THE UNITED REPUBLIC OF TANZANIA

Ministry of Natural Resources and Tourism

FORESTRY AND BEEKEEPING DIVISION

STATUS, ECOLOGICAL POTENTIAL AND SUSTAINABLE MANAGEMENT OF FOREST RESOURCES IN MAINLAND TANZANIA

December, 2019

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PREFACE

Mainland Tanzania is endowed with vast forest resources. The forests under different ownership types support livelihoods of majority of the population and much of the National economy through provision of goods and services that support different sectors. Given their economic and ecological values, forests in Mainland Tanzania are managed under the Ministry of Natural Resources and Tourism (MNRT). The Forestry and Beekeeping Division (FBD) under the MNRT is responsible for developing policies, laws, and regulations. Law enforcement is vested to Tanzania Forest Services Agency (TFS) for National forest reserves, District Councils for Local Authority forest reserves, village councils for village forests and private entities for private forests.

Sustainable management of forest resources is critical in order to ensure that forests in Mainland Tanzania continue to benefit the current and the future generations. It is determined by timely knowledge on their status and strategic actions designed to respond to challenges on management of forests under different ownership types. This necessitates the Ministry to conduct a national wide survey to document the current status, strength, challenge and opportunities in management of forests under different ownership types in Mainland Tanzania after 4 years since the last report of NAFORMA which was published in 2015.

The report is therefore important in supporting planning, decision making and Policy development on how forests under different ownership types can be managed sustainably.

Prof. Adolf F. Mkenda

PERMANENT SECTRETARY

MINISTRY OF NATURAL RESOURCES AND TOURISM

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The Forestry and Beekeeping Division is further grateful to many stakeholders who were involved in provision of useful information and data, and their willingness to share ideas on many aspects of this study with the Task force team. Some of these include Government Ministries,

Departments and Agencies, Local Government Authorities, Universities, Research Institutions, Embassies (Norway and Finland) and Non-Government Organisations. In addition, the study entailed extensive field visits to observe actual situations and ascertain reported information.

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Dr. Ezekiel E. Mwakalukwa
Director of Forestry and Beekeeping Division
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EXECUTIVE SUMMARY

Background information

Mainland Tanzania is endowed with vast forest resources. Forests in Mainland Tanzania, directly and indirectly, support the livelihoods of majority of the population and much of the National economy, providing goods and services that support different sectors. Ecological and economic potential of forests under different ownership is known and justify the reason why they should be managed sustainably. Sustainable Forest Management (SFM) relies on forest administration. Accordingly, forest administration, policies, laws, and guidelines have evolved over time aiming at ensuring sustainability of forest resources in the country.

Therefore, MNRT decided to formulate a TF to undertake an assessment of status and ecological potential and management of forests under different ownerships since last report of NAFORMA in 2015, and recommend on better ways for sustainable management of forest resources in the country. Specifically, the assignment aimed to:

(i) Assess all forests under different ownership and determine their status in terms of degradation, ecological potentials that justify a particular forest reserve (FR)/forest in general land to be upgraded to a higher level of conservation status/ other management objectives/change of ownerships.

(ii) To examine the existing challenges and conflicts of ownership and forest resource management.

(iii) Establish criteria and justification on how a particular Local and Village Government-owned forests reserve/general lands can be changed their ownership status to other management authorities (e.g. CG, Village)/objectives (productive to protective) without causing any problem.

(iv) Identify which forests can be upgraded and change their ownership to other management authorities or other management objectives.

(v) To recommend how the Policy or Policy implementation strategies should accommodate transformation of TFS into Authority and paramilitary.

(vi) To recommend on how the Director of FBD should devolve power to TFS (Authority).

(vii) Assess and propose sustainable ways of managing and utilizing forest resources under different ownerships.

Methods

This study was implemented in all the 26 Regions of Mainland Tanzania and it involved the following: Preparation of the inception report to provide an overview of how the work will be implemented; conduct deskwork review to enable Development of data collection tools, and recommend suitable methods for data analysis; Consulting key stakeholders during fieldwork survey plus, visiting selected forests and villages for the purpose of triangulating preliminary results based on consultation with key informants, secondary data and remote sensing data.

A total of 99 Districts distributed in 26 Regions and seven TFS administrative zones were visited. During field visits, a total of 220 FRs/ Bee Reserves (BRs)/wildlife corridors were visited. Consequently, a total of 393 stakeholders representing 13 institutions were consulted in person while 88 stakeholders were consulted through telephone calls.

Findings and Conclusions

Key findings and conclusions were:

(i) Forest cover in Mainland Tanzania is about 48.1 million hectares. This is equivalent to 51% of total surface area or 54% of land surface area;

(ii) Forest cover falls under different ownership types namely Central Government (CG) (National Forest Reserves (NFRs)), Local Government Authorities (LGAs) (Local Authority Forest reserves (LAFRs)), village (Village Land Forest Reserves (VLFRs), community Forest Reserves (CFRs) and unreserved forests on . Large proportion of unreserved forest cover falls on village land (44% of total forest cover or 80% of the entire unreserved forest cover) and the rest on general (6% of total forest) and private (5% of total forest cover) lands;

(iv) Various categories of reserved area with forest are summarized as follows:

Reserved area category	Counts	Size (ha)	Percent (%)
Forest and bee reserved areas			
- NFRs	384	9,102,137.9	9.6
- BRs	13	44,069.8	0.05
- LAFRs	158	1,800,458.2	1.9
- VLFRs	589	1,356,759.4	1.4
All forest and bee reserved areas	*1,145*	*12,303,425.3*	*13.0*
Wildlife reserved areas			
- NPs	19	6,233,788.0	6.6
- NCA	1	829,200.0	0.9
- GRs	23	11,222,818.0	11.9
- GCAs	42	7,024,902.0	7.4
- WMAs	22	3,062,300.0	3.2
All wildlife reserved areas	*107*	*28,373,008.0*	*30.0*
Marine reserved areas			
- MPs and MRs	3	202,600.0	0.2
All marine reserved areas	*3*	*202,600.0*	*0.2*
All reserved areas	*1,255*	40,878,577.9	*43.3*

Note: Percentage of the total land surface in Mainland Tanzania i.e. 94,510,000 ha

(v) Tree species diversity, carbon and wood volume per hectare is relatively high in CG, LGAs and general lands implying that general land comprises of areas with ecological and economic potential;

(vi) In terms of land use/management objective, protection forests, production forests and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) have significantly high tree species diversity than other land uses;

(vii) Occurrences of big wild mammals outside reserved areas imply that such areas are important wildlife habitats, wildlife corridors or wildlife routes;

(viii) Tree cutting occurs in all land ownership types, management regimes and land uses including wildlife reserves (i.e. GRs, GCAs, NCA and NPs) and protection FRs contrary to policies and laws. Major drivers for tree cutting are agriculture, charcoal, firewood, pole and timber;

(ix) Overall annual deforestation is about 577,000 hectares between 2013 and 2018. Deforestation occurs both within reserved areas and outside reserved areas. About 34% of total deforestation occurs in reserved areas. Loss of forests is associated with agriculture and wood extraction for charcoal and firewood as major direct drivers and major indirect factors (economic, policy and institutional factors);

(x) There are a number of challenges related to keeping and management of forest data;

(xi) Challenges in management of forests under different ownership types include inadequate financial resources, inadequate human resources, poor infrastructure and management of assets, presence of FRs without management plans and ungazetted FRs, and weak law enforcement;

(xii) Conflicts related to the management of forest resources under different forest ownership types include boundary, forest resources ownership, resource use and revenue conflicts;

(xiii) The existing roles and responsibilities of the FBD and TFS seem to be different and no overlap between them. However, in practice TFS execute some roles and responsibilities which are beyond her jurisdiction;

(xiv) FBD has insufficient human and financial resources to be able to fulfil its duties successfully;

(xv) The study observed that one role of FBD "Identification of research areas, prioritization and coordination of research undertaken by various institutions and organizations in Forestry and Beekeeping Sector" is also listed among the roles and responsibilities of Tanzania Forestry Research Institute (TAFORI);

(xvi) The establishment of TFS did not change the institutional set-up of forest management in the country. Presence of multiple institutions with different capacities has created challenges in managing forest resources efficiently and effectively. Therefore, the ongoing process of transforming TFS to the proposed Tanzania Forestry and Beekeeping Authority (TFBA) is an important step towards improved forest management and administration;

(xvii) There are strengths, weaknesses, opportunities, and challenges related to TFS in the process of transformation to an Authority and paramilitary. Among others, the challenge is on how paramilitary system can integrate forest adjacent communities in forest management. Forest adjacent communities are important stakeholders who determine the outcome of forest management initiatives, therefore paramilitary system should not lead to exclusion of communities in forest management;

(xviii) The existing Policy and legal frameworks in the country provide favourable environment for SFM. Despite that, factors contributing to unsustainable forest management include inadequate human and physical resources, inadequacies in preparation and implementation of forest harvesting plans, benefit sharing, forest ownership and boundary conflicts.

Recommendations

Based on challenges related to management and administration of forest resources under different ownership types in Mainland Tanzania, and in order to ensure the overall sustainability of forest resources for the purpose of contributing to sustainable National development and economy, it is recommended that:

(i) An investigation on a total of 116 NFRs (i.e. 3,045,998 ha) and 70 LAFRs (i.e. 295,502 ha) identified from existing literature for the purpose of establishing validity of this information, their where about and status; and subsequently make appropriate decisions on such FRs;

(ii) Forest uses involving tree cutting in protective forest and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) that involve tree cutting is contrary to the Forest Act (2002) and Wildlife Conservation Act (2009), therefore necessary actions to terminate this need to be taken urgently;

(iii) Based on analysis of direct and indirect drivers of deforestation, the following sector-specific strategic interventions for addressing deforestation and forest degradation are proposed to be undertaken:

- Enhance education and awareness creation on the importance of forests, their sustainable use and consequences for their loss,
- Enhance effectiveness in Policy implementation and law enforcement,
- Enhance the involvement of adjacent communities with well-defined incentives and establishment of VLFRs/ CFRs as much as possible,
- Enhance promotion on the use of efficient stoves,
- Enhance SFM (e.g. forest use should comply with approved harvesting plan),
- Introduce plantations and woodlots for wood energy,

- Collaborate with the energy sector to determine and monitor energy need and sources,
- Promote beekeeping and income-generating forest-friendly undertakings so as to improve the household economy,
- Sensitize politicians on the social, economic and environmental importance of forests and their role in supporting life of the current and future generations so as to gain political support,
- Ensure degraded areas are rehabilitated, and
- Coordinate adequately with all relevant sectors to ensure forests are accrued by both the present and future generations;

(iv) Challenges facing wildlife corridors may be addressed as follows:

- Village participatory land-use planning and where necessary households may be relocated using appropriate legal procedures,
- Establish VLFRs or WMAs as deemed appropriate,
- Intensify management of FRs serving as a wildlife corridor, dispersal areas, buffer zones or migratory routes,
- Effective implementation of a land use plan,
- Implementation of regulations - wildlife corridor, route and buffer zone (Government Notice Number (GNN) 123 of March 2018),
- Effective enforcement of wildlife and forest laws,
- Sensitization of local communities on the benefits of conservation, and
- Effective measures to prevent wildlife-human conflicts and wildlife encroachment on farmsteads;

(v) Forest data are important in forest management therefore data archiving and management should be improved;

(vi) Comprehensive inventory and preparation of database for VLFRs, sacred forests and private forests should be undertaken;

(vii) Information on status and trends of forest resources generated through National forest inventory are essential for strategic planning, management, decision making, and Policy development and implementation. Therefore, the second National forest inventory need to be implemented urgently. The inventory should ensure that, (i) challenges during implementation of the first National forest inventory are carefully addressed; and (ii) forest inventory and forest cover monitoring designs are compatible;

(viii) Inadequate financial resources in forest management may be addressed by i) increasing budged allocation to TFS by considering the actual requirement for forest management, and ii) transform TFS to Authority for attaining full mandate to collect and use funds;

(ix) Inadequate financial resources for management of VLFRs may be addressed by creating a financial stream based on internal and external sources. External sources include financial support from various stakeholders, particularly the TaFF. TaFF should support management of protective VLFRs, priority should be given to forests with high externality values. The study recommends that apart from the current approach of providing funds on competitive basis, TaFF should develop a mechanism for supporting forests with higher externality values;

(x) Effective management of forest resources yield goods and services that support productivity of other important economic sect Would be good to have this table in one page. This can be achieved by setting zero space before and after text. Alternatively small table each for a reserved area category could be created. ors including water and energy sectors. Payment for Ecosystem Services (PES) has the potential to provide

financing to the forest sector yet the operational mechanisms have not been developed. Therefore, FBD should develop and coordinate implementation of PES mechanisms to generate financial resources for forest management. In addition, FBD should work with TaFF to develop and implement a plan for financing effective management of forest resources. Likewise, the Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) may be financed through various modalities such as occasional National wide fund raising in order to boost its capital investment and ensure sustainable support of forest management activities in Eastern Arc Mountains (EAMs);

(xi) Inadequate human resources in forest management may be dealt with by transforming TFS Agency to an Authority with an anticipation that an Authority will have relatively higher level of control of recruitment process;

(xii) Inadequate human resources in management of VLFRs may be addressed for TFS or the anticipated Authority to establish a training programme to VNRC and other village members under forestry extension services. The Extension Unit should be responsible for coordination and provision of all forestry training in villages in collaboration with other stakeholders such as Non-Governmental Organization (NGOs);

(xiii) Gazettment of all ungazetted FRs should be completed;

(xiv) Weak law enforcement should be addressed by enhancing law enforcement;

(xv) Political interference should be addressed through enhance extension service to educate politicians on importance of forest management and conservation;

(xvi) Resource conflicts over ownership, use and boundary may be addressed by:

- Supporting forest adjacent villages to prepare and implement village land use plans that show different land use categories in village land,

- Participatory resurvey of the forest to harmonize boundaries, and
- Forest boundary consolidation,
- Improve intra and inter-sectorial coordination through the establishment of stakeholders' forum that put all stakeholders together at least twice per year to discuss forest management challenges and defining solutions,
- For villages established within FRs, it is recommended that a thorough assessment be done to distinguish villages which settled in the area with formal government registration and those that settled without any legal base. Consequently (i) area of FRs occupied by villages settling within FRs and are registered should be revoked and such FRs should be re-surveyed as long as such a decision does not result into major environmental consequences e.g. affect water sources (ii) villages settling within FRs and are not registered should be evicted using appropriate mechanism;

(xvii) Inadequate community participation in the forest management may be addressed through one or a combination of the following:

- Improve Extension Unit for providing conservation education; and
- Enhance community participation in forest management through Participatory Forest Management (PFM);
- Signing and successful implementation of Joint Forest Management Agreement (JFMA) may increase revenue to Village Governments (VGs) hence use such funds to support management activities for VLFRs;

(xviii) The study recommends criteria that may be used presently and in future in ownership, management objective and status of forests for the purpose of ensuring sustainability of forest resources. The study further recommends that for any VLFR to be transferred to CG, at least three criteria should be met,

including seeking consent of the Village Government (i.e. Villagers through Village Assembly). seeking consent of the Village in changing ownership of VLFR is important because of the following:

- Setting aside VLFR is one of several land-use options that villagers may opt. Therefore, upgrading or changing ownership of the VLFRs may cause problems and make the process of creating new VLFRs difficult or even impossible in the future; and
- Some VLFRs have significantly contributed to improved livelihoods; hence changing ownership of such a forest may affect livelihoods and other accrued benefits;

(xix) In line with criteria for changing forest ownership, management objective and status, the study recommends the following changes to forest ownership, management objective and status:

- Ownership and management responsibilities of all LAFRs should be transferred from LGAs to CG under TFS,
- One NFRs to be changed from protective to productive FRs,
- Nine NFRs to be changed from productive to protective FRs,
- Nine NFRs to be changed from natural protective or productive to plantation FRs,
- Five LAFRs to be changed from protective to plantation FRs,
- One LAFRs to be changed from productive forest to protective forest,
- Twenty-nine National FRs to be changed to National Nature FRs; some FRs are too small to be as stand-alone Nature FRs hence such FRs may be combined

with others or combined with the existing Nature FRs depending on viability in terms of proximity,

- Four NFRs to be changed from FRs to other land uses (i.e. revoke),
- Eight LAFRs to be changed from FR to other land uses (settlement, farmland and others),
- Eighty-two unreserved forests to be converted to NFRs or VLFRs. A decision on whether unreserved land is to be upgraded to NFR or VLFR should be done in a participatory manner and in accordance with Part IV Section 23 of the Forest Act Number 14 of 2002;

(xx) The study recommends that TFS should implement its roles as stated in Section 2.0 (Status and governance), Sub-section 2.1 (Declaration of Agency Status) of Executive Agencies (TFS) Establishment Order (GN 269 of 30/7/2010). The study further recommends that FBD roles should be stated clearly for the purpose of avoiding overlap with other institutions.;

(xxi) In order to implement its new roles and responsibilities efficiently, staffing level and staff qualifications, infrastructure, tools, and equipment at FBD need to be improved. FBD will not be able to recruit staff up to District level, the use of TF involving technical staff from other institutions such as Universities, research centers and relevant NGOs for special tasks such as monitoring and evaluation of Policy implementation as well as supervision of law enforcement can be used especially when a wide coverage is required. Accordingly, the study recommends that, FBD responsibilities of preparing/revising of guidelines, monitoring and evaluation of Policy implementation as well as supervision of law enforcement in the sector should be financed by TaFF since among other the Fund aims to support sustainable use of forest resources. Supervision of law enforcement should be done at least twice annually while monitoring and evaluation of Policy implementation should be done twice within five-year period;

