being emphasised. However, there is little in the form of tree improvement through establishment of seed orchards and biotechnology (particularly vegetative propagation and tissue culture), which could boost productivity. In areas with wood deficit, little is being done to find fast growing substitutes such as bamboo. To meet the rising demand for wood, investigations are being carried out on growing of bamboo which matures in 5-7 years. Bamboo has many benefits including rapid biomass accumulation, carbon sequestration, absorption of heavy metals and suitability for rapid regeneration of degraded landscapes. It has versatile uses in construction, furniture and artisanal products.

#### 2.2 Ecosystem Conservation and Services

Forest ecosystems in Tanzania include lowland rainforests in the northwest, montane forests, extensive areas of Miombo woodlands in the south and Acacia savannah woodlands in the north. There are also lowland dry coastal forests and mangroves along

the coast. These forests are threatened through conversion to farmlands and extensive harvesting of trees for timber.

About one third of the country's area is conserved as protected area in the form of forest reserves, Nature Forest Reserves (NFRs), marine parks, national parks, game reserves and game controlled areas. There are about 1.4 million ha of gazetted catchment forests and NFRs. These ecosystems have enormous biological, economic, scientific, and recreational values.

The forest sector is supplying a wide variety of ecosystem products and services especially clean water for human consumption, irrigation, industrial uses and electricity generation; healthy habitats for wildlife (supporting tourism), pollinators for crops, soil conservation, carbon sequestration for mitigation of climate change and rich environments that serve as biodiversity reserves of flora and fauna. NAFORMA (2015) estimated forest Carbon pools as Above Ground Biomass (AGB) and Below Grounds Biomass (BGB) totalling 1,060.8 million tonnes and dead wood about 63 million tonnes. The major AGB and BGB sink is in the woodlands which store 73.5% of the total Carbon. Soil organic carbon is currently being studied.

Agriculture, industry and domestic users of water depend on these and other protected forests for their water supply. In 2017, electricity generated from using water was 567.7 Megawatts which is 40.54% of the total of 1,400.34 Megawatts (grid and off grid) generated in the country. Other hydroelectric facilities currently being developed will use water from upstream forests, so the contribution of forests to energy is rising. The demand for water to meet human consumption especially in the rapidly growing cities, industrial processing needs and irrigation is also rising sharply. The pressure to expand and maintain catchment forests is therefore on the rise. Currently, there are no mechanisms to ensure that users of water contribute to the costs of conserving these forests. Further, collaboration among the related sectors is weak, resulting in destruction or degradation of some catchment forests.

In addition, Tanzania's mountainous landscape (especially in the north, east, south and lake regions) has many hills the majority of which are bare-topped, and hillsides and valleys are exposed to erosion due to farming activities. The consequences are reduced water in terms of volume and quality and soil erosion leading to low productivity and environmental destruction.

Tanzania has many unique forest types with significant endemism, such as the Acacia-Commiphora woodlands, the forests in the ancient mountains of the Eastern Arc, along

the Albertine Rift close to Lake Tanganyika in the west, and on the younger volcanic mountains in the north and central parts of the country.

Tanzania is party to the Convention on Biological Diversity (CBD). With about 14,000 known plant and animal species, Tanzania is among top 12 countries with high biodiversity and among 15 countries with the highest number of endemic species. In the Eastern Arc Mountains, researchers have identified 96 endemic species of vertebrates, 43 species of butterflies, sunbirds and chameleons. These are rare species within a relatively small area, which emphasizes the uniqueness of these forests. Only a few places on earth have comparable densities of endangered endemic species. Globally, there are 25 recognized biodiversity hotspots of which the Eastern Arc Mountain Forests and the Coastal forests of Tanzania are included. Also recognized for their uniqueness are the Great Lake for Cichlid fishes, the Marine coral reef ecosystems; the ecosystem of alkaline Rift valley Lakes; and the grassland savanna for large mammals. Tanzania accounts for more than one-third of total plant species in Africa. All these attract the attention of the international community. Loss of biodiversity is therefore an issue of profound concern and requiring utmost attention.

The Government has made efforts to ensure high level of conservation and management of some protection forests. To-date, there are 12 NFRs with a total area of 305,000 ha. Eight of them are in the Eastern Arc Mountains. The country's ecosystems are threatened by mining, spread of invasive species (such as *Prosopis juliflora* and *Acacia mearnsii* (black wattle)), illegal harvesting of protected species, slash and burn agriculture (especially in the woodlands), uncontrolled charcoal production and livestock grazing. Inadequate public understanding of the tangible and intangible values of forest ecosystem products and services is a threat to biodiversity conservation. The importance of biodiversity lies in its capacity to sustain a large variety of life forms and its potential as a source of future food, fibre and medicine. The country has over 10,000 plant species, hundreds of which are nationally endemic. Of these, 305 species are identified as threatened in the International Union for Conservation of Nature (IUCN) Red List, and 276 species are classified as Endangered (IUCN 2013).

Natural forests cover about 47.4 million ha (98.5%) while plantations cover about 600,000 ha (1.5%). For natural forests, the accepted management practices for production purposes (as opposed to protection purposes) include periodic harvesting of mature timber trees and assisting the regeneration of the remaining forest. Selected mature trees of important timber species are usually retained to provide seeds for regenerating the forest. Most natural forests are located in rural settings and are surrounded by farmlands.

Farmers know that forest soils are fertile, therefore along the forest boundaries it is common for farmers to encroach on forest land, especially where forest boundaries are not clearly marked and patrolled. Farmers clear large areas of forest, usually applying a slash and burn approach. Burning the forest produces ash that is rich in nutrients which are key to crop performance. The burning destroys young regeneration and quite often it destroys much more forest area than is needed by the farmer. This is the prime cause of deforestation.

A study supported by the World Bank in 2014/15 revealed that farmland is expanding in area at the rate of 2.4% per year. The total area under shifting cultivation is about 66,000 km² and the estimated total loss of wood to this practice is 14.9 million cubic metres. This is close to a third of the annual allowable cut. Failure to maintain soil fertility on farms is responsible for the slash and burn practice. Continuation of these practices will diminish our ability to mitigate climate change.

Wetland resources make up about 10% of the Tanzania Mainland area. These include great lake system, inland drainage systems, major river networks and mangrove areas. Wetlands are also found in terrestrial forest ecosystems. Wetlands have significant economic, social, cultural and biological values for humans, wildlife and livestock. They serve as water storage and also play important roles in decreasing flooding, removing pollutants from water, recharging groundwater, protecting shorelines, providing habit at for wildlife and serving important recreational and cultural functions.

Wetlands management is a crosscutting issue among sectors such as environment, agriculture, water, fishery, energy, forestry, livestock, lands, wildlife, industry and mining. Despite being multifunctional in nature, their management is neither integrated nor coordinated among relevant sectors. In spite of their importance, wetlands other than the big lakes, are generally treated as wastelands, severely encroached, over-abstracted and undervalued.

The present network of wildlife Protected Areas (PAs) in Tanzania comprises 16 National Parks, 28 Game Reserves, 42 Game Controlled Areas and the Ngorongoro Conservation Area. The importance of these wildlife resources lies in their biological value in terms of the species and habitat found, their economic importance and the potential to contribute to sustainable development of the country. The quality of these PAs depends on the integrity of surrounding forest ecosystems. However, the wildlife sector is facing similar constraints as the forest sector, such as loss of habitats to settlements, grazing and mining; poaching; illegal logging and inadequate financial and human resources to

manage wildlife PAs.

The 12 existing NFRs are good examples for development of forest based eco-tourism activities as well as related marketing services. Eco-tourism provides jobs to local populations and socio-economic benefits. These benefits therefore provide opportunities for local communities to participate in the management of nature forest reserves. The eco-tourism industry in Tanzania is faced with challenges such as lack of national framework for this type of tourism, inadequate infrastructures like roads and accommodation in rural areas, undeveloped marketing services and lack of awareness. In addition, potentially suitable areas for eco-tourism are yet to be properly studied and developed.

The four key aspects of forest protection include prevention and management of invasive species, forest fires, pests and diseases. With regard to invasive species the available data are limited and currently there are no actions to prevent local or foreign invasive species.

Forest fires are caused by careless charcoal production, honey harvesting using the traditional methods of smoking out bees, use of fire in preparing farms and bush meat hunting. Fires may also be caused by natural means such as lightning. A study by TAFORI (2018) indicated that 11% of forest area is burnt annually. Currently, the capacity to prevent, detect and suppress fires is quite low. The national capacity is limited, while at the district and local levels, there are no concrete arrangements to engage the public in fire management. There are no clear chains of command to ensure effective mobilization of human, financial and technical resources to control forest fires. Preventive measures such as the placement and management of firebreaks are poorly implemented in most forests. Frequent forest fires smother the regeneration of most forest tree species and can degrade forests and woodlands to shrub lands and eventually grassland ecosystems with losses of biodiversity.

In the past, Tanzania and other East African countries suffered major losses from attacks of forest plantation tree species, the latest being cypress (*Cupressus lusitanica*) attack by an aphid (*Cinara cupresii*) which resulted in terminating the growing of this species for timber in some areas. Currently, active prevention of pests and diseases in the country is through the Tanzania Forest Health Forum though at it is at a low scale due to lack of human capacity, facilities and financial resources.

Other potential damage to forest environment may be caused by development activities such as forest industries, mining, road construction, agriculture, dams and settlements.

Although Environmental Impact Assessment (EIA) is done before implementation of these projects, less than optimal attention is given to forest resource management.

#### 2.3 Forest Products and Industries

For sustainable utilization, Tanzania may harvest up to 42.8 million cubic metres of wood per year. This is the allowable cut. However, the wood volume cut in 2010 was 62.3 million cubic metres that is 19.5 million cubic metres above the allowable cut. Out of the total demand, two third goes to wood fuel and the remainder goes to other wood products.

By volume, firewood and charcoal are the two most used wood fuel types in Tanzania. Firewood is dominant in rural households (92.0%) compared to urban households (28.4%). Regarding charcoal, the use of inefficient production methods and tools and inefficient burning devices exacerbates wastage of wood. An energy study in 2016 indicates that only 16.9% of the rural households in Tanzania Mainland were connected to electricity of any form compared to 65.3% of their counterparts in urban areas.

The use of modern sources of energy (electricity, biogas, industrial gas and solar) by households for cooking accounts for only 1%. Due to the high prices of electricity, most households are unable to use it for cooking. Although gas could be an immediate alternative cooking energy, its adoption especially in peri-urban and rural areas is hampered by high initial costs of cylinders, associated Liquefied Petroleum Gas (LPG) accessories, cooking stoves and inadequate distribution network. These challenges are pushing more people to continue using wood energy, hence putting more pressure on the forest resources. All indications show that at current rates of adoption, and even with special programmes to make modern forms of energy available countrywide, charcoal and firewood will remain as the dominant sources of energy for the next 15-20 years. Despite the growing demand, sources of wood for charcoal are rapidly dwindling, while production and burning technologies are inefficient. Moreover, the charcoal industry remains largely informal and illegal, yet production and consumption keep rising.

In the past, Tanzania produced wood products such as sawn timber, wood-based panels, wood chips, pulp, paper products, poles and railway sleepers. Currently only sawn wood, pulp and poles are being produced in sufficient quantity. The other products are being produced in small quantities due to decreasing raw material supply and reduced availability of large-sized logs. Therefore, the deficit is being met through importation. However, Tanzania has the potential to produce enough raw material for these products.

According to MNRT (2011), market for forest products is growing rapidly because of some strong economic drivers, particularly in construction where forests provide over 75% of all construction materials. Much of the marketing of wood products is done by the private sector. Due to weak quality control the market is poorly segmented.

Export trade is weak due to the poor quality of wood products arising from poor quality of raw materials and obsolete processing technologies. Between 2002 and 2007, some 70,000 cubic meters of roundwood were exported (FAO 2010) but this was halted as it was illegal. Global demand for wood products exceeds the supply especially as manifested by the fast growing economies of Southeast and East Asia, so there is market especially for hardwoods.

Non-wood forest products (NWFPs) include leafy vegetables, bee products, gums and resins, tannin, mushrooms, spices, fruits, foliage, roots and bark, used in traditional medicines. These products are plentiful in indigenous forests and are widely harvested and used by local communities for food, medicine, frankincense, perfumes, myrrh and essential oils. These products have high demand in internal and external markets. However, these opportunities are not exploited due to limited capacity to produce, process and package them appropriately. Many of these products are unique and potentially they could be patented, but this is currently not being done.

Forests are major reserves of species of plants and animals that have potential to serve as future foods. All the currently cultivated crops and livestock originated in forests and were domesticated. The roles of forests and trees in soil and water conservation are crucial in crop and livestock productivity. At its 44th Session (2017) the Committee on World Food Security (CFS) formally accepted that forests make a difference in food security and nutrition. Recent study by FAO (2017) on forest-based food security and nutrition revealed that while agroforestry is recognized as a means to enhance food security and nutrition, its practice on the ground is weak due to inadequate coordination, expertise and extension at the local level.

There are about 600 primary forest industries, mainly sawmilling. Other forest-based industries are logging industry, pulp mills, particleboard mills, plywood mills, hardboard mills, matches manufacturing, block board manufacturing, tannin extraction, veneer production and impregnation plants. Secondary wood Industries include furniture making, carpentry, joinery and wood carving. The furniture industry is a tertiary sub-sector that is also growing fast although mostly operated informally.

The majority of the industries are using obsolete, inefficient and inappropriate technologies resulting in high wastage of wood and very low recovery rates (less than 30%). There are innovation gaps in terms of development and use of appropriate wood technologies as whole. Further, the industry is not taking full advantage of trained technicians.

Wood industries are also facing inadequate supply of raw materials, weak investment, inadequate financing, inadequate human capacity, unreliable electricity supply, inadequate experience in market development, weak managerial acuity and low business culture.

Industries engaged in processing or value addition of NWFPs such as fruits, nuts, medicinal plants, gums, resins, barks, natural dyes, aromatics and fibres are very few. They can be the major source of forest-based employment of the rural and urban people. However, they are facing the same challenge of inefficient technologies for value addition. Potential for growth of these industries is also constrained by decline of natural forest cover, inadequate information on location and types of products and the lack of knowledge to raise the products on farm.

Development of the artisanal wood-based industry that employs over 100,000 people is hampered by lack of efficient production technologies for high quality products. The existing technologies are wasteful and unsuitable. Woodcarving skills are also slowly declining due to low economic benefits and lack of prestige/attractiveness to wood art. The availability of the famous species such as Mpingo (*Dalbergia melanoxylon*) and Ebony (*Diospyros mespiliformis*) is also rapidly declining.

### 2.4 Forest Investment and Financing

Investment in forestry is divided into four components: Investing in forest plantations for industrial purposes; in natural forests for effective production and protection benefits; in forest industries and in ecosystem management to create novel products for tourism. Investing in human and institutional capacity is discussed elsewhere in this document.