(xxii) Furthermore, the study observed that one role of FBD "Identification of research areas, prioritization and coordination of research undertaken by various institutions and organizations in Forestry and Beekeeping Sector" is also listed among the roles and responsibilities of TAFORI. Since TAFORI is the government institution responsible to coordinate forestry research in Tanzania, it is recommended that such role to be performed by TAFORI, instead of FBD;

(xxiii) This study supports the ongoing process of transforming TFS to an Authority and paramilitary under the MNRT due to strengths and opportunities associated with TFS. Accordingly, it is recommended that, the process of transforming TFS to an Authority and paramilitary, TFS weaknesses and challenges should be addressed;

(xxiv) Forest adjacent communities are important stakeholders who determine the outcome of forest management initiatives, therefore paramilitary system should not lead to exclusion of communities in forest management. The process of establishment of paramilitary may benefit from existing paramilitary system within the wildlife sector, however care is needed in adoption of approaches due to differences between management of wildlife and forests and what they mean to livelihoods;

(xxv) The study proposes Policy statements and functions of prospective TFBA;

(xxvi) The study recommends that, amendment in Target II in the Policy implementation strategy should be "Paramilitary Authority for management of all public forests, supporting the management of forests on the village and private lands established by June 2021". Currently, Target II reads: "Authority for management of all public forests established by June 2021";

(xxvii) The findings revealed that the developed forest management plans had exclusively focused on single forest site being managed; and none of them have analyzed actual wood demand. Therefore, forest management planning process

should determine actual wood demand and integrate other sources of wood production outside the FRs. Furthermore, as a short-term measure, a pessimistic allowable cut value of 1 m^3 ha^{-1} $year^{-1}$ should be adopted to ensure that harvesting does not exceed allowable cut as much as possible. Studies on regenerative and growth capacity, representing wide ecological variabilities and forest formation should be carried out and more precise allowable cut should be developed as a long-term solution. Such studies will also inform the forest management planning guidelines;

(xxviii) To address challenges related to disproportional distribution of staff and facilities within TFS centers, TFS should deliberately re-distribute staff and movable physical assets/facilities forest size being managed i.e. large size of forest being managed - high number of staff and physical resources. Likewise, as a long-term solution, sufficient working tools, equipment and machinery (vehicles, heavy plants, tractors) should be procured and adequate staff with required skills to manage forest and bee resources should be recruited;

(xxix) Guidelines for carrying out forest resources assessment, preparing and implementing harvesting plan should be revised to clearly state the standard approaches to be used. This should include sampling design, allowable error, and actual measurements, and defining harvestable stocking levels. In addition, it is recommended that an effective monitoring system to guide harvesting implementation including data verification process for NFRs and VLFRs be developed and implemented on a regular basis;

(xxx) Findings have shown that deforestation is higher in unreserved forests compared to forests under effective management including VLFRs, LAFRs and NFRs. Likewise, about 55% of total forest cover is unreserved. To comply to Forest Act of 2002 and ensure effective management of forest resources, it is recommended that all unreserved forests be put under effective management of either VGs or CGs depending on the inherent ecological values of different forest sites.

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LIST ACRONYMS AND ABBREVIATIONS

BR	Bee Reserve
CBFM	Community-Based Forest Management
CFR	Community Forest Reserve
dbh	diameter at breast height
DFM	District Forest Manager
DFO	District Forest Officer
EAM	Eastern Arc Mountains
EAMCEF	Eastern Arc Mountains Conservation Endowment Fund
FBD	Forest and Beekeeping Division
FGD	Focused Group Discussion
FR	Forest Reserve
FREL	Forest Reference Emission Level
GCA	Game Controlled Area
GN	Government Notice
GNN	Government Notice Number
GR	Game Reserve
ha	Hectare
JFM	Joint Forest Management
JFMA	Joint Forest Management Agreement
LAFR	Local Authority Forest Reserve
LGA	Local Government Authority
MCDI	Mpingo Conservation and Development Initiative
MNRT	Ministry of Natural Resources and Tourism

MP	Marine Park
MR	Marine Reserve
NAFORMA	National Forest Resources Monitoring and Assessment of Mainland Tanzania
NCA	Ngorongoro Conservation Area
NCAA	Ngorongoro Conservation Area Authority
NCMC	National Carbon Monitoring Centre
NFR	National Forest Reserve
NGO	Non-Governmental Organisation
NP	National Park
PF	Private Forest
PFM	Participatory Forest Management
PO-RALG	President's Office – Regional Administration and Local Government
REDD+	Reducing Emissions from Deforestation and forest Degradation; and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries.
SFM	Sustainable Forest Management
SWOC	Strength, Weakness, Opportunities, and Challenges
SUA	Sokoine University of Agriculture
TaFF	Tanzania Forest Fund
TAF	Tanzania Association of Foresters
TAFORI	Tanzania Forestry Research Institute
TAWIRI	Tanzania Wildlife Research Institute
TF	Task Force
TANAPA	Tanzania National Parks Authority

TAWA	Tanzania Wildlife Management Authority
TFBA	Tanzania Forest and Beekeeping Authority
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Services Agency
TNRF	Tanzania Natural Resources Forum
ToR	Terms of References
UDSM	University of Dar es Salaam
URT	United Republic of Tanzania
VF	Village Forest
VLFR	Village Land Forest Reserve
VNRC	Village Natural Resources Committee
WMA	Wildlife Management Area

1.0 INTRODUCTION

1. Background

Mainland Tanzania is endowed with vast forest resources. Forests in Mainland Tanzania, directly and indirectly support the livelihoods of majority of the population and much of the National economy, providing goods and services that support different sectors. For example, about 90% of Tanzania's hydro-electricity produced at major hydro-power stations is fed by water supply from catchment area within the Eastern Arc Mountains (EAMs) (EAMCEF, 2017). Likewise, the EAMs catchment is a source of water to both upstream and downstream users including major cities of Dar es Salaam and Tanga (Njana and Sanga, 2018). Another role played by forests particularly humid montane is soil conservation. A recent study reveals that water supply failure due to deforestation in EAMs would cost Dar es Salaam United States Dollar (USD) 4.6–17.6 million per year and Morogoro USD 308 thousand per year (Ashagre et al., 2018).

Ecological and economic potential of forests under different ownership is known and justify the reason why they should be managed sustainably (MNRT, 2015; Njana and Sanga, 2018). Despite that, little is known on the ecological potential of forests in general land. General land means all public land which is not reserved land or village land (URT, 1999). This means that forests on general land are not formally managed. Thus, parts of forests in general land with high ecological and economic values are likely to be subjected to unsustainable use.

Given their importance, it is urgent that forests are managed sustainably in order to ensure a sustainable supply of forest benefits. Forest management planning is an integral part of sustainable forest management (SFM). Forest management plans describe how the forest should be managed

taking into consideration their ecological and economic importance. It is professionally required that all management of forests is guided by a forest management plan which includes harvesting for productive forests. The same requirement is stated in the Forest Act No. 14 of 2002. Despite the fact that management planning is central in forest management, it is unclear whether and to what extent this practice is observed. Failure to comply with forest management planning may result into forest degradation and or deforestation. Hence there is a need to investigate the status of forests across different forest ownerships and unveil the ecological potential of forests under different ownership types for further management actions at Ministerial level.

The management of forest resources is vested under the jurisdiction of the MNRT. Proper functioning of the Division of Forestry and Beekeeping (FBD) determines the integrity of forest resources in the country. Also, there have been some management challenges and conflicts pertaining to management of forests under different ownership types suggesting that there is an immediate need to address such challenges and conflicts. Besides, among other factors, SFM relies on forest administration. Accordingly, forest administration, policies, laws, and guidelines have evolved over time aiming at ensuring sustainability of forest resources in the country. One remarkable change in institutional set up which aimed to improve forest management was the establishment of Tanzania Forest Services Agency (TFS) in 2010 by inheriting some responsibilities from FBD. Since the establishment of TFS, the FBD has maintained its role of developing policies, laws, and regulations. However, in practice, devolution of power and ability of each of these organs to execute their responsibilities adequately is not clear. Therefore, MNRT decided to formulate a Task Force (TF) to undertake an assessment of status and ecological potential and management of forests under different ownerships and recommend to the decision-makers on better ways for sustainable management of forest resources in the country.

2. Objectives

(i) Assess all forests under different ownership and determine their status in terms of degradation, ecological potentials that justify a particular forest reserve (FR)/forest in general land to be upgraded to a higher level of conservation status/other management objectives/change of ownerships.

(ii) To examine the existing challenges and conflicts of ownership and forest resource management.

(iii) Establish criteria and justification on how a particular Local and Village Government-owned forests reserve/general lands can be changed their ownership status to other management authorities (e.g. CG, Village)/objectives (productive to protective) without causing any problem.

(iv) Identify which forests can be upgraded and change their ownership to other management authorities or other management objectives.

(v) To recommend how the Policy or Policy implementation strategies should accommodate transformation of TFS into Authority and paramilitary.

(vi) To recommend on how the Director of FBD should devolve power to TFS (Authority).

(vii) Assess and propose sustainable ways of managing and utilizing forest resources under different ownerships.

2.0 STUDY AREA AND METHODS

2.1. Study area

This study was implemented in all the 26 regions of Mainland Tanzania.

2.2. Implementation design

The study was implemented in accordance with an approved work plan. The work plan entailed: Preparation of the inception report; development of data collection tools; Collection and review of key literature; Consultation of key stakeholders; Visiting selected forests and villages for the purpose of triangulating preliminary results based on consultation with key informants, secondary data and remote sensing data; Detailed data analysis and report preparation and submission.

2.3. Data collection

2.3.1 Desk-work

For the purpose of this assignment, published and unpublished literature were collected from various sources and consequently reviewed. Reviewed literatures are presented in Table 1.

Table 1: Summary of literature collected and reviewed

SN	Category	Literature
1.	Policies	♦ Draft National Forest Policy, ♦ National Forest Policy of Tanzania (1998), ♦ National Land Policy of Tanzania (1995), ♦ National Human Settlements Development Policy (2000), and ♦ The Wildlife Policy of Tanzania (2007).
2.	Laws and regulations	♦ Executive Agencies Act and Regulations (2002), ♦ Forest Act (2002), ♦ Land Act (1999), ♦ Wildlife Conservation Act (2009),
		♦ Mining Act (2010), ♦ Tanzania Forest Services establishment order (2010), ♦ The Urban Planning Act (2007), ♦ Village Land Act (1999), ♦ Forest Regulations, and ♦ Wildlife Corridor Regulations.
3.	Guidelines	♦ Guidelines for participatory village land use planning, administration, and management in Tanzania, ♦ Community-Based Forest Management (CBFM) guidelines (2007), ♦ Joint Forest Management (JFM) guidelines (2007), ♦ Forest management plan preparation guidelines (2007), ♦ Forest harvesting guidelines for VFLRs (2015), ♦ Guidelines for natural forest products harvesting and trade (2015).
4.	Others	♦ Draft National Forest Policy implementation strategy, ♦ Existing management plans, ♦ FRGNN, ♦ Harvesting plans, ♦ Forest Reference Emission Level (FREL) for Tanzania, ♦ National REDD+ Strategy, ♦ National Forest Resources Monitoring and Assessment of Mainland Tanzania (NAFORMA) report (2015Participatory Forest Management (PFM) facts and figures, ♦ Published articles, ♦ TFS strategic and business plan, and ♦ Village land use plans.

2.3.2 Consultation of Key Stakeholders and Field Work

The key stakeholders identified for consultation include MNRT (FBD, Wildlife Division (WD), Directorate of Policy and Planning (DPP), Tanzania Forest Fund (TaFF)), TFS (Headquarters, Zonal, and selected District offices), Tanzania Wildlife Management Authority (TAWA), Sokoine University of Agriculture (SUA), University of Dar es Salaam (UDSM),

Tanzania Forestry Research Institute (TAFORI), Tanzania Wildlife Research Institute (TAWIRI), President's Office – Regional Administration and Local Government (PO-RALG), PFM stakeholders (e.g. Tanzania Forest Conservation Group (TFCG), Mtandao wa Jamii wa Usimamizi wa Misitu Tanzania (MJUMITA), World Wide Fund for Nature (WWF), Mpingo Conservation and Development Initiative (MCDI), Tanzania Natural Resources Forum (TNRF), Carbon Tanzania (CT), Tanzania Association of Foresters (TAF), Eastern Arc Mountains Conservation Endowment Fund (EAMCEF)). Fieldwork entailed consultation of TFS Zonal Managers and District Forest Managers (DFM), District Council Forest Officers (DFOs), village government (VG), village natural resources committees (VNRCs) and field visits to selected FRs, bee reserves (BRs), wildlife corridors, and unreserved forests. A total of 99 Districts distributed in 26 Regions and seven TFS administrative zones were visited. During field visits, a total of 220 FRs/BRs/wildlife corridors were visited. Consequently, a total of 393 stakeholders representing 13 institutions were consulted in person while 88 stakeholders were consulted through telephone calls. Table 2 summarises areas and stakeholders consulted. List of visited FRs/BRs/wildlife corridors is presented in Appendix 1, while list of Stakeholders consulted in person are presented in Appendix 2 and those consulted through telephone calls are in Appendix 3. Data collection instruments are presented in Appendix 4.

Information gathered from stakeholders includes:

- List, sizes, and status of forests under different ownerships;
- Opinions on criteria to be used for changing forest ownership, status and management objective;
- Forest management challenges across forests ownerships;
- Drivers of forest degradation and deforestation under different forest ownerships;
- Compliance of forest owners to forest regulations/Policy;
- Conflict associated with forest resource ownership, resource use and forest boundary;
- Opinions on strength, weakness, opportunities, and challenges for transforming TFS to Authority and the paramilitary system;
- Opinions on powers and mandates of FBD and TFS;

- Opinions on how the forest from different ownership should be managed sustainably.

Table 2: Summary of visited Districts, FRs/BRs/wildlife corridors, and consulted stakeholders

Zone	Regions	Count of Districts	Count of FRs/ BRs/wildlife corridors	Count of interviewed stakeholders	
				In person	Telephone
Central	Dodoma	6	9	36	6
	Manyara	5	8	36	1
	Singida	4	6	23	1
Eastern	Dar es Salaam	4	4	11	0
	Morogoro	6	21	19	5
	Pwani	6	24	12	3
Lake	Geita	3	6	9	2
	Kagera	3	5	7	8
	Mara	1	1	4	9
	Mwanza	4	3	9	6
	Simiyu	1	1	7	3
Northern	Arusha	6	10	27	2
	Kilimanjaro	3	7	17	7
	Tanga	6	8	36	12
Southern	Lindi	4	12	15	1
	Mtwara	3	8	5	2
	Ruvuma	3	12	17	2
Southern highlands	Iringa	2	6	6	1
	Mbeya	4	6	14	2
	Njombe	2	2	5	3
	Rukwa	3	7	12	0
	Songwe	5	11	13	2
Western	Katavi	3	9	9	0
	Kigoma	5	12	19	1
	Shinyanga	2	7	5	2
	Tabora	5	15	20	7
Total		**99**	**220**	**393**	**88**

Note: Visited 140 National Forest Reserves (NFRs), 30 Local Authority Forest Reserves (LAFRs), 2 unnamed forests, and 48 Village Land Forest Reserves (VLFRs).

2.4. Data Analysis

2.4.1 Socio-economic data

For socio-economic data, a content analysis was used to analyze socio-economic data collected through Focused Group Discussion (FGD) and in-depth interview with key informants. This was done by breaking down the components of recorded dialogue with the respondents into the smallest meaningful units of information or themes. Triangulation was done between qualitative and quantitative data.

2.4.2 Biophysical data

Biophysical data were analyzed in order to generate information on (i) current status and ecological potential and (ii) forest degradation, deforestation within and outsideFRs/other protected areas. As much as possible efforts were done to present results across vegetation types, land ownership types, and land use/land management objectives.

In order to assess current status and ecological potential of forests at a national level, current forest inventory data based on National Forest inventory is required. The first National Forest inventory in Mainland Tanzania commonly known as NAFORMA was implemented between 2009 and 2013. Forest inventory provides information on quality and quantity of forest resources. National forest inventories are the main source of information on the status and trends of forest resources for strategic planning, decision making, and policy development at National level. National forest inventory data are also used in reporting to international conventions and agreements.

Normally National Forest inventories are carried out between 5 to 10 years. No other National Forest inventory has been implemented in Mainland Tanzania since 2013. Accordingly, the first NAFORMA data is the best available data and was used to assess the current status and ecological potential of forest resources in the country. Similarly, forest degradation was assessed using NAFORMA data i.e stump data. Throughout this

report, results on forest degradation meancounts or quantity of cut trees presented using standard forest parameter i.e., counts of cut trees per hectare and basal area per hectare while drivers for forest degradation means reasons for cutting trees.

Deforestation was assessed using land cover change analysis for the period between 2013 and 2018. In this regard, Landsat was used. The analysis focused on change from forest to non-forest. For the purpose of this analysis, National Forest definition was employed. Accordingly, forest means an area of land with atleast 0.5 ha, with minimum tree cover of 10% or with existing tree species planted or natural having potential of attaining more than 10% crown cover, and with trees which have the potential or have reached a minimum height of 3m at maturity in situ (URT, 2016). Land use and land cover classes are presented in Table 3.

GIS and Remote sensing software i.e., Erdas imagine, Collect Earth, ArcGIS, QGIS, and R was used in the analysis.

Results on deforestation were compared with National-level results reported previously for the purpose of developing a Forest Reference Emission Level (FREL) for Tanzania (URT, 2017). The reference period for FREL deforestation was between 2002 and 2013. This reference period was selected because of the availability of Landsat 7 ETM+ in the base year and availability of land cover and land use map as well as reference data from NAFORMA (MNRT, 2015).

Table 3: Land cover classes for estimation of deforestation

Land cover classes	Land cover classes for mapping	National land cover description
Forest land	Forest	An area of land with at least 0.5 ha, with a minimum tree crown cover of 10% or with the existing tree species planted or natural having the potential of attaining more than 10% crown cover, and with trees which have the potential or have reached a minimum height of 3 m at maturity in situ. It includes montane, lowland, mangrove and plantation forests, woodlands, thickets, cultivated land mixed crops and cultivated land with wooded crops
Bushland	Non-forest	Bushland predominantly comprises of wooded plants, which are multi-stemmed from a single root base. It includes dense and open bushland except for thickets
Grassland		For the most part, grassland occurs in combination with either limited wooded or bushed component, or with scattered subsistence cultivation.
Cultivated land		Land, which is actively used, and grows agriculture crops including agroforestry systems, herbaceous crops,and grain crops
Other lands		Land that includes settlement, bare land,and rock outcrop, costal bare lands, ice cap/snow
Wetland	Wetland	Land which is water logged may be wooded such as marshland, perennial flooded plains and swampy areas.
Water	Water	Indian Ocean and inland water

2.5 Organisation of the report

This report consists of four main Sections including: introduction; study area and methods; findings; conclusion and recommendations. The introduction Section comprises of background as well as objectives of the study. The study area and methods Section introduce the study area, implementation design of the study, data collection and analysis methods. The findings Section is organized based on the objectives of

the study as follows: Objective one under Sub-section 3.1, Objectives two Sub-section 3.2; Objective three under Sub-sections 3.3; Objective four under Sub-section 3.4; Objective five and Objective six under Sub-section 3.5 and Objective seven falls under Sub-section 3.6. The conclusion and recommendations Section summarise key findings and provides recommendations. A list of all reviewed publications and other documments is provided in the reference Section. The appendices Section includes all information that could not be part of the main document but are very important for making references or getting detailed information.

3.0 FINDINGS

3.1 Extent, ecological potential and status of forests under different ownership types

3.1.1 Forests ownership types

According to the Land Act of 1999, all land is public; this includes granted land, customary land or unoccupied land. The Land Act recognizes three land categories: (i) reserved land, (ii) village land and (iii) general land. Therefore, Land Policy (1995), Land Act (1999) and Village Land Act (1999) provide Policy and legal frameworks for land rights and management responsibilities. In line with this, throughout this report ownership would imply right and management responsibility of a given land. Forests falling under formal ownership types are well prescribed in Part II, section 4 of the Forest Act No. 14 of 2002. The Forest Act categorizes forests in Mainland Tanzania as follows:

(i) National Forest Reserves (NFRs),
(ii) Local Authority Forest Reserves (LAFRs),
(iii) Village Forests (VFs) and
(iv) Private Forests (PFs).

National forests are owned by CG and their management is vested under the Tanzania Forest Service (TFS) Agency in the Ministry of Natural Resources and Tourism (MNRT). TFS was established in 2010 and became fully operational in 2012. TFS inherited roles and responsibilities of the FBD over management of National forest and bee resources.

LAFRs are owned and managed by LGAs including City Councils (CCs), municipal councils (MCs), town councils (TCs), and District councils (DCs); all under the President's Office – Regional Administration and Local Government (PO-RALG).

The VFs and PFs are owned and managed by VG and private entities respectively. Other reserved areas with forest cover that do not fall under the four forest ownership categories include:

(i) National Parks (NPs),
(ii) Ngorongoro Conservation Area (NCA),
(iii) Game Reserves (GRs),
(iv) Game Controlled Areas (GCAs),
(v) Wildlife Management Areas (WMAs),
(vi) Marine Parks (MPs) and Reserves (MRs), and
(vii) BRs.

The NPs are managed by Tanzania National Parks Authority (TANAPA) while NCA is managed by Ngorongoro Conservation Area Authority (NCAA). TAWA is responsible for management of GRs, and GCAs. WMAs are managed by villages in collaboration with TAWA. On the other hand, MPRs are managed by MPs and MRs Unit. TANAPA, NCA, and TAWA are under MNRT while MPRU is under the Ministry of Livestock and Fisheries. The BRs are managed by TFS.

NFRs

These are forests which are owned and managed by the CG. Some use rights in these FR can be granted to neighboring villages through JFM or to individuals or companies through permits and licensing. The NFRs consist of FRs, Nature FRs, and forests in general land. These forests are further described as follows:

(i) **FRs**: these are forest area set aside for two main purposes: a) protection of steep slopes, water catchments areas and diverse biological ecosystems; and b) production of forest products including timber, fuel wood, gums, resins, and bark.

(ii) **Nature FRs**: these FRs have attained the highest level of protection under the Forest Act Number 14 of 2002. In these forests, no extraction of woody or animal species is allowed and generally restricted to research, education and nature-based tourism activities.

(iii) **Forests on general land:** these are forests found on unreserved land, unoccupied or unused land in the village land, and are under control of the TFS.

LAFRs

These are forests either for productions or protections. These consist of the following categories:

(i) **LAFRs**: These are reserved forests (natural or plantation) that are under the jurisdiction of the CCs, MCs, TCs, and DCs.

(ii) **Forests on general land:** These are forests found on public land which is not reserved or village forest or unreserved land, unoccupied or unused land in the village land. However, the Forest Act of 2002 (Part II Section 4 a, b and c) does not explicitly define under what situation do these forests fall under jurisdiction of LGAs, TFS and VG. Lack of clarity of forests on general land has contributed too many conflicts or tension between VGs, TFS and LGAs especially during revenue collection from forest products.

Village Forests (VFs)

These consists of all forests found within a registered village, land demarcated and agreed to as village land by the relevant VG. They consist of:

(i) **Village Land Forest Reserves (VLFRs):** The VLFRs fall under the registered village area and is owned by a community as a whole and managed by democratically elected Village Natural Resource Committee (VNRC) on behalf of the village council (URT, 2002, 2007);

(ii) **Community Forest Reserves (CFRs):** Are forests within a village area set aside by a group in the community, with the support of the Village Assembly and the village council; and

(iii) **Unreserved forests:** Forests which are not reserved which are on village land and their management is vested in the Village Council. However, according to Forest Act No. 14 of 2002, all unused or unoccupied village land is considered to be a general land. According to the TFS establishment Order (2010), management

of forests on General land is vested to TFS. Both the Forest Act (2002) and TFS establishment order recognize the definition of general land as defined in the Land Act (1999).

Private forests (PFs)

PFs consist of the following categories:

(i) Forests on village land held by one or more individuals under a customary right of occupancy; and

(ii) Forests on general or village land of which the rights of occupancy or a lease has been granted to a person or persons or a partnership or a corporate body or a Non-Governmental Organization (NGO) or any other body or organization for the purpose of managing the forest as stipulated in the Forest Act No. 14 of 2002.

3.1.2 Extent of forests (including BRs) under different ownership types

The total surface area in Mainland Tanzania is about 94.5 million hectares while the forest cover is about 48.1 million hectares (MNRT, 2015); this is equivalent to 51% of total surface area or 54% of land surface area. An official definition of **forest cover** for Tanzania is provided in Table 3. However, it is important to distinguish the two terms '**forest cover**' and '**forest area**'. **Land cover** corresponds to a physical description of Earth's surface (e.g. forest, water, crop) while **forest area** is a land use meaning activities undertaken on a piece of land or the use/purpose of a piece of land (e.g. FR, NP).

The distribution of total forest cover in terms of coverage (hectares) and proportion (percent) out of total forest cover *(48,090,700ha)* across land categories/ownership types in Mainland Tanzania is summarized in Table 4 (MNRT, 2015).

Table 4: Distribution of forest cover in different land categories/ ownership types in Mainland Tanzania

Land category/ownership type	Forest cover (ha)	Percent (%)
CGland		
- Reserved land	16,610,581	34.5
- General land	2,733,824	5.7
Total forest cover in Central Govermnet land	**19,344,405**	**40.2**
LGA land	3,107,351	*6.5*
VG	21,975,094	45.7
Private	3,515,889	7.3
Not known/no data	147,961	0.3
Total forest cover	**48,090,700**	**100**

According to MNRT (2015), CG land is land administered by CG agency such as TFS or parastatal such as Tanzania NPs (TANAPA) while Local government Authority (LGA) land is land administered by LGAs which includes FRs decentralized to LGAs in the 1970s. Private land falls within village or general lands where land holder(s) is granted right of occupancy or leasehold.

As introduced in Sub-section 3.1.1, the Land Act recognizes three land categories: (i) reserved land, (ii) village land and (iii) general land. All land categories have varying proportion of forest cover. Reserved land entails a number of Sub-categories, some with forest cover and others without forest cover. Reserved land with forest cover includes (i) forest reserved area (i.e. FRs), (ii) wildlife reserved areas (e.g. NPs, GRs) and (iii) marine reserved areas (e.g. MPs). Equally, a varying proportion of forest cover falls within village and general lands.

Figure 1 presents spatial distribution of forest cover in 2013 and 2018. Southern, Southern highlands, Western and Eastern zones have a higher proportion of forest cover both in 2013 and 2018. However, time-series statistics of forest cover reported by FAO (2015) shows a decreasing trend of forest cover in Tanzania (Figure 2).

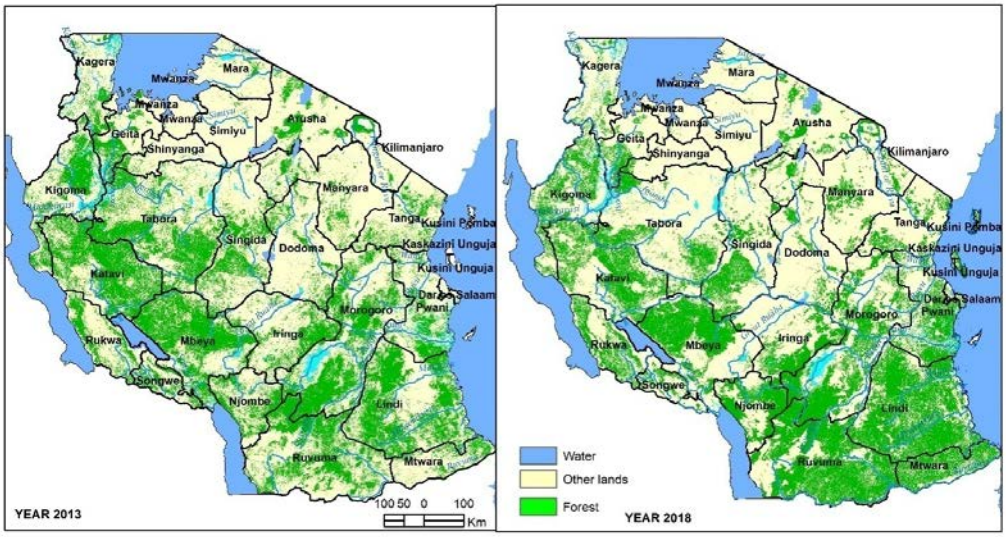


Figure 1:Distribution of forest cover in Mainland Tanzania in 2013 and 2018

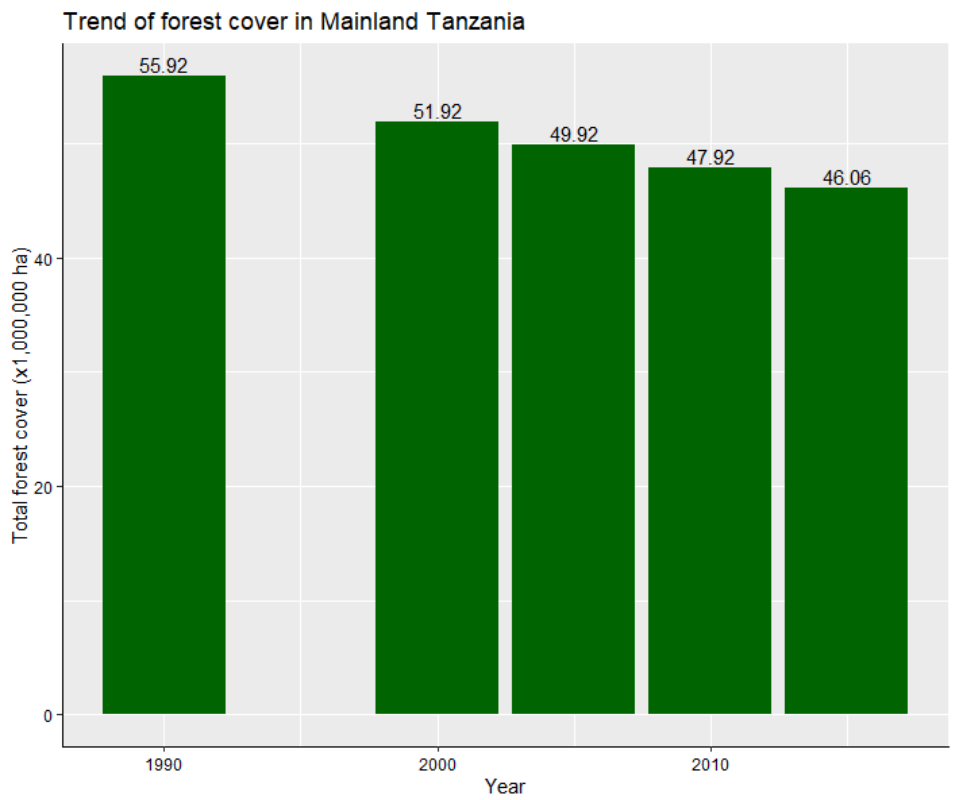


Figure 2: Trend of forest cover in Mainland Tanzania

Various categories of reserved land (i.e. reserved area with forest cover) and their coverage in terms of size (in hectares) and proportion (i.e. percent) out of total land surface are summarized in (Table 5).

Table 5: Summary of statistics of forest and wildlife reserved areas in Mainland Tanzania

Reserved area category	Counts	Size (ha)	Percent (%)
Forest and bee reserved areas			
- NFRs	384	9,102,137.9	9.6
- BRs	13	44,069.8	0.05
- LAFRs	158	1,800,458.2	1.9
- VLFRs	589	1,356,759.4	1.4
All forest and bee reserved areas	**1,145**	**12,303,425.3**	**13.0**
Wildlife reserved areas			
- NPs	19	6,233,788.0	6.6
- NCA	1	829,200.0	0.9
- GRs	23	11,222,818.0	11.9
- GCAs	42	7,024,902.0	7.4
- WMAs	22	3,062,300.0	3.2
All wildlife reserved areas	**107**	**28,373,008.0**	**30.0**
Marine reserved areas			
- MPs and MRs	**3**	**202,600.0**	**0.2**
All marine reserved areas	**3**	**202,600.0**	**0.2**
All reserved areas	**1,255**	**40,878,577.9**	**43.3**

Note: Percentage of the totalland surface in Mainland Tanzania i.e. 94,510,000 ha

Forest reserved areas are comprised of NFRs/BRs, LAFRs and VLFRs. Furthermore, NFRs include mangroves (*n = 14, size = 130,541.6 ha, Appendix 5*), Nature FRs (*n = 17, size = 881,591.7 ha*, *Appendix 6*), natural FRs (*n = 328, size = 7,591,728.5 ha, Appendix 7*), BRs (*n= 13, size = 44,069.8 ha, Appendix 8*), and plantation FRs (*n = 25, size = 498,276.1 ha*, *Appendix 9*). Likewise, LAFRs consist of natural FRs (*n = 154, size = 1,799,143.8 ha*, *Appendix 10*) and plantation FRs (*n = 5, size = 1,365.0 ha, Appendix 11*). Additionally, VLFRs are comprised of natural forests (*n = 14, size = 130541.6 ha, Appendix 12*). List of specific wildlife and marine reserved areas are provided in Appendices as follows: NPs – Appendix

13, GRs – Appendix 14, GCAs – Appendix 15, WMAs – Appendix 16, and MPs and MRs – Appendix 17.

The spatial distribution of forest reserved areas (NFRs and LAFRs) and wildlife reserved areas is presented in Figure 3 whereby NFRs and LAFRs are highly distributed in Western zone while wildlife reserved areas are distributed in Southern and Southern highlands.