The private sector is an important player in the whole value chain from the production and distribution of tree seeds to growing trees and forests, harvesting, processing, marketing and trade in wood and non-wood forest products. The private sector comprises hundreds of thousands of individual operators and artisans, small and medium enterprises

and large-scale companies managing forest industries. The country's new thrust for industrialization will attract more investors and create employment.

Tree growing by individuals, groups and institutions (public and private) is encouraged and is slowly building up. Under the sector's Private Forestry Programme (PFP), tree grower associations have been formed and are already active in raising tree resources especially in the Southern Highlands. Alongside tree growing, the farmers are also formulating mechanisms for collective bargaining in the sale of logs and considering forming groups to invest in wood processing. Private tree growing is potentially a nucleus for a very effective bottom-up approach to industrialization. With regard to forest industries, investment has stagnated due to the shortage of raw materials, so more tree growing is likely to change this situation.

The challenges in these areas include the lack of incentives for tree farmers to overcome financial difficulties arising from the long gestation periods associated with tree and forest investments; lack of suitable financing mechanisms for small- and medium-scale private forestry and forest industry development; and the fact that current tree growing programmes are mainly concentrated in few districts in the country. Further, currently there are very few investors in the development of natural forests. Although there are unique opportunities to invest in ecosystem conservation and eco-tourism, this area is yet to be properly developed.

The main sources of funds for the forest sector are annual central government subventions, project-based funds from development partners, NGO funds and private investments. The main source of revenue for the sector is forest royalties. Revenue collection has been strengthened by TFS, but there are opportunities to broaden the revenue base. In ensuring sustainable funding mechanism for the forest sector, the government has established the Tanzania Forest Fund (TaFF) to support sectoral activities. In 2001, the government established EAMCEF to support the conservation of the Eastern Arc Mountain forests, which are among the biodiversity hotspots in the country.

Currently there are initiatives on adopting payment for ecosystem services (PES). Ecosystem services include watershed protection, forest conservation, biodiversity conservation, carbon sequestration and landscape beauty in support of eco-tourism. PES is a direct incentive to encourage ecosystem management in ways that ensure the continued provisioning of the services. It is a highly promising conservation approach that can benefit buyers, sellers and improve the resource base.

Urban gardens and tree groves are sanctuaries where residents find peace as they congregate to enjoy the shade and serenity of the microclimate created. One of the most important benefits of trees in urban environments is related to health and peace of mind. Urban life includes industrial establishments which contribute to pollution in terms of greenhouse gas emissions and chemical pollutants such as ammonia, sulphur-dioxide, carbon dioxide and carbon monoxide.

Currently there are thousands of private nurseries that provide seedlings to private and corporate developers for planting in urban and peri-urban areas. However, the planting is small scale and disorganized, the trees are not properly managed and they often interfere with infrastructures such as power supply lines drainage systems and water supply systems. Further, there are few recreational areas or botanic gardens for use by town dwellers. As a result we are not benefiting adequately from the capacity of trees to absorb polluting gases and also heavy metals such as lead, cadmium and zinc in water pools. Heavy metals are injurious to human health if ingested, especially from vegetables growing along polluted streams. Expertise in urban forest management is barely taught and there are no specialists in this area.

The Government has continued to strengthen forest research through TAFORI. To coordinate, guide and implement demand-driven research, TAFORI coordinated the consultative formulation of the National Forestry Research Master Plan (2011–2020). The challenges facing research include inadequate capacity to gauge implementation of planned research programmes and weak dissemination of research findings due to declining extension capacity. Further, coordination among all institutions involved in forest research (including universities) is weak, leading to fragmentation approaches to research. To ensure effective gauging, monitoring and coordination of forestry research, the FBD strived for on the formulation of Forestry and Beekeeping Research guideline which provides framework for Government and private sector to report among other things on the research proposals and achievement reached.

A key weakness is the absence of a framework for predicting future funding levels for research, which is very essential for work involving trees, forests and society.

#### 2.5 Human and Institutional Capacity

The main employers of foresters are the central government, LGAs, NGOs and private sector. Currently, the government employs 1,369 foresters of whom 889 are in central

government and 480 in regional secretariats and LGAs. The estimated need is 4,249 foresters, so the deficit is currently 2,381 foresters. Thus, we are operating at 32.2% of the required minimum capacity. Under ideal conditions, a professional forester should manage up to 5,000 ha of natural forest. However, we currently have on the average over 20,000 ha per forester. With the current forest estate of 48.1 million ha, we will require over 9,000 professionals in the future. Thus, the human capacity is inadequate for proper forest resource management, resulting in sub-standard management of forest resources. However, there are adequate institutions established but have low capacity and fragmented chain of command in managing forest resources. Currently, adequate professional management services are not assured for all forests.

The main source of forestry professionals is The College of Forestry, Wildlife and Tourism (CFWT) at Sokoine University of Agriculture (SUA), and more recently the Institute of Resource Assessment (IRA) at the University of Dar es Salaam. Together, these universities have capacity to produce 150 foresters annually. FTI produces 200 forest technicians annually while FITI graduates 30 technicians per year. FTI and FITI are managed under the Ministry responsible for forestry.

All the graduates are in mainstream forestry. Diversification or specialization in areas such as commercial and urban forestry, agroforestry, and forest industries is badly needed, but is currently not done. At the vocational level, there is a serious shortfall following closure of two vocational training institutions which were located at North Kilimanjaro and Sao Hill forest plantations This reflects inadequacy of capacity to address forestry issues especially at the village and local authority levels and weakens efficiency of forest industries. The Tanzania Association of Foresters (TAF) is a body with capacity to monitor and regulate professional conduct but currently it is not empowered to do so and has not developed the essential tools for this task.

With decentralisation and private sector developments and institutional reforms in forestry, training is an important instrument for facilitating skills development at stakeholder institutions. However, at professional and technical education levels, there are weaknesses in the coverage of hard sciences and gaps in the coverage of some areas especially industrial development/innovations for wood and non-wood products. Further, managerial and business skills are not well developed.

Extension services are undertaken through sharing of promotional materials, radio and television programmes. The providers include government, NGOs and private sector. The current trend in extension services reflects fragmentation across related sectors resulting in weak cross sectoral coordination and leading to increased illegal activities, and inappropriate management of forests.

#### 2.6 Regional and International Cooperation

Forests play a vital role in stabilizing the atmospheric greenhouse gases thus contributing to the mitigation of the global climate change. In order to sustain these benefits, management of the forest resources requires sustained efforts and resources that necessitate international support. At the regional level, it is important to coordinate matters of cross-border interest such as biodiversity conservation and harmonize forest management approaches.

Various regional and global frameworks are in place to support forest conservation and management. These include SADC Protocol on Forestry, UNFCCC - including the Paris Agreement of 2015, AFR100), UNCCD, CBD, CITES, UN Forest Instrument adopted in December 2015 and SDGs. Tanzania is poised to fully implement her commitments in all protocols, agreements, and conventions signed. However, there is weak linkage between the forest sector and various bilateral, sub-regional, regional and global initiatives.

#### 2.7 Crosscutting Issues

Combating HIV/AIDS has been mainstreamed in all government strategies and plans. The government has been taking initiatives to reduce HIV infections and impacts of AIDS by conducting seminars on prevention and supporting people living with HIV/AIDS. However, new infections cases among forest sector staff show an increase due to the nature of its working environment. Forest reserves are located in confined areas where human interrelationships normally occur. As such, those involved in the sector are vulnerable to HIV/AIDS infection.

Gender balance aims at providing relatively equal opportunities to males, females and marginalized groups with similar qualifications to effectively manage natural resources and provide desirable services. Forest-related institutions and organisations in the sector consider gender balance in most aspects of institution management and field operations. However, the gender proportion is skewed in favour of male staff due to disproportion in training institutions especially at the professional level. Males also seem to dominate in some areas of management of forest resources whereas females mostly dominate in tree nurseries, tree growing, processing, packaging, marketing and selling of bee products. Marginalised groups are generally weakly represented. Furthermore, benefits accruing from the forest sector are oftentimes not equitably shared according to gender.

Good governance is reflected in reduction of corruption; stable property rights; and rule of law. In an ideal world, good governance in the forest sector would ensure that positive policy contributions result from the implementation of sectoral action plans that are based on existing policies, legal framework and institutional structures. The forest sector operates in an environment where scarce resources are managed in a participatory manner and necessitates benefit sharing. Despite efforts to improve transparency, accountability and the rule of law, incidences of corruptions still exist.

Forests and trees are able to sequester carbon (and thereby reduce the release of carbon dioxide into the atmosphere). Cautious management and use of wetlands reduce greenhouse gas emissions. There has been an effort to address the environmental challenges in the forest sector. However, trends show loss and degradation of forests, declining fresh water, soil degradation and erosion, biodiversity losses and accumulation of hazardous substances and pollutants.

#### **CHAPTER THREE**

#### 3.0 VISION, MISSION AND OBJECTIVES

#### 3.1 Vision

Forest sector contributes significantly to the national and global economy while sustaining the resource base.

#### 3.2 Mission

To effectively manage and utilize forest and tree resources for sustainable supply of products and services to meet local, national and global needs.

#### 3.3 Objectives

General objective: To ensure forest and tree resources are well conserved, managed and utilized in a sustainable manner to meet the current and future demands.

The specific objectives of the policy are:

- 1) Forest and tree resources effectively developed and sustainably managed.
- 2) Forest Ecosystems effectively conserved.
- 3) Production of forest and tree products enhanced and sustained.
- 4) Investments in the development of forests, tree resources and industries enhanced.
- 5) Human and institution capacity to deliver services in forest sector enhanced.
- 6) Regional and international cooperation enhanced.
- 7) Impacts of HIV and AIDS infections in the forest sector reduced.
- 8) Gender equity and equality in the forest sector enhanced.
- 9) Good governance principles in the forest sector enhanced.
- 10) Contribution of the forest sector to environmental conservation enhanced.

#### **CHAPTER FOUR**

#### 4.0 IMPLEMENTATION STRATEGY

#### 4.0 Objectives, Strategies and Targets

# 4.1 Objective one: Forest and tree resources effectively developed and sustainably managed

#### 4.1.1 Strategies

- a) Build human and institutional capacity for forest resource assessment, monitoring and valuation at national and forest levels.
- b) Guide tree growing and regeneration and carbon stocks management to combat climate change and restore landscapes
- c) Establish tenure arrangements for forests and trees to curb forest land conversion.
- d) Engage with stakeholders in forest resource planning at all levels, for equitability.
- e) Establish forest and product certification processes to meet international standard
- f) Build human and institutional capacity for germplasm production and management for indigenous and exotic species
- g) Promote public and private sector engagement in plantation establishment for commercial purposes.
- h) Promote establishment of botanical gardens in zones to ensure gene resources conservation and genetic diversity
- i) Establish and manage tree seed sources and seed banks

# 4.1.2 Targets

- Increased number of professional staff in forest resources assessment from 30 to 250 to cover all forests by June 2028;
- ii. An updated and functioning data management system by June 2028;
- iii. Increased forest area under plantations and woodlots from 610,000 to 1million ha by June 2028;
- iv. Increased area of Miombo woodland under naturally regenerated forests from 39 million ha to 44 million ha by June 2028;
- v. Increased carbon stocks from 1,124 million tonnes to 1,236 million tonnes by June 2028;

- vi. Upgraded guidelines for tree planting, natural regeneration and carbon stocks management by June 2020;
- vii. Increased woodlots with formal tenure from 10 to 10,000 by June 2028
- viii. Increased forest area managed in accordance with approved Forest Management Plans from 10 million ha to 30 million ha by June 2028;
- ix. Increased tree grower associations from 136 to 1,000 by June 2028;
- x. Established national forum for stakeholders to share knowledge and experiences by June 2022;
- xi. Established forest certification system and functioning by June 2024;
- xii. Increased number of certified forests from 3 to 10 by June 2028;
- xiii. Number of certified forest products increased from 1 to 10 by June 2028;
- xiv. Professional staff in germplasm production and management increased from 17 to 500 by June 2028;
- xv. Germplasm supply centres increased from 7 to 15 by June2028;
- xvi. A regulatory system for tree germplasm transfer established by June 2020;
- xvii. Botanical gardens increased from 8 in 2018 to 15 by June 2028;
- xviii. Genetically improved indigenous and exotic tree species increased from 6 in 2018 to 50 by June 2028;
- xix. Tree seed banks increased from 1 in 2018 to 3 by June 2028.
- xx. Tree seed orchards increased from 160ha in 2018 to 1,000ha by June 2028;

### 4.2 Objective two: Forest Ecosystems effectively conserved

# 4.2.1 Strategies

- a) Establish mechanisms to enable beneficiaries to contribute to the ecosystem products and services
- b) Encourage establishment of new reserves and upgrade forest reserves into NFRs to sustain ecosystem products and services
- c) Establish a mechanism for ensuring compliance to principles of forest health and a surveillance mechanism to protect forests
- d) Develop urban forest and tree management initiatives
- e) Develop forest sites suitable for ecotourism
- f) Establish mechanism for sector/ecosystem specific EIA compliance of investments in forests
- g) Areas of an outstanding values, critical, diverse and threatened forest landscapes declared Word Heritage under UNESCO

#### 4.2.2 Targets

- i) Tools to institute Payment for Ecosystem Services established by June 2022
- ii) Guidelines on beneficiary contributions to ES management prepared by June 2022;
- iii) Area under forest reserves increased from 21million ha to 25million ha by June 2028;
- iv) Area of NFRs increased from 600,000 ha to 2million ha by June 2028;
- v) Economic impact of tree pests and diseases reduced from 25% to 5% of the total value by June 2028;
- vi) Area of forest damaged by fire per year reduced from 10 million ha to 2.5 million ha by June 2028;
- vii) Forest reserve area in Urban areas increased from 45,000 ha to 100,000 ha by June 2028;
- viii) Forest sites for ecotourism increased from 17 to 30 by June 2028;
  - ix) Two areas of an outstanding, critical, diverse and threatened forest land and seascapes declared Natural World Heritage by June 2028;
  - x) Sector-specific guidelines for EIA compliance developed by June 2022

# 4.3 Objective three: Production of forest and tree products enhanced and sustained.

# 4.3.1 Strategies

- a) Undertake research on production and use of wood, wood fuel and NWFPs
- b) Promote application of appropriate processing technologies and branding of forest products for domestic and international markets
- c) Build capacity of local artisans on innovative production and marketing
- d) Support farmers to apply effective agroforestry innovations
- e) Establish and equip mobile training facility for technology and innovation transfer to individuals and small and medium forest related enterprises

### 4.3.2 Targets

- i) Indigenous tree species plantation area raised from 200ha to 10,000ha by 2028
- ii) NWFPs species recommended for commercial production increased from 0 to 20 by 2028

- iii) Wood fuel plantations increased from 600 ha to 30,000 ha by 2028
- iv) Logging waste reduced from 60% to 30% for indigenous species by June 2028
- v) Logging waste reduced from 30% to 10% in plantations by June 2028
- vi) Sawmilling waste reduced from 60% to 40% by June 2028
- vii) A framework for products branding developed and applied by June 2022 viii) Wood fuel consumption decreased from 90% to 60% by June 2028
- ix) Artisanal wood wastage reduced from 70% to 20% by 2028
- x) Farmers practicing agroforestry increased from 4 million to 15 million by 2028