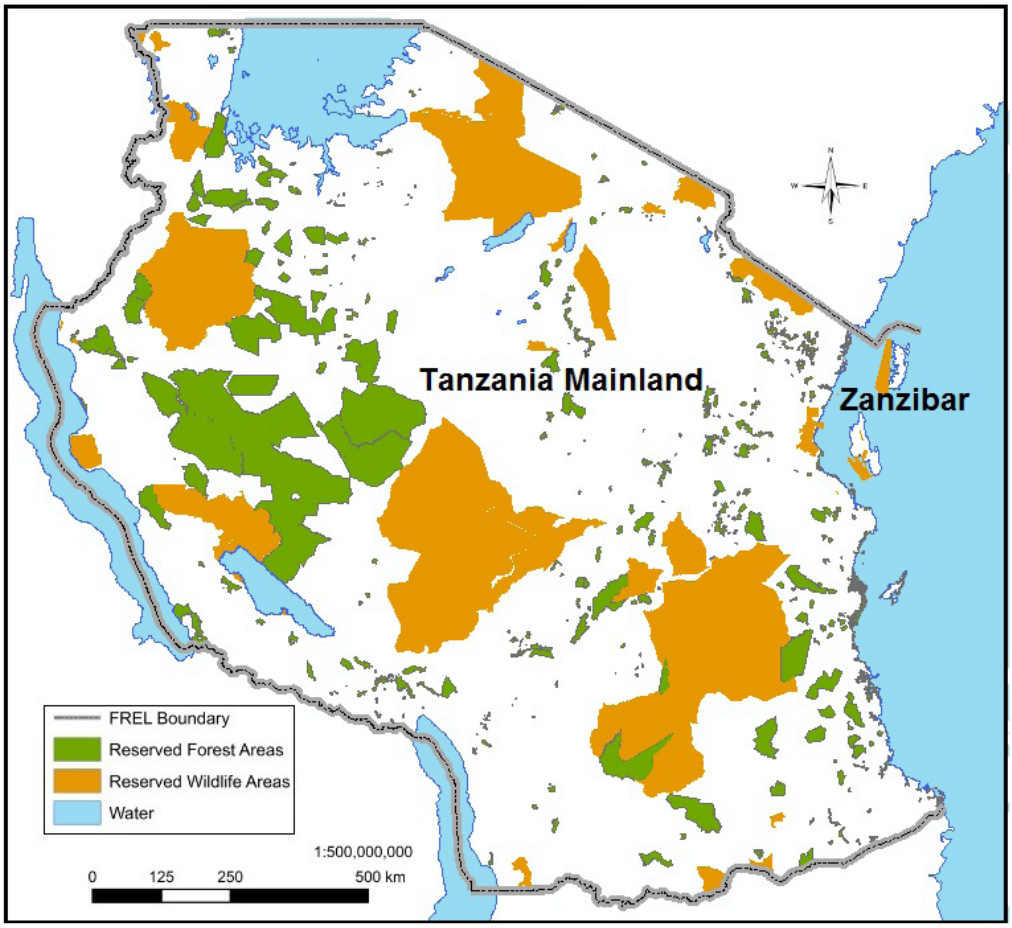


Figure 3 : The distribution of forest (NFRs/LAFRs) and wildlife reserved areas

Statistics summarized in Table 6 shows that NFRs managed for the purpose of protection, production and both protection and production

represent 30%, 38% and 27% respectively. Likewise, out of all LAFRs 17% are protective, 71% productive and 12% are both protective and productive. On the other hand, about 8% of VLFRs are protective, 12% productive and 46% both protective and productive. Few FRs have no forest management objectives meaning that such forest areas have changed to either settlement areas or farm land hence no ongoing forest management activities.

Table 6 : Summary of statistics for FRs (including BRs) under different ownership types

Item	NFRs	LAFRs	VLFRs
Total forest area (ha)	9,102,137.9	1,800,458.2	1,356,759.4
Total count ofFRs	384	158	589
Mean size of FRs (ha)	23,153.1	11,324.0	2,303.5
Min. size of FRs (ha)	4.1	4.0	0.9
Max. size of FRs (ha)	679,871.0	239,833.0	167,400.0
Total area (ha) of protective FRs	2,746,076.3	311,504.0	112,500.0
Total count of protective FRs	297	114	56
Total area (ha) of productive FRs	3,493,880.2	1,281,529.7	167,892.0
Total count of productive FRs	61	34	47
Total area (ha) of protective and productive FRs	2,459,383.2	207,379.6	630,638.1
Total count of protective and productive FRs	22	9	85
Total area (ha) of BRs	44,069.8	-	-
Total count ofBRs	13	-	-
Total area (ha) of FRs with no management objective	402,798.2	45.0	-
Total count ofFRs with no management objective	4	1	-
Total area (ha) of FRs with no data	-	-	445,729.3
Total count of FRs with no data	-	-	401

Since independence in 1961, area of forests managed as FRs has increased from 7.34 million hectares to 9.17 million hectares for NFRs (Figure 4), from 0.87 million hectares to 2.06 million hectares for LAFRs (Figure 5) and from none to 1.36 million hectares for VLFRs (Figure 6). The none forest area under VLFR is attributable to lack of appropriate

environment by past forest policies that encouraged different stakeholders to participate in forest management. The existing National Forest Policy (1998) recognizes and encourages other stakeholders to participate in forest management (Figure 6).

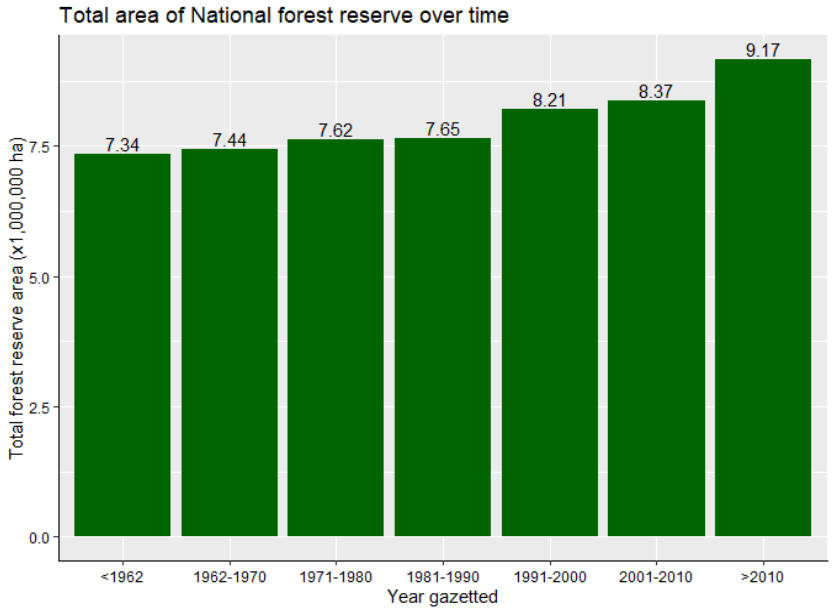


Figure 4: Area under NFRs over time

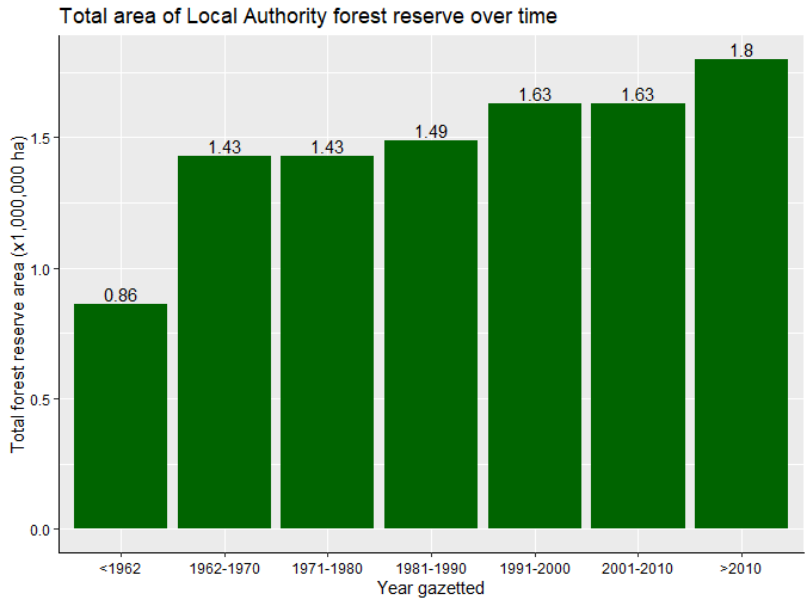


Figure 5: Area under LAFRs over time

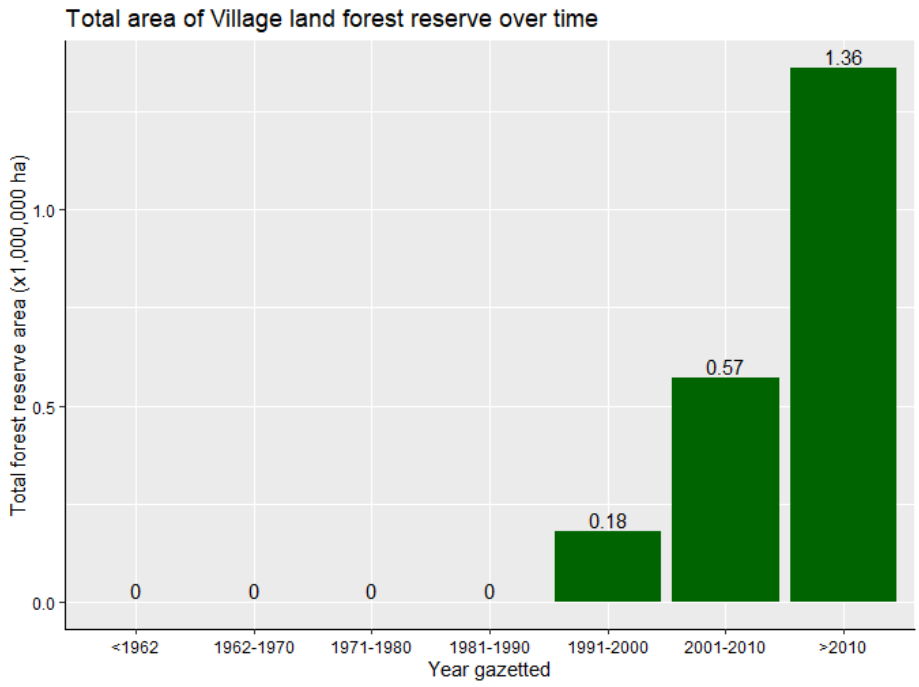
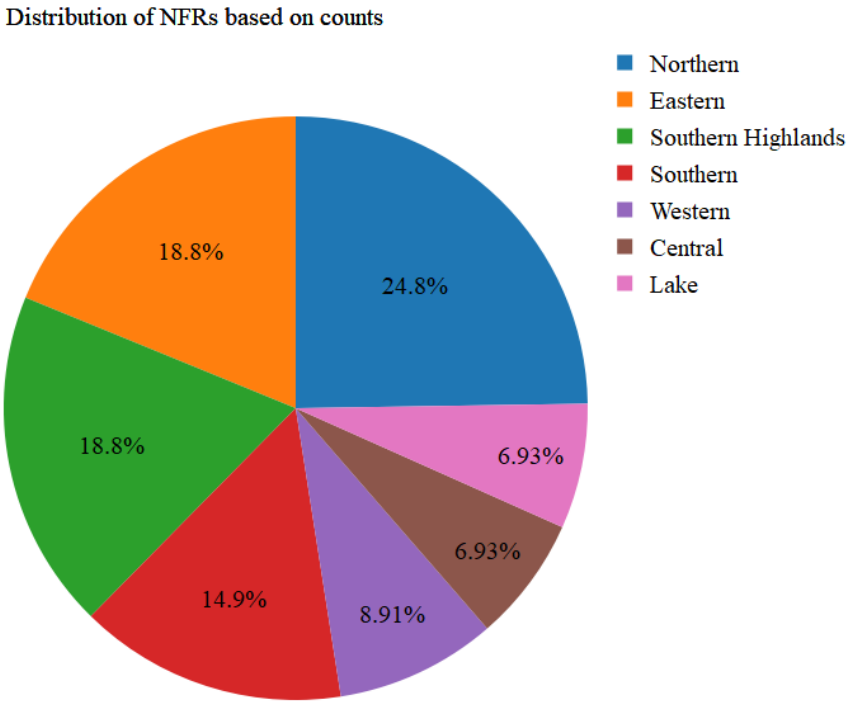


Figure 6: Area under VLFRs over time

Distribution of FRs based on counts and size across zones is summarized in Figures 7, 8 and 9. Northern, Eastern and Southern highlands zones have higher counts of NFRs (> 15%) while Lake, Central and Western zones respectively, have less than 10% of all NFRs (Figure 7). Findings further show that; Western zone constitutes more than 60% of all NFRs in terms of size. NFRs in Central and Northern zones combined are equivalent to less than 5% of all NFRs in terms of size.

Northern, Southern highlands and Western zones respectively, have higher counts of LAFRs (> 15%). On the other hand, Central and Eastern zones each have less than 10% of all NFRs (Figure 8). Furthermore, Western zone has more than 70% of all LAFRs in terms of size.



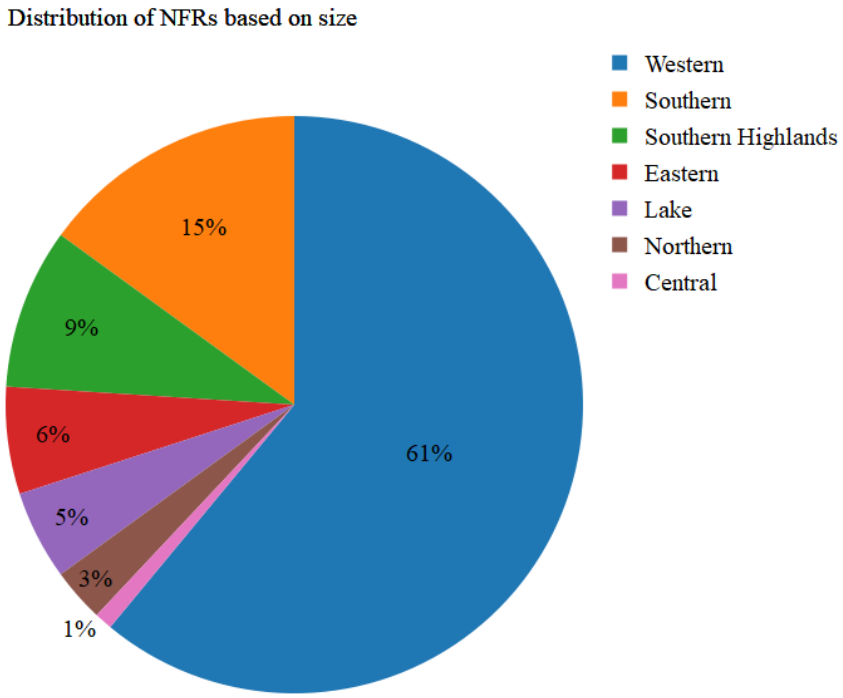


Figure 7 : Distribution of NFRs across zones

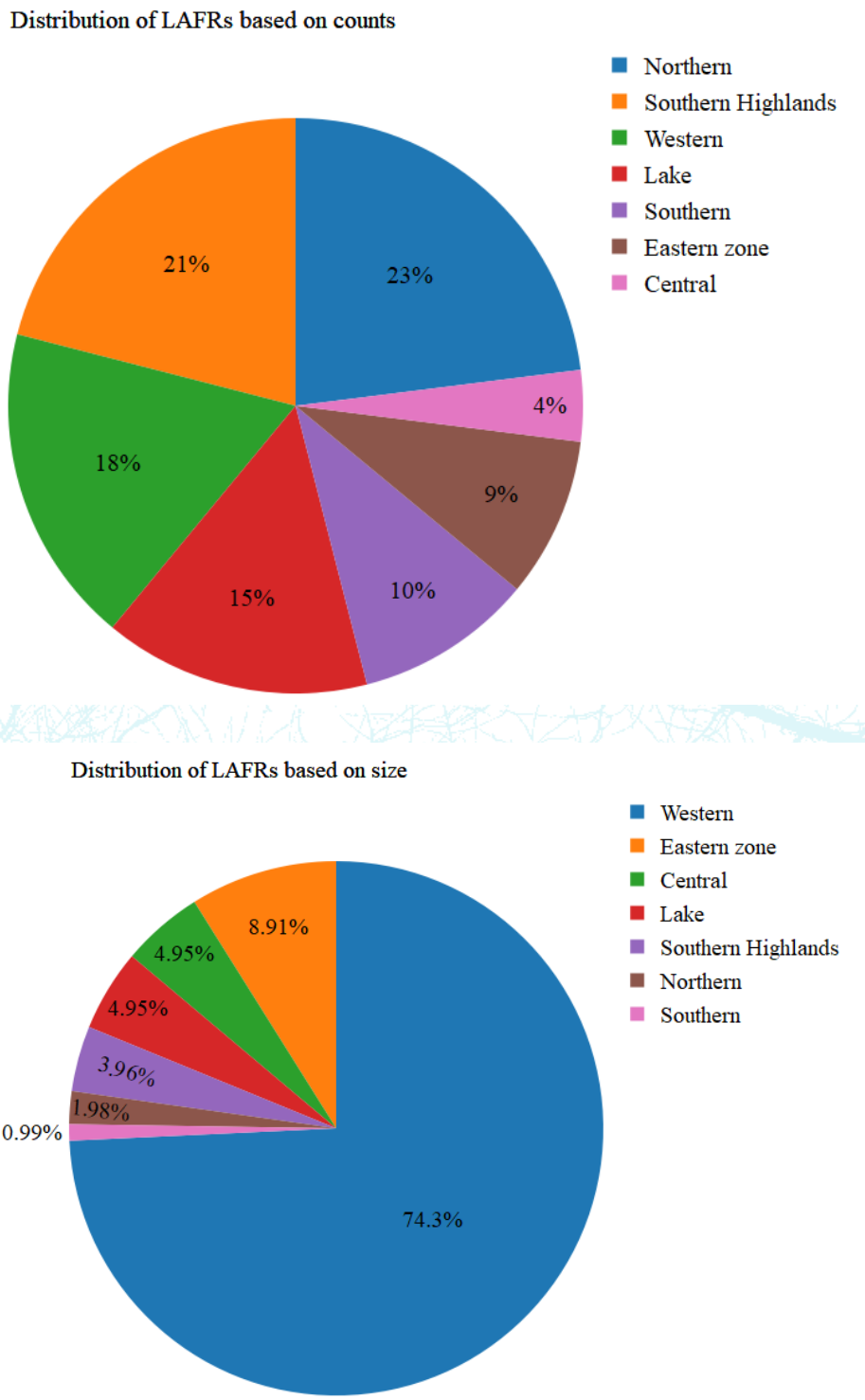
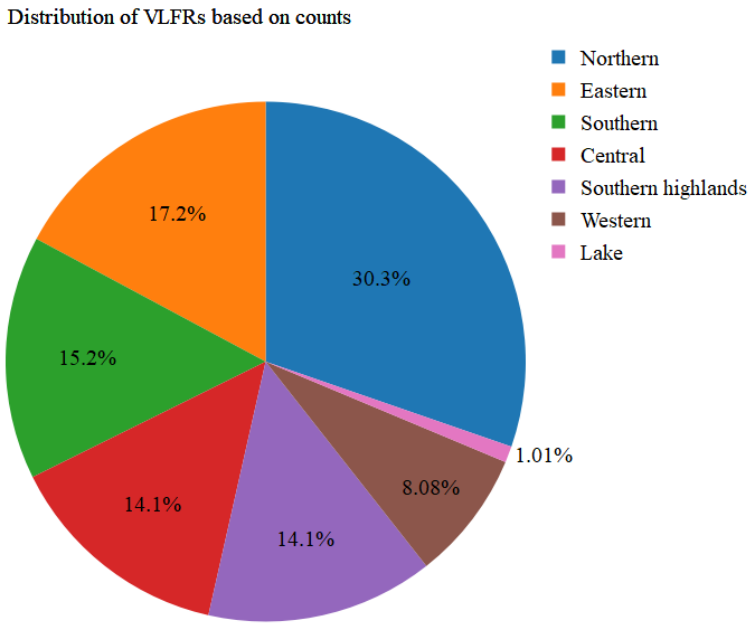


Figure 8: Distribution of LAFRs across zones

Moreover, findings show that each zone (Northern, Eastern and Southern highlands) has more than 15% of all recorded VLFRs based on counts and size. Very few of all VLFRs are found in Lake zone (Figure 9). When size is considered; Southern and Central zone have a higher proportion of all VLFRs with the least proportion of all VLFRs in Lake zone.



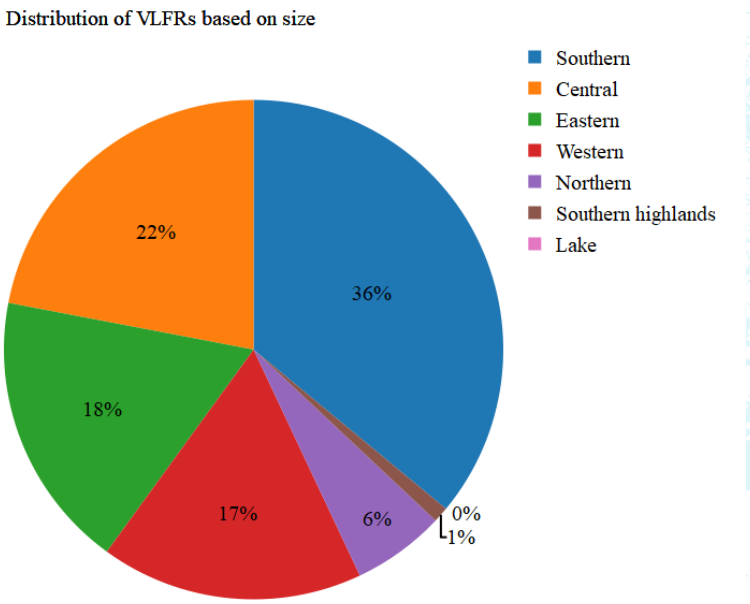


Figure 9: Distribution of VLFRs across zones

Distribution of specific forest categories across zones is presented in Table 7. No BRs were recorded in all zones and for all forest ownership types except for CG in Central and Northern zones. Natural FRs was recorded in all zones and for all ownership types. CG Nature FRs were recorded in all zones with atleast one Nature FR per zone. Similarly, all mangrove forests are owned and managed by CG and were recorded in Northern, Eastern and Southern zones. National plantation FRs was observed in all zones except Central zone. Likewise, a small proportion of Local Authority plantation FRs was documented in Lake and Northern zones.

Table 7 : Distribution of FRs across zones

Zone	Category	NFRs/BRs		LAFRs		VLFRs	
		Count	Size (ha)	Counts	Size (ha)	Counts	Size (ha)
Central	BR	6	18,032	0	0.0	0	0.0
	Natural FR	19	107,249	6	83,013.2	83	292,817.7
	Nature FR	1	5,871	0	0.0	0	0.0
	Sub-total	*26*	*131,152*	*6*	*83,013.2*	*83*	*292,817.7*
Eastern	Mangrove FR	7	69,157	0	0.0	0	0.0
	Natural FR	63	362,464	14	157,376.5	100	247,811.2
	Nature FR	3	53,163	0	0.0	0	0.0
	Plantation FR	4	64,032	0	0.0	0	0.0
	Sub-total	*77*	*548,815*	*14*	*157,376.5*	*100*	*247,811.2*
Lake	Natural FR	21	257,681	22	87,240.0	8	1,358.6
	Nature FR	1	25,717	0	0.0	0	0.0
	Plantation FR	4	187,821	2	49.5	0	0.0
	Sub-total	*26*	*471,219*	*24*	*87,289.5*	*8*	*1,358.6*
Northern	BR	6	4,246	0	0.0	0	0.0
	Mangrove FR	4	11,159	0	0.0	0	0.0
	Natural FR	78	151,544	34	33,188.8	177	85,761.6
	Nature FR	4	37,971	0	0.0	0	0.0
	Plantation FR	6	41,912	3	1,315.5	0	0.0
	Sub-total	*98*	*246,832*	*37*	*34,504.3*	*177*	*85,761.6*

Zone	Category	NFRs/BRs		LAFRs		VLFRs	
		Count	Size (ha)	Counts	Size (ha)	Counts	Size (ha)
Southern	Mangrove FR	3	50,226	0	0.0	0	0.0
	Natural FR	51	1,173,241	16	19,240.9	88	490,042.1
	Nature FR	3	136,892	0	0.0	0	0.0
	Plantation FR	2	6,884	0	0.0	0	0.0
	Sub-total	*59*	*1,367,243*	*16*	*19,240.9*	*88*	*490,042.1*
Southern Highlands	BR	1	21,792	0	0.0	0	0.0
	Natural FR	62	325,204	33	63,144.8	83	11,269.1
	Nature FR	4	233,465	0	0.0	0	0.0
	Plantation FR	8	197,201	0	0.0	0	0.0
	Sub-total	*75*	*777,662*	*33*	*63,144.8*	*83*	*11,269.1*
Western	Natural FR	34	5,214,346	28	1,355,889.1	50	227,699.5
	Nature FR	1	388,512	0	0.0	0	0.0
	Plantation FR	1	426	0	0.0	0	0.0
	Sub-total	*36*	*5,603,285*	*28*	*1,355,889.1*	*50*	*227,699.5*
Total		*397*	*9,146,208*	*158*	*1,800,458.2*	*589*	*1,356,759.8*

Apart from the NFRs (*n=384; size = 9,102,138 ha*) and LAFRs (*n=158; size = 1,800,458 ha*) reported by DFMs and DFOs from all Districts in Mainland Tanzania and managed by TFS and DCs respectively, a total of 116 NFRs which is equivalent to 3,045,998 hectares and 70 LAFRs (*size = 295,502 ha*) were identified from existing literature (URT, 2010; Holmes, 1995). The unreported NFRs and LAFRs include the following:

- NFRs in "Tanzania Forest Establishment Order" but not reported by DFMs (*n = 59; size = 938,324 ha; see list in Appendix 18*),
- NFRs not reported but documented in Holmes (1995) (*n = 33; size = 238,899 ha; see list in Appendix 19*),
- NFRs (not managed by TFS) taken (overlapping reserved area boundaries) and managed by other authorities (*n = 21; size = 1,860,518 ha; see list in Appendix 20*),
- NFRs managed by other authorities on agreement terms (*n = 3; size = 8,258 ha; see list in Appendix 21*),
- LAFRs not reported but documented in Holmes (1995) (*n = 70; size = 295,502 ha; see list in Appendix 22*).

The study recommends an investigation on a total of 116 NFRs (i.e. 3,045,998 ha) and 70 LAFRs (i.e. 295,502 ha) identified from existing literature aimed to establish validity of this information, their where about and status; and subsequently make appropriate decisions on such FRs.

Analysis of statistics presented in Tables 4 and 5 suggest that, about 45% (i.e. 21,451,078 ha) of total forest cover is reserved and managed by CG (34.5%; 16,610,581 ha) (*i.e. NFRs,GRs, GCAs, NCA and NPs*), LGAs (LAFRs; 6.5%; 3,107,351 ha), VG (VLFRs;1.4%; 678,380 ha) and private entities (PFs; 2.2%; 1,054,767 ha) lands. Conservatively it was assumed that forest cover on VLFRs is 50% of total VLFR area (1,356,759 ha) and 30% of forest cover on private is managed. A conservative assumption of 30% as managed forest cover on private land was based on the understanding that, a limited proportion of households or companies own and manage woodlots/forests (i.e. private forests) and this is common in Southern highlands. Otherwise in most cases, forest cover on private land is a result of land left for fallow and therefore not managed. Further analysis shows that, 55% of total forest cover is unreserved/unmanaged.

Large proportion of unreserved forest cover falls on village land (44% of total forest cover or 80% of the entire unreserved forest cover) and the rest on general (6% of total forest) and private (5% of total forest cover) lands.

3.1.3 Ecological potential of forests under different ownership types

Distribution of tree total carbon storage (above- and below- ground carbon) and wood volume across vegetation types, land ownership and land use and management objective based on analysis using the 2015 NAFORMA is summarized in Table 8.

Table 8 : Summary of tree stocking attributes by vegetation types, land ownership type and land use/management objective

Item Vegetation type	*n*	Area (ha)	Mean total tree carbon (ton/ha)	Mean tree volume (m^3/ha)
Humid montane forest	*577*	953,866	77.5	222.2
Lowland forest	*695*	1,663,340	54.6	130.9
Mangrove forest	*94*	158,405	67.2	82.7
Plantation forest	*270*	543,025	24.8	61.7
Woodland	*12,961*	45,225,349	32.3	67.4
Woodland with scattered cropland	*832*	2,518,260	13.2	27.5
Bushland	*2,687*	7,473,798	12.5	25.5
Grassland	*2,790*	8,798,279	4.2	8.5
Cultivated land	*6,171*	17,713,778	4.4	9.1
Other land (open land, water)	*4,589*	3,281,294	5.4	13.2
Total/Overall	*31,666*	*88,329,396*	*21.6*	*45.9*
Land ownership type			0.0	
CG land	*7,673*	23,808,499	29.9	65.4
LGA land	*1,596*	4,853,053	32.4	70.5
Village land	*11,594*	31,458,963	24.3	50.5
General land	*1,064*	3,054,719	33.6	71.8
Private	*8,691*	24,703,074	6.8	14.
Unknown	*1,048*	455,992	11.8	23.4
Total/Overall	*31,666*	*88,334,300*	*21.6*	*45.9*
Land use/management objective			0.0	

Item Vegetation type	*n*	Area (ha)	Mean total tree carbon (ton/ha)	Mean tree volume (m^3/ha)
Production forest	*7,524*	19,629,469	33.4	70.1
Protection forest	*3,644*	9,457,668	38.3	85.3
Wildlife reserve (e.g. GR, NPs)	*5,978*	19,891,960	27.9	59.8
Grazing land	*3,047*	9,406,922	11.1	22.7
Agriculture	*9,202*	26,048,997	7.3	14.9
Others (Built up area, water)	*2,271*	3,899,284	10.3	22.3
Total/Overall	*31,666*	*88,334,300*	*21.6*	*45.9*

Note: *n* = Number of plots

Tree total carbon and wood volume varies among vegetation types, land ownership and land use and management objective. Humid montane, mangrove and lowland forests have high mean tree carbon storage and wood volume per hectre compared to woodlands. However, woodlands occupy about 94% of total forest cover. Therefore, when considering total carbon and volume, woodland is the most important vegetation type.

The mean tree carbon and wood volume per hectare are also high in general, LGA and CG lands (Table 8). According to the Land Act "general land" means all public land which is not reserved land or village land. Therefore, high tree carbon and wood volume in general land suggest that general land comprises of areas with ecological and economic potential. Village land has low mean tree carbon storage and wood volume per hectare compared to general, LGA and CG. However, about 44% of total forest cover is on village land. Therefore, when considering total carbon and volume, forests on village land are also ver important. On the other hand, tree carbon and wood volume are high on protection forest, production forest and wildlife reserves (i.e.GRs, GCAs, NCA and NPs) which are reserved lands.

Shannon Index is a combination of species richness (the count of species present) and species evenness (the relative abundance of each species). In other words, Shannon Index is a measure of rarity and commonness of species whereby high value means high species diversity and vice

versa. Table 9 summarises tree species diversity across vegetation types, ownership types and land use/management objective using the 2015 NAFORMA data.

Table 9 : Summary of tree species diversity by vegetation types, land ownership type and land use/management objective

Item	n	Area (ha)	Shannon tree species diversity		
Vegetation type			**Mean**	**Min.**	**Max.**
Humid montane forest	*577*	953,866	1.35	0.00	2.62
Lowland forest	*695*	1,663,340	1.48	0.00	2.67
Mangrove forest	*94*	158,405	0.35	0.00	1.23
Plantation forest	*270*	543,025	0.26	0.00	2.01
Woodland	*15,439*	45,225,349	1.21	0.00	2.96
Woodland with scattered cropland	*832*	2,518,260	0.81	0.00	2.57
Bushland	*2,687*	7,473,798	0.71	0.00	2.53
Grassland	*2,790*	8,798,279	0.44	0.00	2.33
Cultivated land	*6,171*	17,713,778	0.39	0.00	2.41
Other land (open land, water)	*2,111*	3,281,294	0.51	0.00	2.28
Total/Overall	***31,666***	***88,329,396***	***0.88***	***0.00***	***2.96***
Land ownership type					
CG land	*7,673*	23,808,499	1.13	0.00	2.85
LGA land	*1,596*	4,853,053	1.29	0.00	2.67
Village land	*11,594*	31,458,963	1.08	0.00	2.96
General land	*1,064*	3,054,719	1.24	0.00	2.65
Private	*8,691*	24,703,074	0.55	0.00	2.59
Unknown	*1,048*	455,992	0.72	0.00	2.25
Total/Overall	***31,666***	***88,334,300***	***0.88***	***0.00***	***2.96***
Land use/management objective					
Production forest	*7,524*	19,629,469	1.21	0.00	2.96
Protection forest	*3,644*	9,457,668	1.27	0.00	2.85
Wildlife reserve (e.g. GR, NPs)	*5,978*	19,891,960	1.10	0.00	2.67
Grazing land	*3,047*	9,406,922	0.69	0.00	2.53
Agriculture	*9,202*	26,048,997	0.60	0.00	2.56
Others	*2,271*	3,899,284	0.67	0.00	2.25
Total/Overall	*31,666*	*88,334,300*	*0.88*	*0.00*	*2.96*

Note: *n* = Number of plots

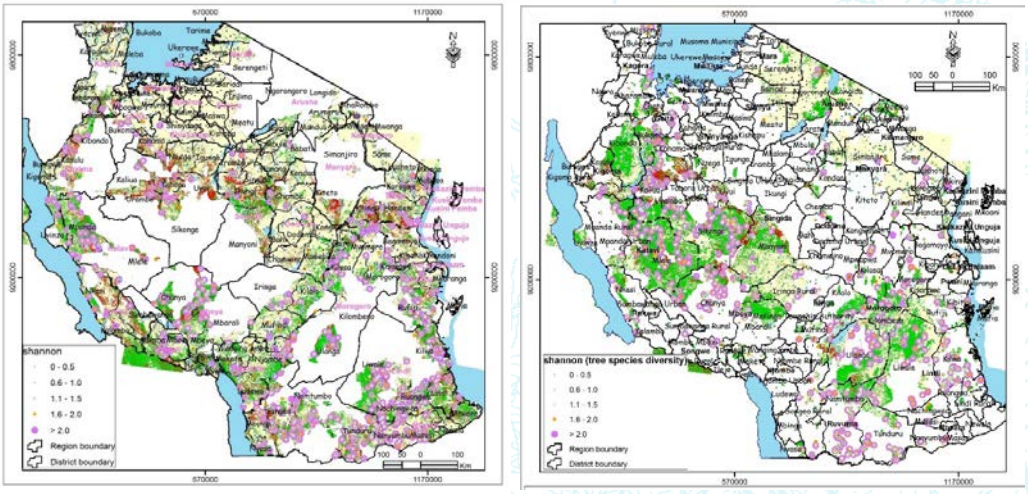


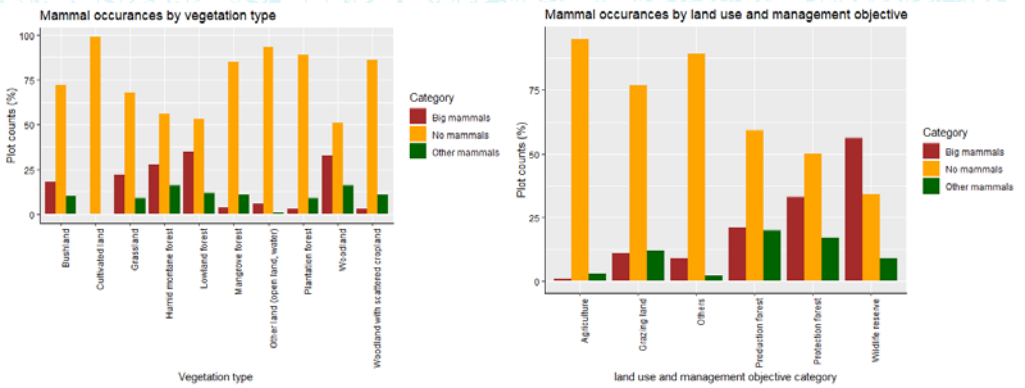
Figure 10: Tree species diversity within (top side) and outside reserved areas (bottom side)

Lowland, humid montane and woodlands have high tree species diversity. Equally, LGA, general, CG and village lands have high tree species diversity. In terms of land use/management objective, protection forests, production forests and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) have high tree species diversity.