# 4.4 Objective four: Investments in the development of forests, tree resources and industries enhanced

#### 4.4.1 Strategies

- a) Establish mechanisms to incentivize private sector to invest in forest and tree value chains.
- b) Establish and strengthen forest industry financing initiatives

#### 4.4.2 Targets

- i) Area under private forest plantations increased from 600,000 ha to 700,000 ha by June 2028
- ii) Area under Government forest plantations increased from 110,000 ha to 210,000 ha by June 2028
- iii) Forest industries increased from 630 to 1500 by June 2028
- iv) Forest researchers increased from 100 to 400 by June 2028
- v) Long-term financing mechanism for research established by June 2020
- vi) Capacity for urban forestry established and mobilized by June 2021

# 4.5 Objective five: Human and institution capacity to deliver services in forest sector enhanced

#### 4.5.1 Strategies

- a) Strengthen the capacity of the institutions involved in training, research, administration and management of forest resources
- b) Establish a formal body to oversee forest professional matters.
- c) Strengthen forest extension services to ensure compliance with principles of forest and tree management
- d) Strengthen inter- and intra-sectoral coordination in forest management at all levels

### 4.5.2 Targets

- i) Capacity of forestry institutions to deliver services improved from 50% to 70% by June 2028;
- ii) Established and functional body to oversee forest professional matters by June 2028;
- iii) Coverage of forest staff reduced from 25,000 ha per staff to 10,000 ha per staff by June 2028;
- iv) A functional forest stakeholders forum established by June 2020;
- v) An authority for management of all public forests established by June 2020.

#### 4.6 Objective six: Regional and international cooperation enhanced.

# 4.6.1 Strategy

Build institutional capacity for effective participation and compliance with regional and international conventions and agreements

# 4.6.2 Targets

- (i) A forum for reviewing regional and international forestry issues established and operationalized by June 2019;
- (ii) International collaborative development projects increased from 15 to 30 by June 2028

# 4.7 Objective seven: Impacts of HIV and AIDS infections in the forest sector reduced.

#### 4.7.1 Strategy

Mainstream HIV/AIDS protection and supportive measures into forest development initiatives

#### 4.7.2 Targets

- (i) HIV/AIDS preventive programmes increased from 10 to 30 by June 2028;
- (ii) Persons living with HIV and AIDS 100% supported by June 2028.

# 4.8 Objective Eight: Gender equity and equality in the forest sector enhanced

#### 4.8.1 Strategy

Encourage and support women to participate in all aspects of forest development and management.

#### 4.8.2 Targets

Programmes to support women in forestry increased from zero to 10 by June 2028

# 4.9 Objective Nine: Good governance principles in the forest sector enhanced

### 4.9.1 Strategy

Strengthen transparency, accountability and rule of law in forestry

# 4.9.2 Target

- i) Anti-corruption strategies for forest sector institutions and organizations customized and implemented by June 2024
- ii) Legal instruments and guidelines in forest sector reviewed and established by June 2021

# **4.10** Objective Ten: Contribution of the forest sector to environmental conservation enhanced

No additional strategies or targets were developed as this area is fully covered in objectives 2 and 6.

#### **CHAPTER FIVE**

### **5.0 IMPLEMENTATION STRATEGY LOGFRAME**

**Table 5. Logframe for Implementation** 

No.	Objective	Strategy	Target	Resource TZS (*1 Million)	Time frame	Responsible
1	Forest and tree resources effectively developed and sustainably	Build human and institutional capacity for forest resource assessment, monitoring and valuation at national and forest levels.	Increased number of professional staff in forest resources assessment from to 30 to 250 to cover all forests by 2028	3,300	10 years	MNRT, SUA, UDSM, Private Sector, DPs, TAF
	managed		An updated and functioning data management system by June 2028	2,000	10 years	MNRT, TFS, TAFORI, SUA, LGAs, DPs, NBS
		Guide tree growing and regeneration and carbon stocks management to combat climate change and	Increased forest area under plantations and woodlots from 610,000 ha to 1million ha by 2028	6,400,000	10 years	MNRT, TFS, Private sector, DPs, SUA
		restore landscapes	Increased area of Miombo woodland and naturally regenerated forests from 39 million ha to 44 million ha by 2028	2.5 trillion	10 years	MNRT, TFS, CBOs, LGAs, DPs, Private sector, TAFORI, SUA
			Increased carbon stocks from 1,124 million tonnes to 1,236 million tonnes by 2028	500	10 years	MNRT, TFS, Private sector, VPO-DoE, DPs, NCMC, CBOs, NGOs, I.R.A, CCCS
			iv) Guidelines for tree planting, natural regeneration and carbon stocks management upgraded by 2020	300	2years	MNRT, VPO-DoE
		Establish tenure arrangements for forests	Increased woodlots with formal tenure from 10 to 10,000 by 2028	30,000	10years	NLUPC, MLHHS, MNRT, DPs, LGAs, VG, NGOs

and trees to curb forest land conversion.	Increased forest area managed in accordance with approved Forest Management Plans from 10 million ha to 30 million ha by 2028	300,000	10years	MNRT, TFS, DPs, LGAs, VG, Private Sector, NGOs
	Established national forum for stakeholders to share knowledge and experiences by 2020	1,000	2years	MNRT, TFS, Private Sector, DPs, LGAs, VG, NGOs
Engage with stakeholders in forest resource planning at all levels, for equitability	Increased tree grower associations from 136 to 1,000 by 2028	1,000	10years	MNRT, TFS, LGAs, VG, NGOs
Establish forest and product certification processes to meet international standards	Established and functioning national forest certification system by 2024	500	6years	MNRT, TFS, NCMC, Private Sector, TAFORI, SUA, TAF
	Increased number of certified forests from 3 to 30 by 2028	2,000	10years	MNRT, TFS, NCMC, Private Sector, NGOs, TAFORI, SUA
Build human and institutional capacity for germplasm production and management for indigenous	Increased professional staff in germplasm production and management from 17 to 500 by 2028	7,200	10years	MNRT, TAFORI, TFS, LGAs, Private Sector, NGOs, SUA
and exotic species	Increased germplasm supply centres from 7 to 15 by 2028	8,000	10years	TAFORI, TFS, SUA, Private Sector
	Established regulatory system for tree germplasm transfer by 2022	500	6years	MNRT, MoAL, TPRI, Plant

		Promote public and private sector engagement in plantation establishment for commercial purposes				Protection Board, TAFORI, TFS, SUA
	botanio to ensu	Promote establishment of botanical gardens in zones to ensure gene resources conservation and genetic	Increased Botanical gardens from eight (8) in 2018 to 15 by 2028	7,000	10 years	MNRT, SUA, TAFORI, National Museum of Tanzania, MUHAS
		diversity	Genetically improved indigenous and exotic tree species increased from 6 in 2018 to 50 by 2028	2,200	10 years	TAFORI, SUA, TTSA/TFS, TPRI
		Establish and manage tree seed sources and seed	Tree seed banks increased from 1 in 2018 to 3 by 2028	1,000	10 years	TTSA/TFS, Private Sector
	bank	banks	Tree seed orchards increased from 160ha in 2018 to 5,000ha by 2028	40,000	10 years	TAFORI, SUA, TTSA/TFS, TPRI
2	Forest Ecosystems effectively conserved	Establish mechanisms to enable beneficiaries contribute to the ES products and services	Established tools to institute Payment for Ecosystem Services by June 2022	500	4 years	MNRT, TFS, VPO, LGAs, TAFORI, , SUA, UDSM
	Encourage establishment of new reserves and upgrade forest reserves into NFRs to sustain ecosystem products and services	Guidelines on beneficiary contributions to ES management prepared by June 2022	200	4 years	MNRT, TFS, VPO, LGAs, TAFORI, SUA, UDSM	
		Area under forest reserves increased from 21 million ha to 25 million ha by June 2028	2,000	10 years	MNRT, TFS, LGAs	
		· · · · · · · · · · · · · · · · · · ·	Area under NFRs increased from 600,000 ha to 2 million ha by June 2028	5,000	10 years	MNRT, TFS, LGAs