The Forest Act (2002) define protection forests as an area of land covered by forest reserved or used principally for the purposes of protection of water sheds, soil conservation and the protection of wild plants. Figure 10 presents Shannon tree species diversity within (i.e. protection forests, production forests, and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) and outside reserved areas. Tree species diversity in reserved areas is significantly higher than outside reserved areas ($p < 0.05$).

Wild mammal occurrences provide important ecological information such as biodiversity potential of an area. Figure 11 summarises potential of wild mammal occurrences across vegetation, land ownership and land use types using the 2015 NAFORMA data. According to findings high occurrences of big wild mammals (e.g. lion, elephant) was recorded in lowland, woodlands, humid montane andgrass land. Likewise, high

occurrences of big wild mammals were recorded in CG, general and LGA lands. On the other hand, high occurrence of big wild mammals was recorded in wildlife reserves (i.e. GRs, GCAs, NCA and NPs), protection forests and production forests. This is in line with findings presented in Figure 12 which shows that there is high occurrence of big wild mammals within reserved areas than outside reserved areas.Occurrences of big wild mammals outside reserved areas could mean that such areas are important wildlife habitats, wildlife corridors or wildlife routes.



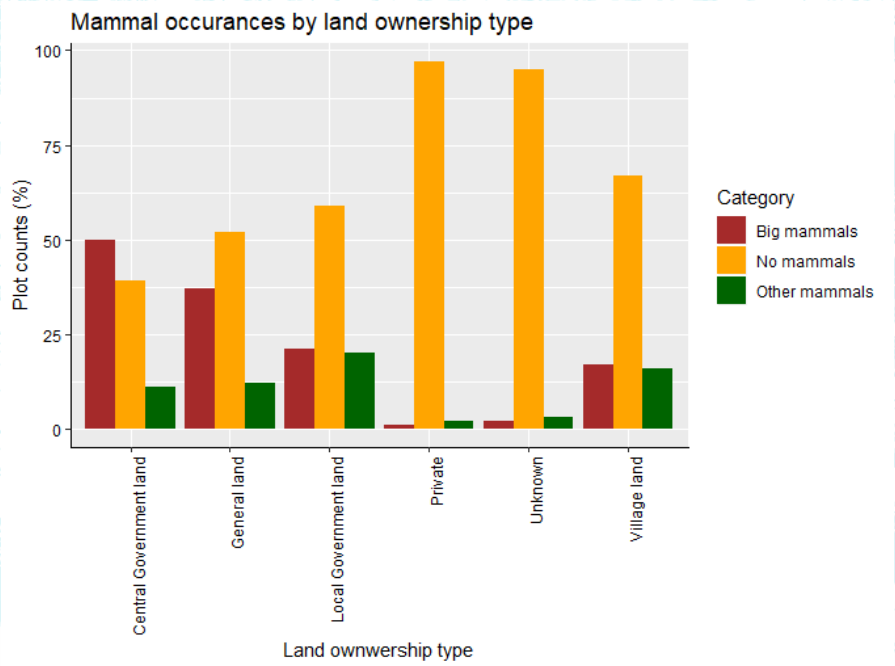


Figure 11: Potential of wild mammal occurrences across vegetation, land ownership, and land use types

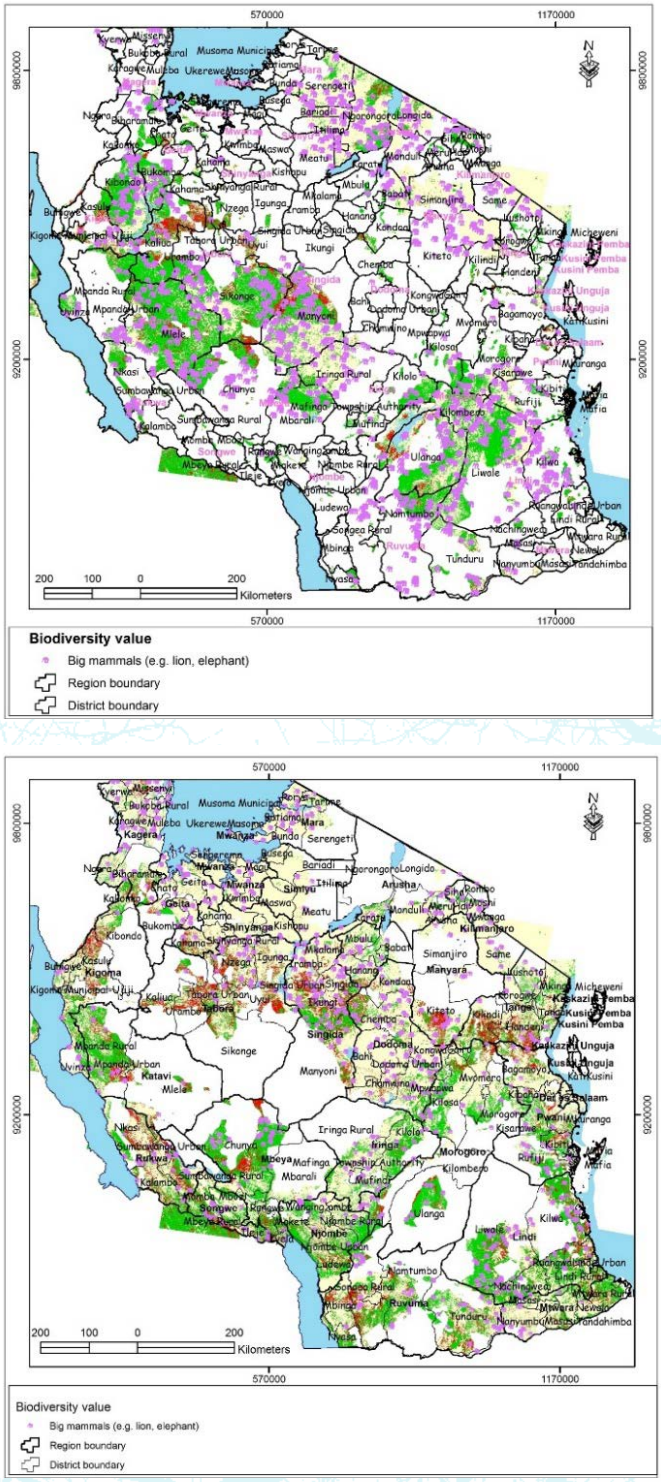
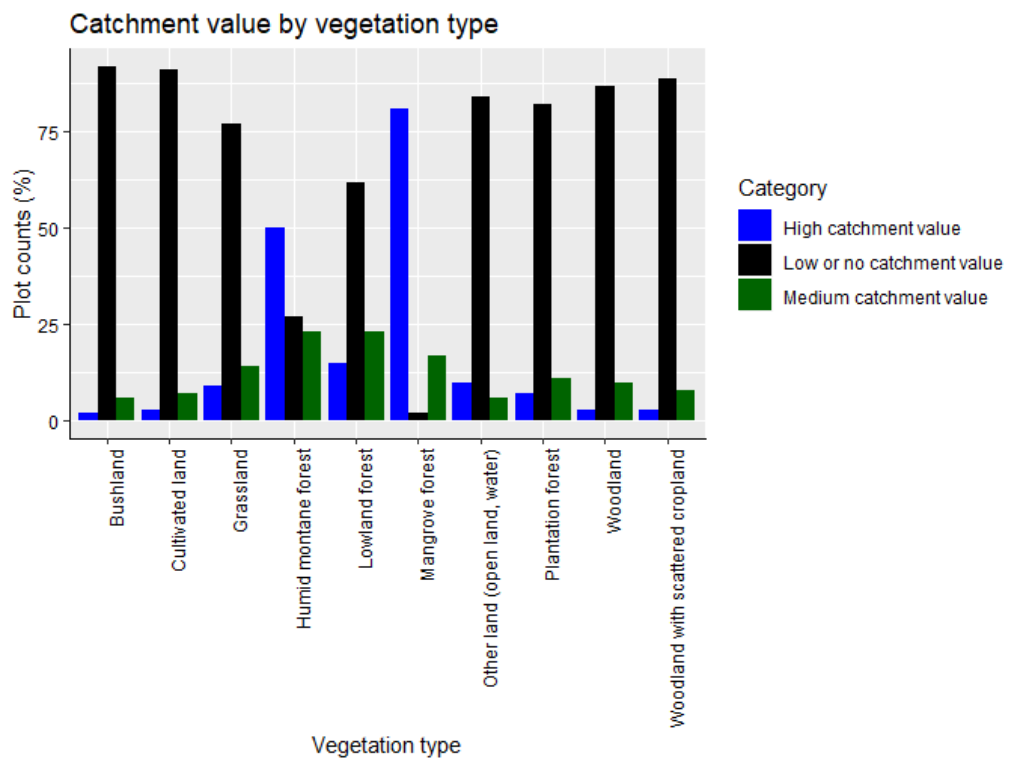


Figure 12: Wild mammal occurrences within (top side) and outside reserved areas (bottom side)

Water catchment is also an important ecological variable. Analysis of the 2015 NAFORMA data showed that mangrove, humid montane,and lowland forests have high water catchment value (Figure 13). Water catchment implies lakes, ponds, rivers, or a forest land which collects/ feeds water to lower land areas. On the other hand, protection forests, other lands and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) have high water catchment value among land use/management objective types. Figure 14 shows water catchment value within and outside reserved areas. Generally, results imply that both reserved and unreserved areas are important for water catchment but protection forests areoutstandingly important water catchment.



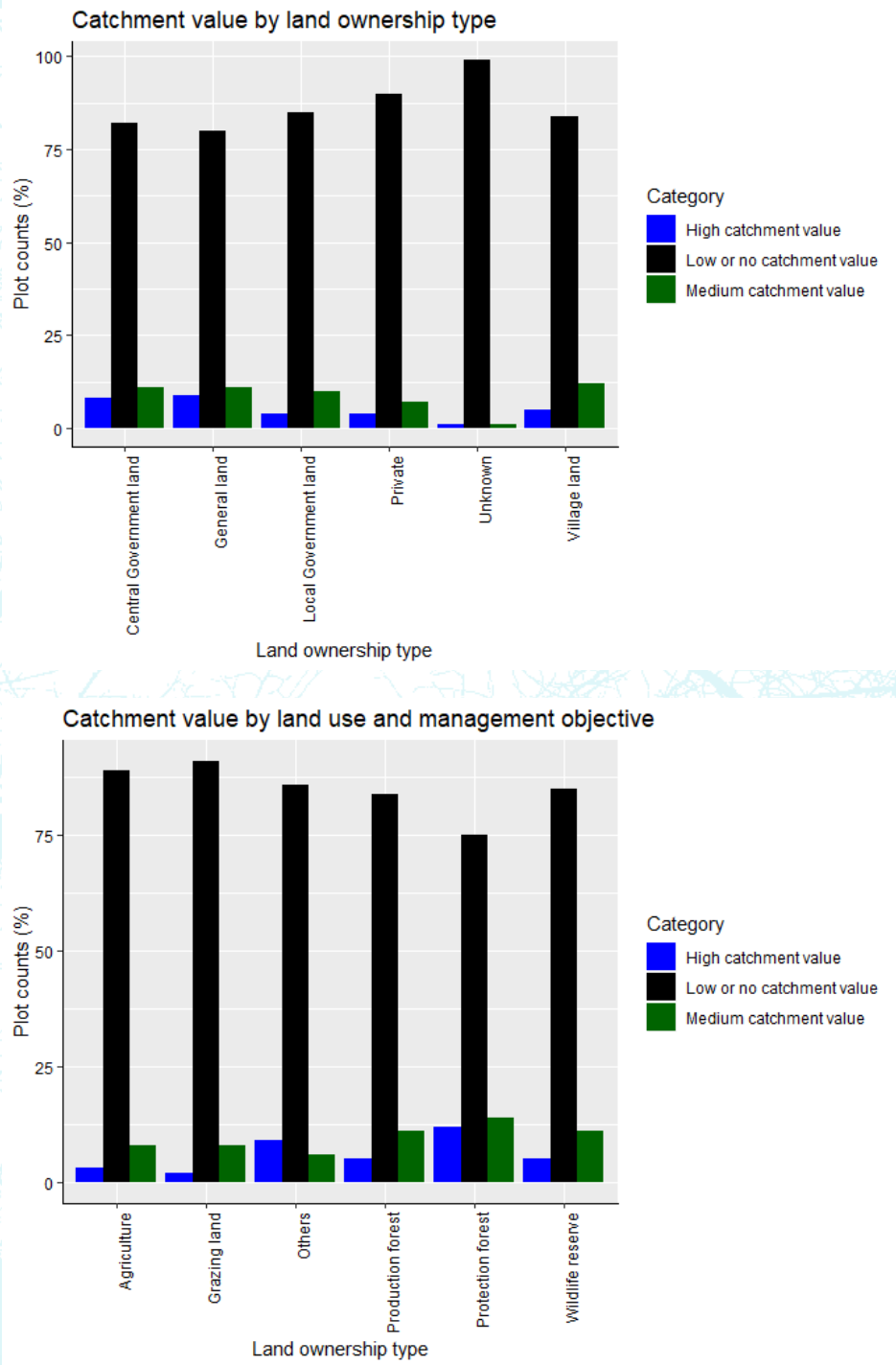


Figure 13: Catchment potential (value) across vegetation, land ownership and land use types

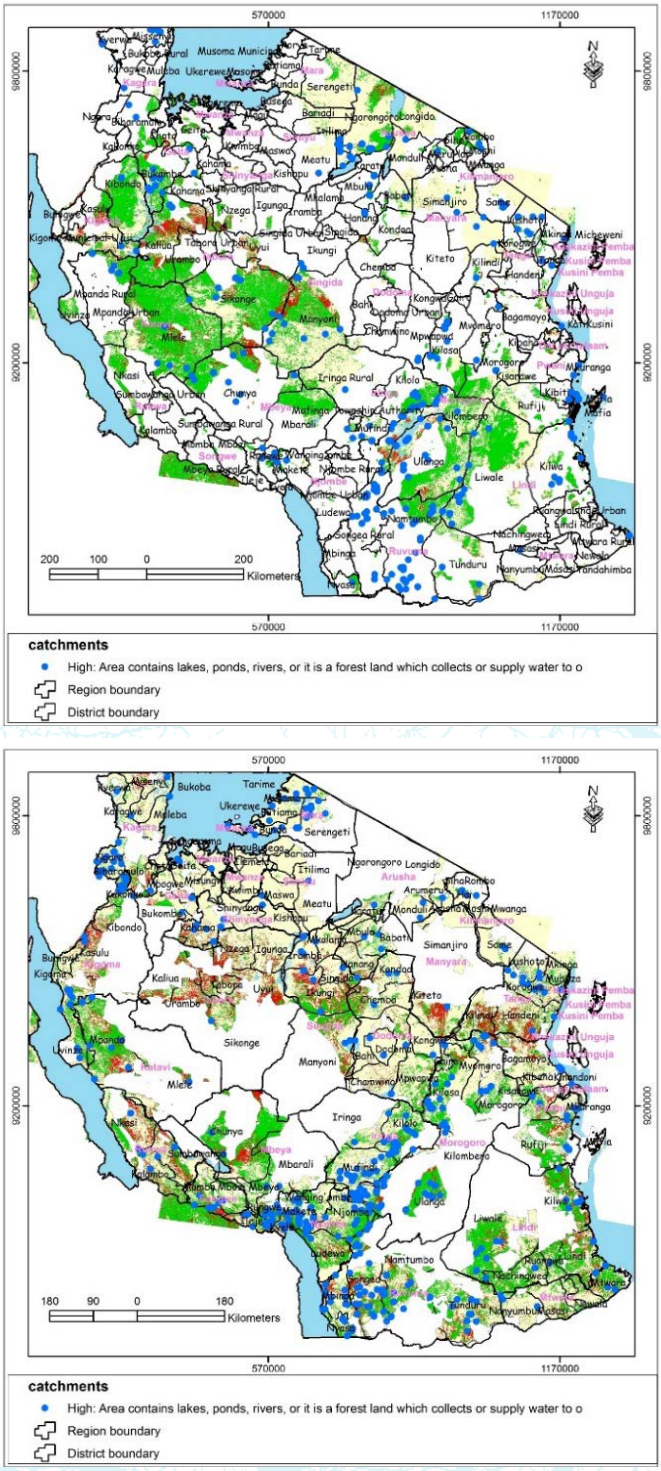
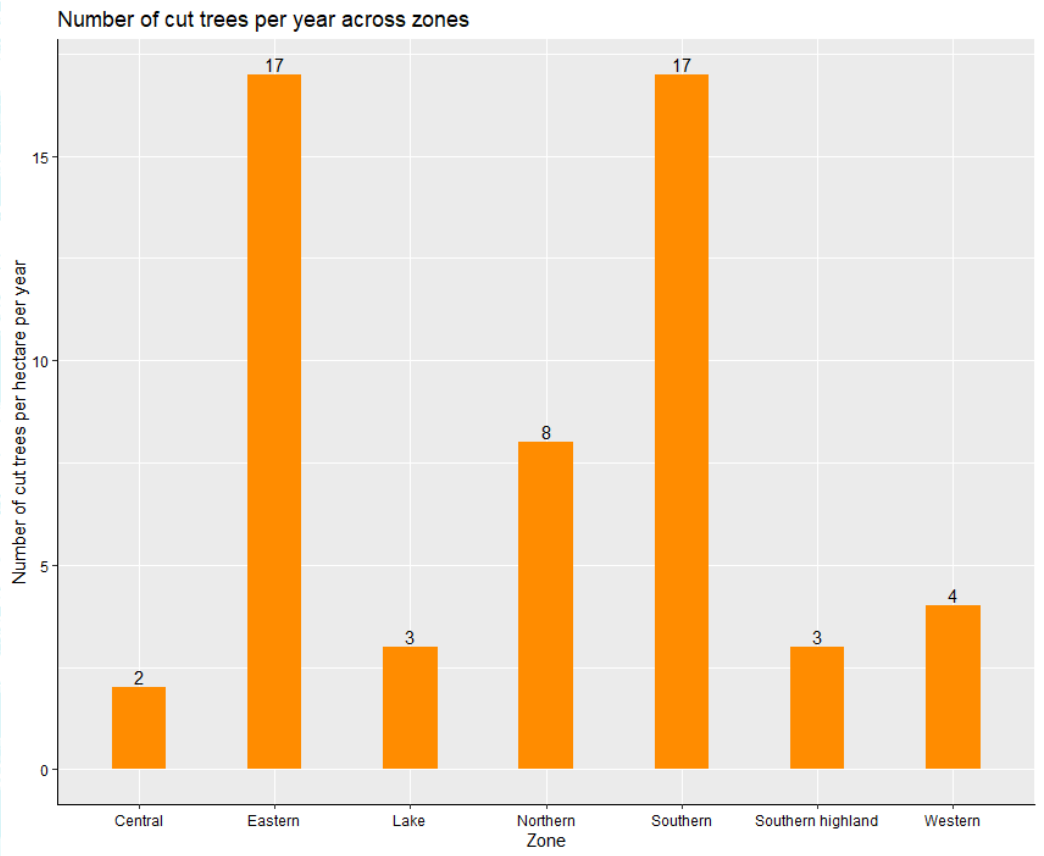


Figure 14: Catchment potential within (top side) and outside reserved areas (bottom side)

3.1.4 Forest degradation and drivers of forest degradation under different ownership types

3.1.4.1 Forest degradation

As described in the methods Sub-section 2.4.2, forest degradation is presented in terms of counts of cut trees per hectare and basal area of cut trees per hectare. Both counts and basal area per hectare are standard forest stocking parameter; however, in addition to counts, basal area accounts for tree size.On average annual counts (counts/ha/year) and basal area (m^2/ha/year) of cut trees is 8 and 0.17 respectively. Counts of cut trees and basal area vary across zones, vegetation types, land ownership types, and land use/management objective types. Counts of cut trees are high in Eastern and Southern zones (Figure 15).



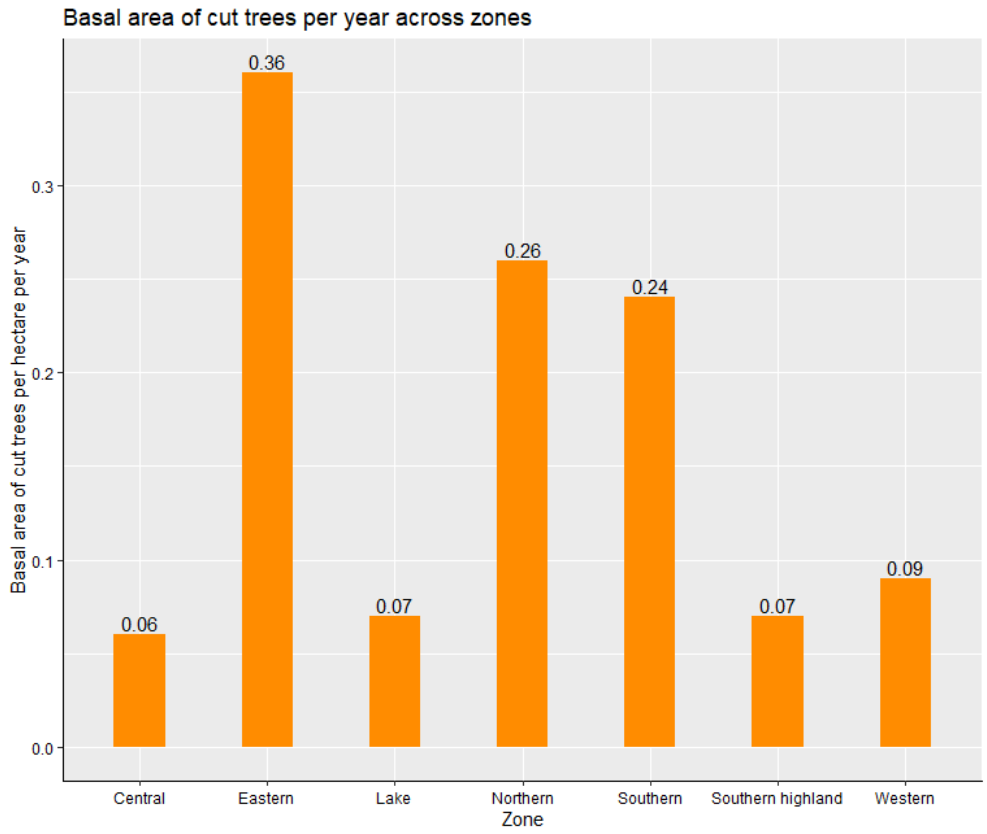


Figure 15: Count of cut trees (top) and basal area (bottom) across zones

On the other hand, basal area of the cut trees is high in Eastern, Northern and Southern zones. Across vegetation, counts and basal area of cut trees are high in mangrove forest and cultivated land (Figure 16). Equally, both counts and basal area of cut trees are high in private and village lands across land ownership types (Figure 17), while the same variables are high in agriculture and protective forests across land use/management objective types (Figure 18). Although relatively low, tree cutting occurs in wildlife reserves (i.e. GRs, GCAs, NCA and NPs) as well.

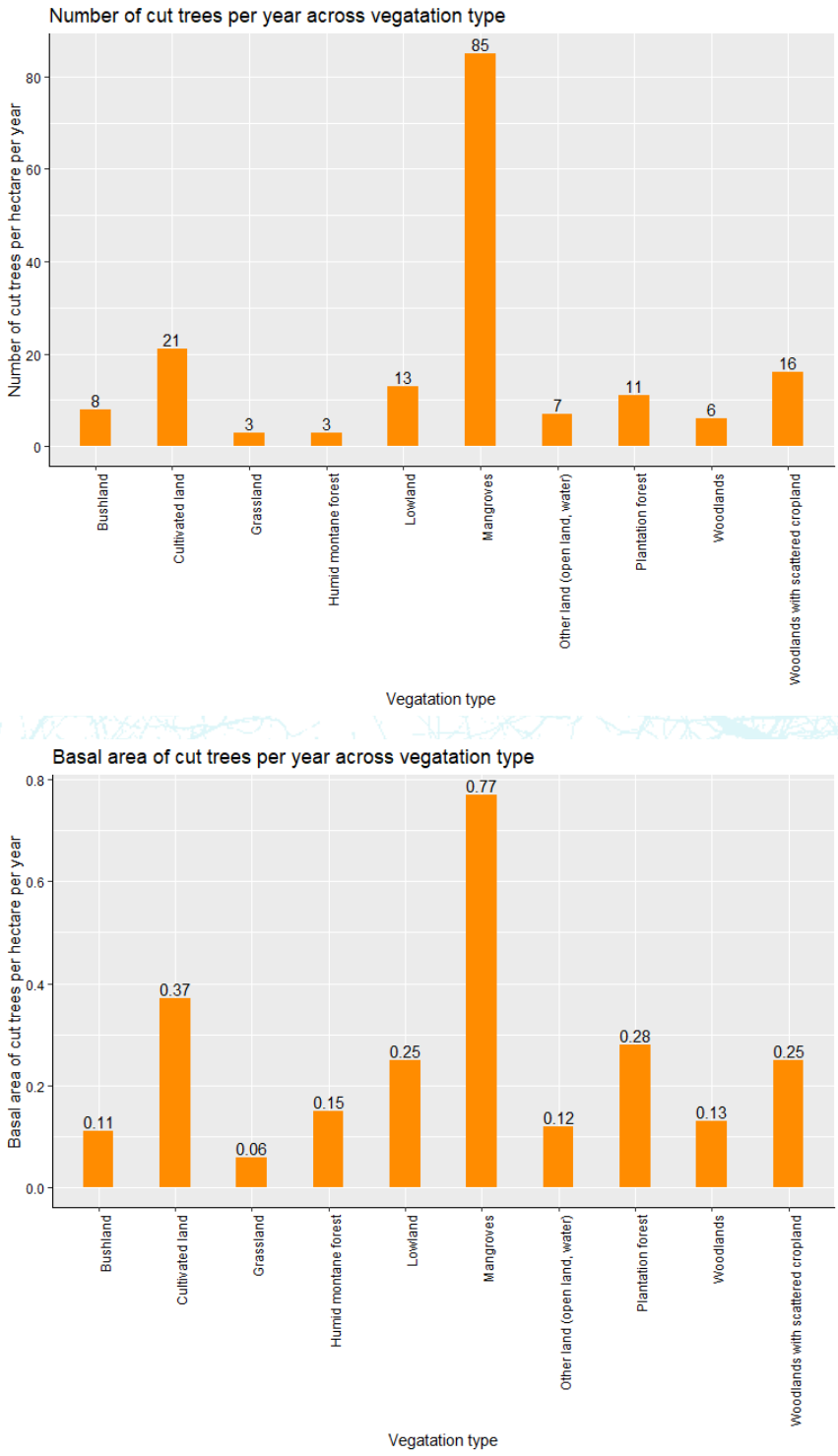
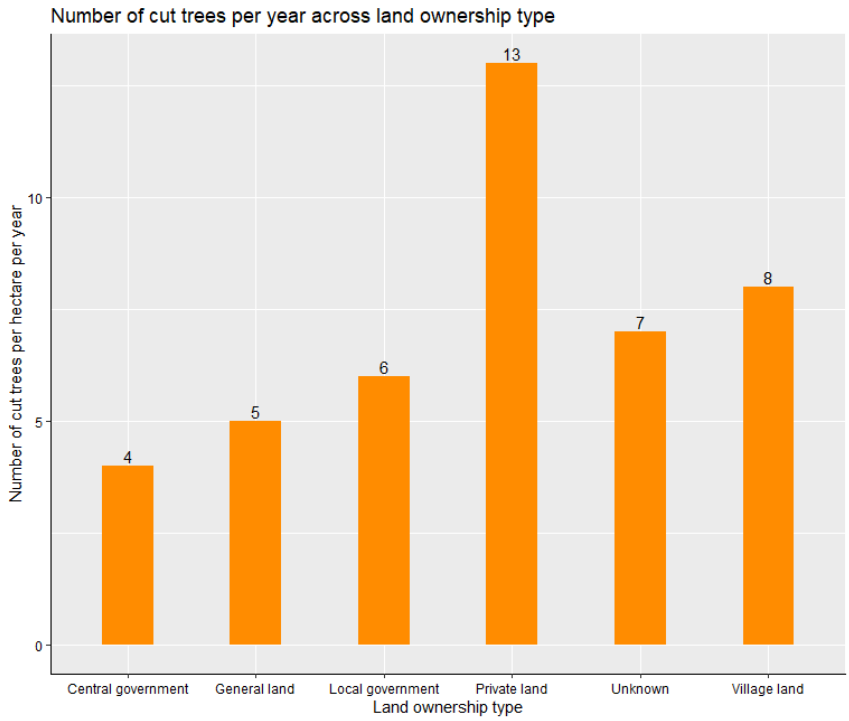


Figure 16: Count of cut trees (top) and basal area (bottom) across vegetation types



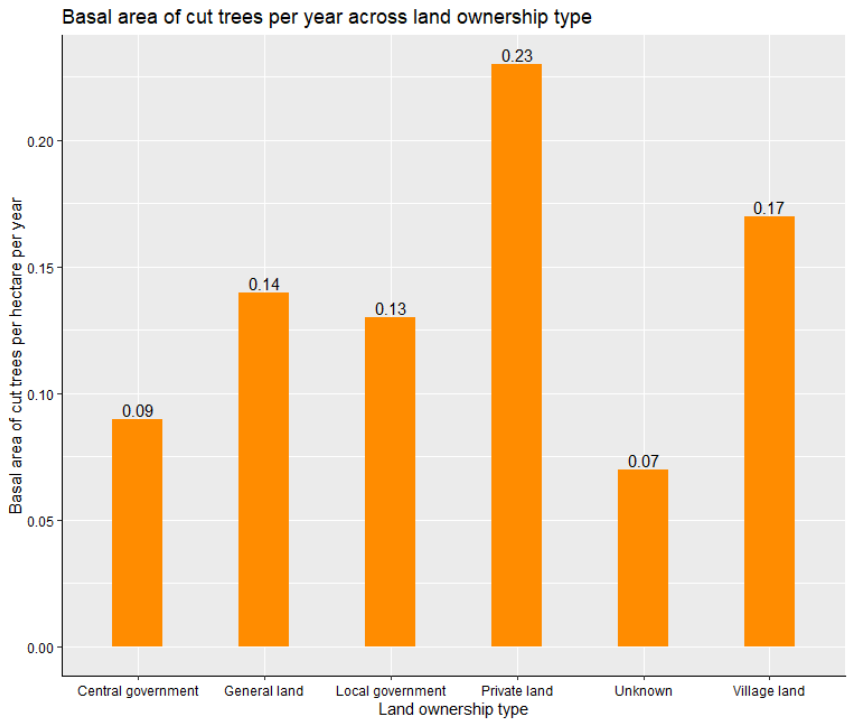
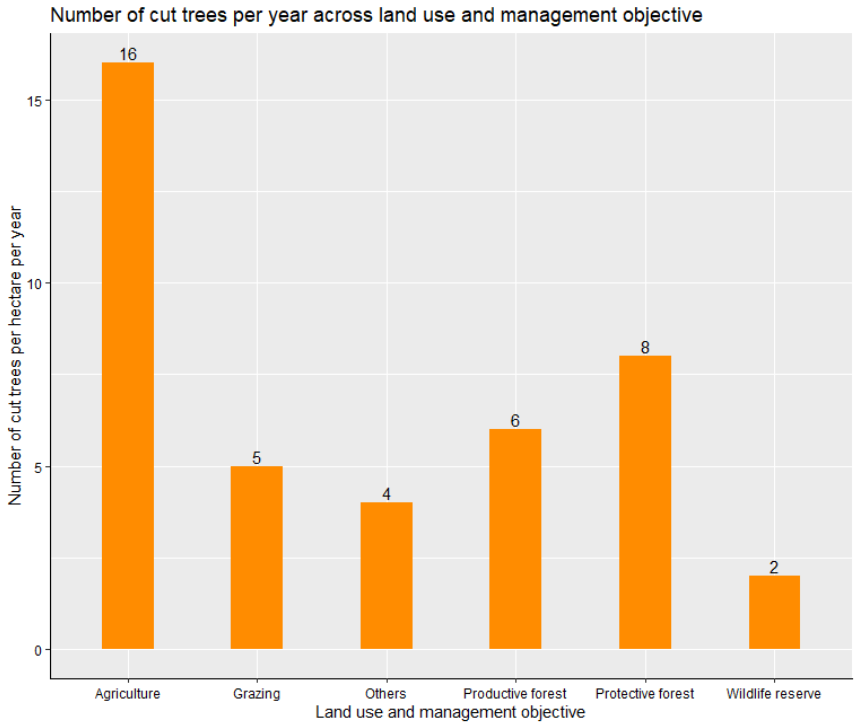