Establish a mechanism for ensuring compliance to principles of forest health and a surveillance	Economic impact of tree pests and diseases reduced from 25% to 5% of the total value by 2028	2,000	10 years	TAFORI, SUA, TFS, TPRI
mechanism to protect forests	Area of forest damaged by fire per year reduced from 10 million ha to 2.5 million ha by 2028	1.000	10 years	TAFORI, TFS, LGAs, Private sector
Develop urban forest and tree management initiative	Forest reserves in Urban areas increased from 45.000 ha to 100,000 ha by June 2028	5,000	10 years	LGAs, MNRT, TFS
Develop forest sites suitable for eco-tourism	Forest sites for eco-tourism increased from 17 to 30 by June 2028	2,000	10 years	LGAs, MNRT, TFS, National Museum of Tanzania, Private Sector, NGOs
	Two areas of an outstanding, critical, diverse and threatened forest land and seascapes declared World Heritage by June 2028	1,500	10 years	TFS, Private Sector, LGAs, NGOs
Establish mechanism for EIA compliance of investments in forests	Sector-specific guidelines for EIA compliance developed by June 2022	100	4 years	MNRT, VPO, SUA, TAFORI, TFS

3	Production of forest and tree products enhanced and	Undertake research on production and use of wood, wood fuel and NWFPs	Indigenous tree species plantation area raised from 200ha to 10,000ha by 2028	2,000	10 years	TAFORI, TFS, SUA, Private Sector, LGAs
	sustained.		NWFPs species recommended for commercial production increased from 0 to 20 by 2028	1,000	10 years	TAFORI, TFS
			iv) Area of wood fuel plantations increased from 600 ha to 30,000 ha by 2028	2,000	10 years	TFS, LGAs, Private Sector, DPs
		Promote application of appropriate processing technologies and branding	Logging waste reduced from 60% to 30% for indigenous species by June 2028	500	10 years	TFS, SUA, TAFORI, Private Sector, DPs
		of forest products for domestic and international markets	Logging waste reduced from 30% to 10% in plantations by June 2028	400	10 years	TFS, SUA, TAFORI, Private Sector, DPs
			Sawmilling waste reduced from 60% to 40% by June 2028	400	10 years	TFS, SUA, TAFORI, Private Sector, DPs
			A framework for products branding developed and applied by June 2022	200	4 years	Private Sector, MNRT, TFS, MIT, GS1
			Wood fuel consumption decreased from 90% to 60% by June 2028	500	10 years	VPO, MoFP, MNRT, MoE, TFS, Private Sector
		Build capacity of local artisans on innovative production and marketing	Artisanal wood wastage reduced from 70% to 20% by 2028	200	10 years	TFS, LGAs, Private Sector, NGOs
		Support farmers to apply effective agroforestry innovations	Farmers practicing agroforestry increased from 4 million to 15 million by 2028	1,500	10 years	TFS, LGAs, Private Sector, NGOs

4	Investments in the development of forests, tree resources and industries	Establish mechanisms to incentivize private sector to invest in forest and tree value chains.	Area under private forest plantations increased from 600,000 ha to 700,000 ha by June 2028	550,000	10 years	MNRT, TFS, LGAs, Private Sector, NGOs
	enhanced		Area under Government forest plantations increased from 110,000 ha to 210,000 ha by June 2028	550,000	10 years	MNRT, TFS, LGAs
		Establish and strengthen forest industry financing initiatives	Forest industries increased from 630 to 1500 by June 2028	10,000,000	10 years	Private Sector
			Forest researchers increased from 100 to 400 by June 2028	4,600	10yrs	TAFORI, SUA, DPs. TFS
			Long-term financing mechanism for research established by June 2020	500	2yrs	TAFORI, SUA, TFS
			Capacity for urban forestry established and mobilized by June 2021	500	3yrs	MNRT, TFS, LGAs,

5	Strengthen the capacity the institutions involved training, research, administration and services in forest sector  Strengthen the capacity the institutions involved training, research, administration and management of forest resources		Capacity of 6 forestry training and research institutions improved by June 2028	60,000	10yrs	Ministry of Educ. MNRT, TFS
	enhanced	Establish a formal body to oversee forest professional matters	Established and functional body to oversee forest professional matters by June 2022	500	4yrs	MNRT, SUA, TFS,TAFORI with other stakeholders
		Strengthen forest extension services to ensure compliance with principles of forest and tree management	Coverage of forest Extension staff reduced from 25,000 ha per staff to 10,000 ha per staff by June 2028	80,000	10yrs	MNRT, NGOs, TFS, DPs, LGAs
		Strengthen inter- and intra- sectoral coordination in forest management at all levels	A functional forest stakeholders forum established by 2021	500	3yrs	All stakeholders led by MNRT
			An authority for management of all public forests established by June 2028	50,000	10yrs	MNRT, TFS
6	Regional and international cooperation enhanced	Build institutional capacity for effective participation and compliance with regional and international	A forum for reviewing regional and international forestry issues established and operationalized by 2022	20,000	4yrs	MNRT, TFS VPO, SUA, TAFORI
		conventions and agreements	Collaborative development projects increased from 15 to 30 by June 2028	10,000	10yrs	MNRT, DPs, TFS, LGAs, NGOs

7	Impacts of HIV and AIDS infections in the forest	Mainstream HIV/AIDS protection and supportive measures into forest development initiatives.	HIV/AIDS preventive programmes increased from 10 to 30 by June 2028	16,000	10yrs	MNRT, LGAs, TFS, NGOs, DPs
	sector reduced.		Persons living with HIV and AIDS 100% supported by June 2028	12,000	10yrs	MNRT, LGAs, TFS, NGOs, DPs
8	Gender equity and equality in the forest sector enhanced	Encourage and support women to participate in all aspects of forest development and management.	Sensitization programmes to support women in forestry increased from zero to 10 by June 2028	15,000	10yrs	MNRT, LGAs, TFSNGOs DPs
9	Good governance principles in the forest sector	Strengthen transparency, accountability and rule of law in forestry	Anti-corruption strategies for forest sector institutions and organizations customized and implemented by June 2024	500	6yrs	MNRT, TAKUKURU, TFS
	enhanced		Legal instruments and guidelines in forest sector reviewed and established by June 2021	1,600	3yrs	MNRT, AG, TFS, NGOs DPs

#### CHAPTER SIX

#### 6.0 ROLES AND RESPONSIBILITIES OF STAKEHOLDERS

## **6.1** Ministry responsible for forestry

The Ministry has the overall coordination of the forest sector. Specifically, the Ministry will undertake the following functions:

- a) Develop sector policy, implementation strategy, legislation and guidelines;
- b) Monitor the development of the sector; approve plans.
- Oversee trees and forests outside gazetted areas and in private lands;
- d) Promote effective participation of stakeholders in forestry and forest industries development;
- e) Create enabling environment and mechanisms for collaboration with National, Regional and International institutions in forestry development;
- f) Support national capacity building in forest education, research and extension services;
- g) Provide leadership in resources mobilization;
- h) Establish entities and mechanisms that streamline forest and forest industry management;
- i) Ensure compliance with international standards and guidelines;
- j) Ensure fulfilment of commitments made at regional and international protocols and agreements
- k) Ensure inter-ministerial coordination and compliance on all forest matters; and
- I) Promote partnership with private sector.

# 6.2 Key sector ministries

These ministries perform activities, which have direct impact to the sector. They will:

- a) Promote and provide alternative energy sources;
- b) Ensure preparation of proper land use management plans;
- c) Oversee compliance of environmental impact assessment;
- d) Harmonize extension services, training and research;
- e) Ensure proper management of water catchment forests;
- f) Collaborate in climate change adaptation and mitigation actions;
- g) Ensure enforcement of forest laws; and
- h) Promote sustainable agriculture practices.

### 6.3 Other Government Institutions

Other government institutions will:

- a) Coordinate and collaborate in provision of extension services, training and research;
- b) Ensure forest law enforcement;
- c) Assist in monitoring and evaluation;
- d) Provide support in collection and dissemination of information;
- e) Assist in licensing of industries and trade in forest products;
- f) Provide support in forest conservation and management; and
- g) Create enabling environment in forest investments.

# 6.4 Authorities and Executive Agencies in the Forest Sector

The functions of the Authorities and executive agencies are:

- a) Manage government forest reserves;
- b) Undertake extension services;
- c) Ensure supply of quality forest products and services;
- d) Issuing licences, permits, certificates and ensure compliance on forest products utilization;
- e) Ensure forest law enforcement;
- f) Conduct monitoring and evaluation;
- g) Establish and manage natural forests and forest plantations and apiaries;
- h) Collect forest revenues;
- i) Provide quality tree seeds and other propagating materials;
- j) Develop institutional capacity in terms of human resource. finance and infrastructure;
- k) Develop collaborative mechanism with relevant entities; and
- I) Create income-generating opportunities.

### 6.5 Local Governments

As a player in forest management, LGAs will:

- a) Coordinate and provide extension services;
- b) Undertake revenue collection;
- c) Manage local government forest reserves;

- d) Ensure forest law enforcement;
- e) Establish new local government forest reserves;
- f) Promote tree growing and agroforestry;
- g) Support communities in establishment and management of village land forest reserves;
- h) Collaborate with central government in management of national forest reserves;
- i) Undertake monitoring and evaluation;
- j) Ensure capacity building and awareness for staff and local communities; and
- k) Promote partnership with private sector.

## 6.6 Local Communities

Local communities will:

- a) Sustainably manage forest resources in their area of jurisdiction;
- b) Recognize and support traditional communities;
- c) Participate in joint management of forests;
- d) Participate in tree growing programme;
- e) Provide farmer-to-farmer advice;
- f) Collect revenues;
- g) Formulate and enforce by-laws, and
- h) Establish forest-based income generating activities.

# 6.7 NGOs, CBOs, Faith-based Institutions, Mass Media and Political Parties

NGOs, CBO, Faith-based Institutions, Media and Political Parties will:

- a) Create awareness and advocacy;
- b) Facilitate technical assistance, training, research and technology transfer;
- c) Provide financial support on forestry activities;
- d) Promote gender participation and youth involvement in forestry; and
- e) Sensitize investment in forest industry and trade.

#### 6.8 Private sector

The Private sector will:

- a) Invest in forests and forest industries development;
- b) Create partnership in management of conservation areas;
- c) Provide employment opportunities;
- d) Transfer sound production and processing technologies;
- e) Produce and add value on wood and NWFPs;
- f) Conduct market research of forest products and services;
- g) Conduct sustainable harvesting and utilization of wood and NWFPs;
- h) Create awareness and support outreach programme;
- i) Solicit funds for investment in forest industry;
- j) Promote Eco-tourism development; and
- k) Promote Public-Private Partnership arrangement in natural and forest plantations.

# 6.9 International Community

The International Community will:

- a) Provide financial and technical assistance;
- b) Facilitate capacity building in forest industry; and
- c) Support implementation of international obligations.

#### CHAPTER SEVEN

#### 7.0 MONITORING AND EVALUATION

## 7.1 Monitoring and evaluation framework

This framework shows how the overall forest sector development objective which is basically the impact of all interventions by various stakeholders can be achieved through systematic measures and controls. By creating common monitoring and reporting tools to be used by all stakeholders, this framework simplifies the overall national synthesis of plans, programmes, activities and reports. It links the policy objectives to the National Planning Frameworks as well as regional and international review and reporting frameworks.

The Ministry responsible for Forestry has the overall responsibility for the monitoring and evaluation (M&E) of the Policy implementation. Each stakeholder will have to establish a reliable internal monitoring system. This will ensure effective monitoring and evaluation and availability of capacity to assess efficiency and effectiveness of their respective organizations in relation to the National Forest Policy of 2018.

The M&E will involve, among other things, establishing baselines, indicators and source of information. Periodic tracking on progress on implementation of the milestones and targets will be done. In addition, there will be an annual review, which will focus on assessing whether the planned activities are in line with the achievement of set targets. Moreover, the review will involve conducting case studies, diagnostic studies, surveys, and beneficiary assessments to track any changes in terms of outputs realized over the period under review.

# 7.2 Objectives and guiding principles of National Forest Policy Monitoring and Evaluation frame work

# 7.2.1 Overall and specific objectives

The overall objective of M&E Framework is to guide implementation of the National Forest Policy through its Strategy. Specifically, the M&E framework intends to:

- a) Establish benchmark of indicators;
- b) Set targets and standards to guide implementation;
- c) Guide actors' participation in implementation and monitoring activities; and
- d) Control use of resources during implementation.

## **7.2.2 Guiding principles**

The primary goal of this M&E system is to enable stakeholders in the forest sector appreciate the progress made towards attainment of the Policy and objectives. Key guiding principles are:

- a) Build capacity for M&E
- b) Harmonization and Alignment of the framework with other M&E systems;
- c) Adoption of Result-Based- Management approach; and
- d) Flexibility in applying the M&E framework.

## 7.3 Scope of M&E framework

The M&E framework provides overall forest sector development trends. The framework covers but is not limited to the following:

- a) Assessment of inputs, processes, outputs, outcomes and impacts of the National Forest Policy implementation Strategy;
- b) Databases and reporting schedules used for the National Forest Policy M&E framework

#### 7.4 Performance indicators

The matrix of performance indicators is shown in Table 7.

Table 7: Performance Indicators for National Forestry Policy Monitoring and Evaluation Framework

Strategic	Output Indicators	Outcome/Impact	Baseline	Source
Objective	5	Indicators		
1. Forest a tree resource effective develop	knowledge on forest resources assessment An updated and functioning data management system	Period of updating state of forest information	Every five years starting from 2015	NAFORMA reports
and sustain manage		Tonnes of carbon stocks	1,124 million tonnes of carbon stocks	NCMC report,
	Number of tree grower associations A national forum for stakeholders Number of professional staff in germplasm production and management Number of germplasm supply centres  A regulatory system for tree germplasm transfer Number of tree seed orchards Number of tree seed banks		48.1 million hectares	
2. Forest Ecosys effecti	vely	Number of key beneficiaries directly contributing to management of forest ecosystems	13 institutions/organisations	Annual reports
conser	Area and number of Nature Fores Reserves	,	NFRs 600,000ha, 2 hotspots,	Annual reports, State of Biodiversity Report,

Strategic Objectives	Output Indicators	Outcome/Impact Indicators	Baseline	Source
		diversity), water flow and quality, area of forest types, healthy habitats, hotspots, wetlands, endemic species	96 endemic plant and animal species, 8 wetlands.	State of Forest Report, NAFORMA report
	Change in area of Forest damaged by fire, tree pests and diseases per year	Change in value (economic impact) of forest products due to fire, tree pests and diseases	25% of wood volume lost to pests and diseases Forest area destroyed by fire is 10mi ha /year	Annual fire reports, Annual forest health reports
			5% of urban forest and tree management systems	Tree planting Strategy implementation reports, Forest conservation
	Area gazetted for tree growing in urban environment			annual reports,
	Number of sites for eco-tourism attractions	Number tourists received	3,445 tourists visited 17 forest sites in 2017/2018	Annual eco-tourism reports, Special/focused study reports
	Sites declared Natural World Heritage	Number of internationally funded projects	2 projects	Annual performance reports,

Objective	Output Indicators	Outcome/Impact Indicators	Baseline	Source
3. Production of forest and tree	Number of indigenous tree species recommended and planted	Plantation area of indigenous tree species	3 species 200ha	Annual reports, tree planting Strategy implementation reports
products enhanced and	Number of NWFPs species recommended and planted	Area of NWFPs species plantations	3 species, 100 ha	Annual reports
sustained.	Number of wood fuel species planted	Area of wood fuel species plantations	4 species, 600 ha	Annual reports
	Diversity of wood products	Logging waste for indigenous tree species and plantations	2 wood products	Annual reports
	Types of efficient logging technologies used	Wood recovery from sawmilling	30% wood recovery	Annual reports
	Wood product branding framework	Products with labels and bar codes	2	Wood products grading reports
	Types of technologies used	Wood wastage in charcoal production	82%	Study reports
	Technologies used	Wood waste in artisanal industries	70%	Annual reports
	Agroforestry practices introduced	Number of farmers practicing Agroforestry	4 million farmers	Survey reports

St	rategic Objectives	Output Indicators	Outcome/Impact Indicators	Baseline	Source
4.	Investment in the Development of Forests and Tree Resources and Industries	Private and government plantations	Change in area of private and government forest plantations	600,000ha private 110,000ha government	Annual reports
	Enhanced	Number of wood and no-wood processing plants	Types and capacity of new wood and non-wood processing plants	630 industries	Survey reports
		Number of forest researchers	Types of products and innovations	100 researchers	Publications
		A framework for research funding	Number of researches	1 framework	Publication
5.	Human and Institutional Capacity to Deliver Services in Forest	Forestry institutions with adequate and quality facilities and resources	Capacity of Forestry institutions	50%	Annual reports Government
	Sector	A body to oversee forest professional matters  A forest stakeholders' forum			notice FBD
		An authority to manage public (Central and Local) forests			

St	rategic Objectives	Output Indicators	Outcome/Impact Indicators	Baseline	Source
6.	Regional and international cooperation enhanced	A forum for reviewing regional and international forestry issues	Number of international collaborative projects	15 projects	Project Agreements
7.	Impacts of HIV and AIDS infections in the forest sector reduced.	Preventive programmes for HIV/AIDS  Support to persons living with HIV and AIDS	HIV/AIDS prevalence rate	10 preventive programmes	HIV/AIDS status reports
8.	Gender equity and equality in the forest sector enhanced	Number of programmes supporting female participation in forestry value chain programmes established	Proportion of females in the forestry value chain	10%	Forestry Gender reports and Annual reports
9.	Good governance principles in the forest sector enhanced	Anti-corruption strategies customized in forest sector institutions and organizations  Mechanisms to curtail corruption in forest sector	Incidences of corruption	36%	Study reports on corruption index

# 7.5 Data collection and analysis

The main methods for data collection will be surveys, review of reports, field visits, institutional records and fora. The data will be analyzed and fed into the national forest database.

## 7.6 Monitoring and evaluation reports

## 7.6.1 Types of M&E reports

The following are the main M&E reports:

- i) Performance reports;
- ii) Evaluation reports;
- iii) Various reviews, studies and survey reports
- iv) Policy review

## 7.6.2 Reporting schedule

The reporting schedule is presented in Table 7.6.2

Table 7.6.2 Reporting schedule

Types of reports	Types of reports Contents		
Performance	Performance Consolidated reports covering progress on the		
reports	implementation of activities	annual reports	
Evaluation reports	Achievement of the Policy objectives, challenges and lessons learnt including Relevance, effectiveness, efficiency, impact/outcome and sustainability of interventions,.	2023 and Final	
Various reviews, studies and survey reports	Findings and recommendations on specific issues	As per need.	
Policy Review	Overall achievements of the National Forest policy objectives, challenges and lessons learnt.	After 10 Years	

# 7.6.3 Reporting Flows

Reports on achievement of targets and milestones will be prepared by responsible institutions and forwarded to the Ministry responsible for Forestry to produce consolidated performance reports on quarterly, semi-annual and annual basis. These reports will be disseminated to stakeholders for record and necessary actions. There will also be various meetings for the planned interventions to discuss successes and failures of different interventions. There

will also be meetings involving external stakeholders. The schedule of meetings to track the implementation progress as indicated in table 7.6.3.

**Table 7.6.3 Planned meetings** 

S/N	Type of meeting	Frequency	Chairperson	Participants
1	Division Meetings	Weekly	Director of Forestry and Beekeeping	All staff of the Division at headquarters
2	MNRT Management meetings	Twice a month	Permanent Secretary	All Heads of Division and Units
3	MNRT Pre Management meeting	Twice a month	Assistant Director M & E	Assistant Directors and Assistant to Head of Units
4	Quarterly performance review meetings	Quarterly	Permanent Secretary	All Heads of Divisions and Sections
5	Steering Committee Meetings	Quarterly	Co-chaired by PS MNRT and PMO RALG	MNRT, PMO RALG, NSAs, DPs,
6	National Forest Advisory Committee	Quarterly	Selected Chairperson among members	Retired forestry officers, private sector engaged in forestry, PMO RALG,
7	Midyear review meetings	Twice per annum	Permanent Secretary	All Heads of Division and Sections
8	Annual review meetings	Annually	Permanent Secretary	All Heads of Division and Sections
9	Performance Assessment Framework (PAF)	Annually	Co-Chaired between Govt and DPs	Forestry, Wildlife, Fisheries, NSAs and DPs
10	Joint Annual Review	Annually	DPP MNRT	MNRT, MDAs, NSAs and DPs

#### 7.6.4 Feedback Mechanism

A feedback mechanism will provide a two-way flow of information between report producers and users, the feedback will be incorporated in the sideways linkages among stakeholders to improve the quality of reports and report submission.

## 7.7 Use of Monitoring and Evaluation Information

The M&E reports will be used by stakeholders for:

- (i) Decision making;
- (ii) Better services delivery;
- (iii) Demonstrated results as part of accountability; and
- (iv) Planning.

#### 7.8 Action Plan

A National Forest Sector Action Plan covering all the Nine Policy areas will be developed in a participatory manner. The Action Plan will be developed after the approval of the Policy and Strategy.

#### CONCLUSION

This Strategy is primarily focused on achieving the policy objectives. Furthermore, it is expected to enable all stakeholders to participate in addressing the entire sector challenges; reduce implementation conflicts with other strategies, and create the space for creativity and design of relevant regulatory documents.

Prior to implementation of this Strategy, various baseline studies will be undertaken to establish basis for indicators. Various tools and methods will be employed to monitor progress. Resources will be mobilized from various sources to ensure successful implementation of the Strategy. Joint evaluation and review missions will be undertaken with the involvement of key stakeholders. The results of these evaluations will inform future plans for the development of the forest sector.