Figure 17: Count of cut trees (top) and basal area (bottom) across land ownership types



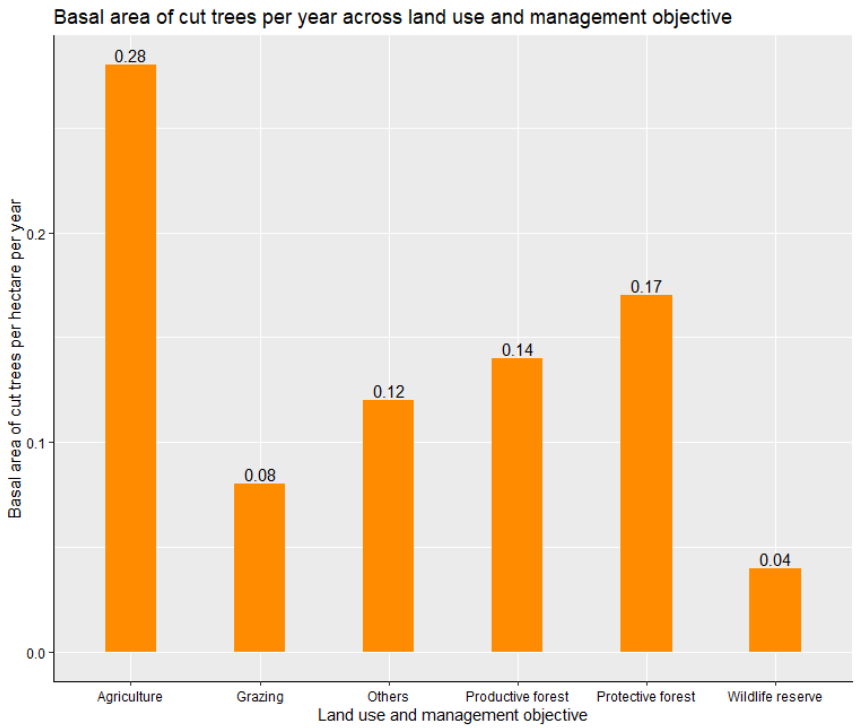


Figure 18: Count of cut trees (top) and basal area (bottom) across land use types and management objectives

3.1.4.2 Drivers of forest degradation

Drivers for forest degradation refer to reasons for cutting trees and are weighted by counts and basal area of cut trees. A total of 12 drivers for cutting trees were identified and, their distribution across zones, vegetation types, land ownership types,and land use/management objective types are summarized in Figures 19, 20,21and 22 respectively.

Generally, agriculture, timber, firewood,and pole extraction are the prominent drivers of degradation across zones, vegetation types, land ownership types and land use/management objective types and considering both counts and basal area of cut trees. Pole extraction is the most serious driver of degradation in mangrove forests across vegetation types (Figure 20). On the other hand, pole and timber extraction are the leading drivers of degradation in CG lands while charcoal and firewood are the leading factors for tree cutting in LGA lands (Figure 21). Timber extraction and charcoal making are the main reasons for tree cutting in general land. Analysis of drivers of degradation across land uses and management objectives revealed that wood extraction for poles, charcoal, and firewood are the main drivers of degradation in protective and productive forests while in natural mortality, wild animal damage and agriculture are the prominent drivers of degradation in wildlife reserves (i.e. GRs, GCAs, NCA and NPs).

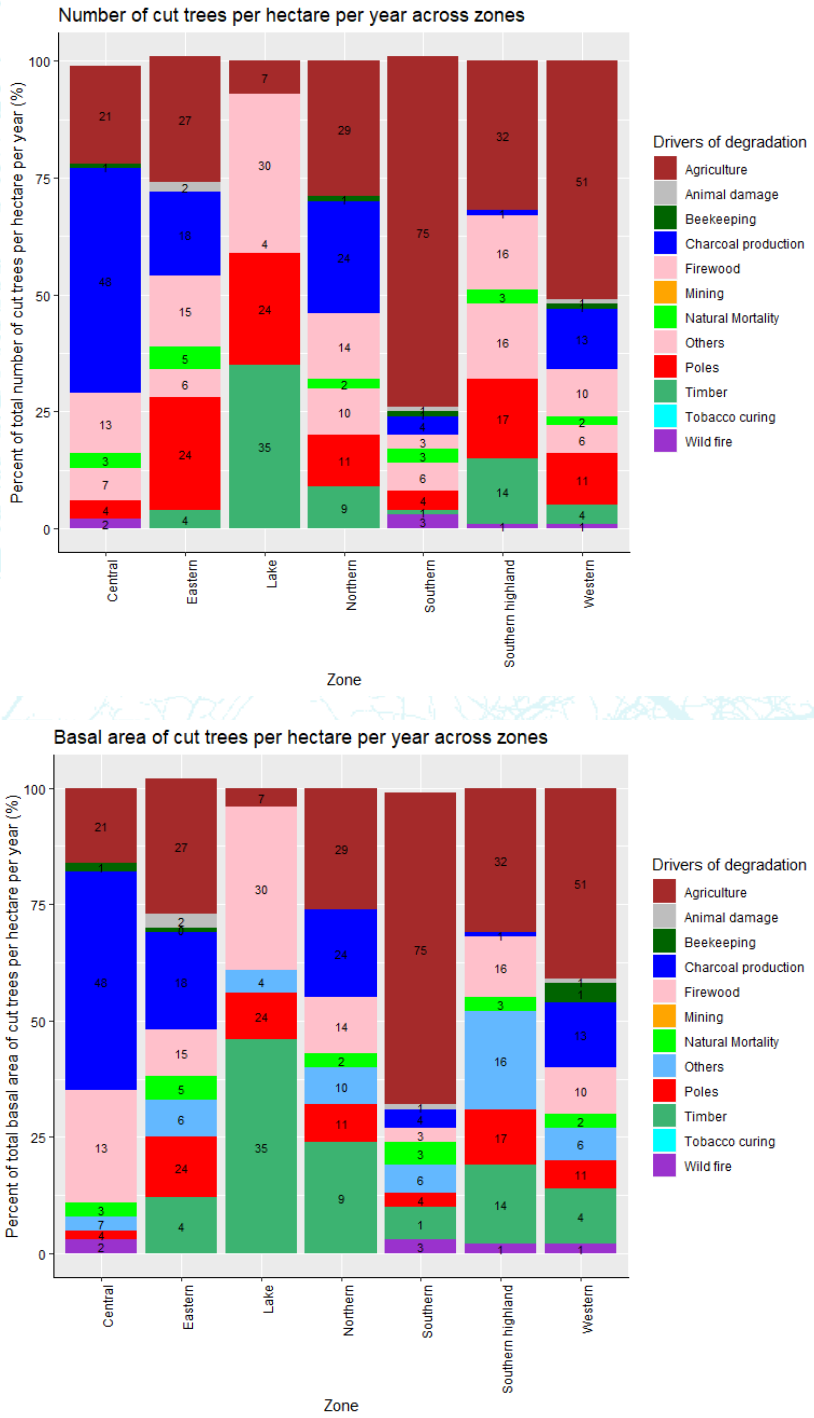


Figure 19: Drivers of degradation based on the count of cut trees (top) and basal area (bottom) across zones

According to the Forest Act, production FR is an area of land covered by forest reserved or used principally for purposes of sustainable production of timber and other forest produce while protection FR is an area of land covered by forest reserved or used principally for the purposes of protection of water sheds, soil conservation and wild plants, known as protection FR.

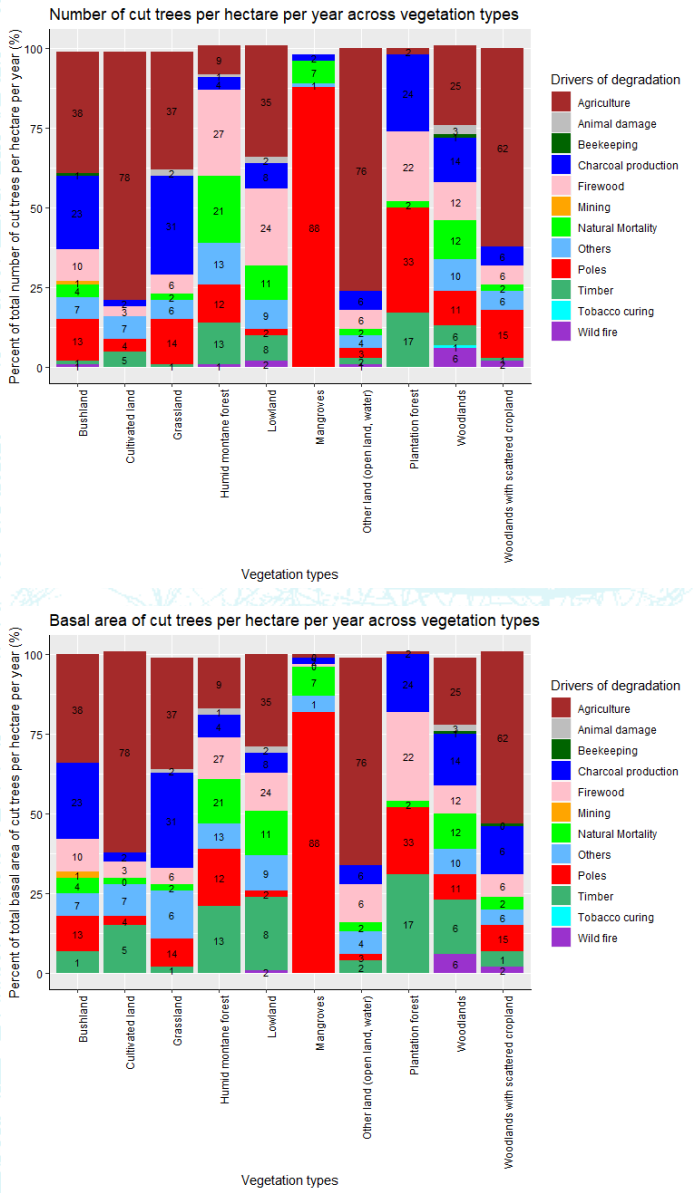


Figure 20 : Drivers of degradation based on count of cut trees (top) and basal area (bottom) across vegetation types

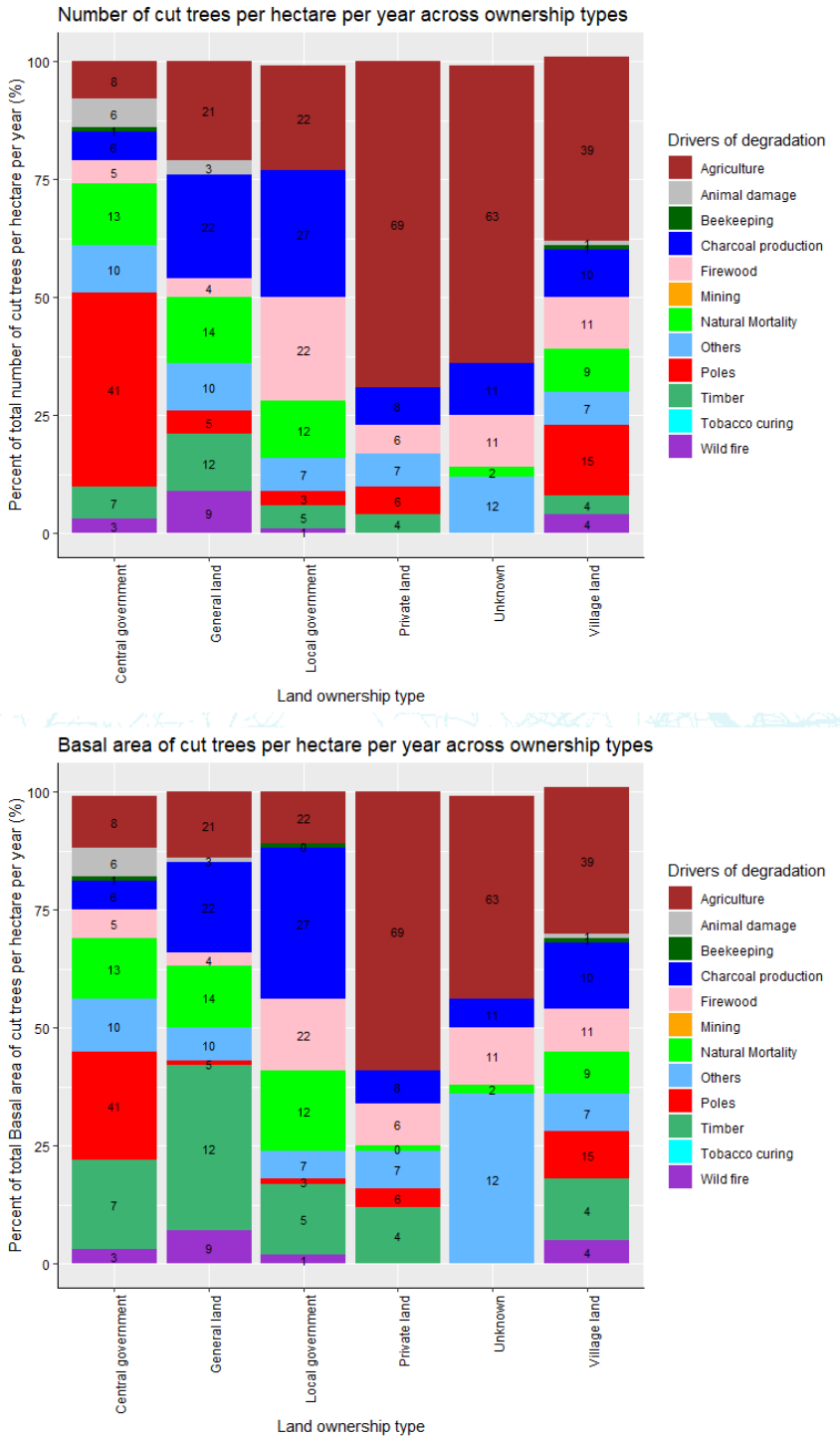
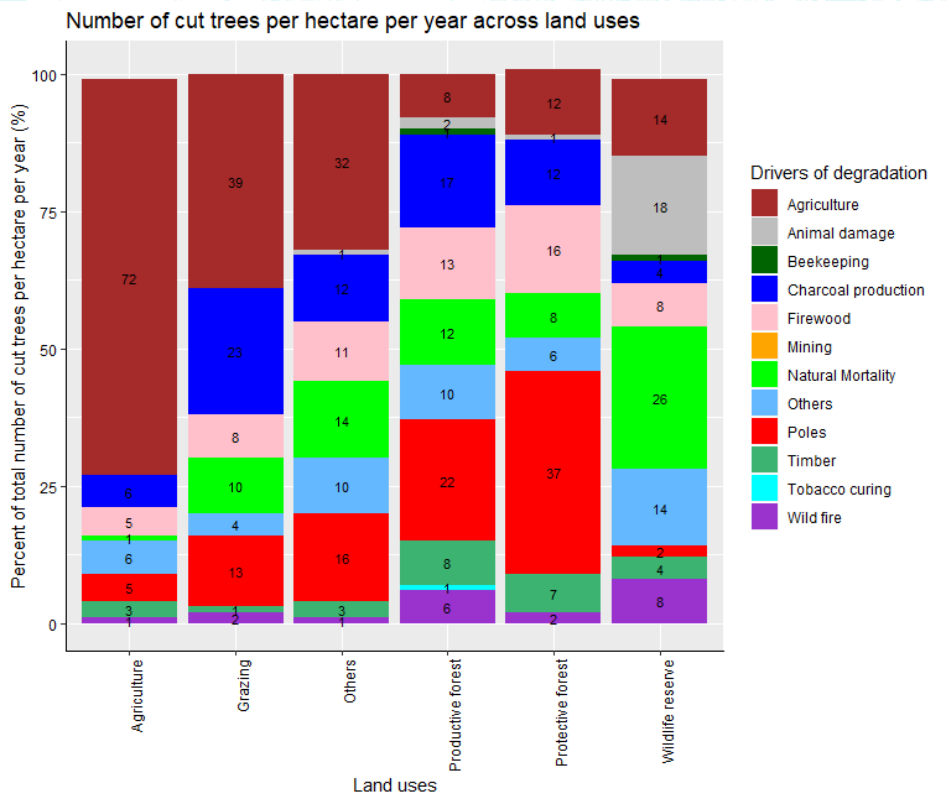


Figure 21: Drivers of degradation based on count of cut trees (top) and basal area (bottom) land ownership types

The Forest Act further stipulates that the principle of sustainability of given forest produce should be considered in the harvesting of such a forest produce. Equally, according to the Wildlife Act and related laws and regulations, no one is allowed to fell, cut, burn, injure or remove any standing tree, shrub, bush, sapling, seedling without written permission from an appropriate authority. Therefore, forest uses involving tree cutting in protective forest and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) that involve tree cutting for purposes such as charcoal making, construction pole or agriculture are unlawful and necessary actions to terminate this need to be taken urgently. Similarly, despite harvesting of forest produce being lawful in productive FRs, the principle of sustainability should be considered appropriately.



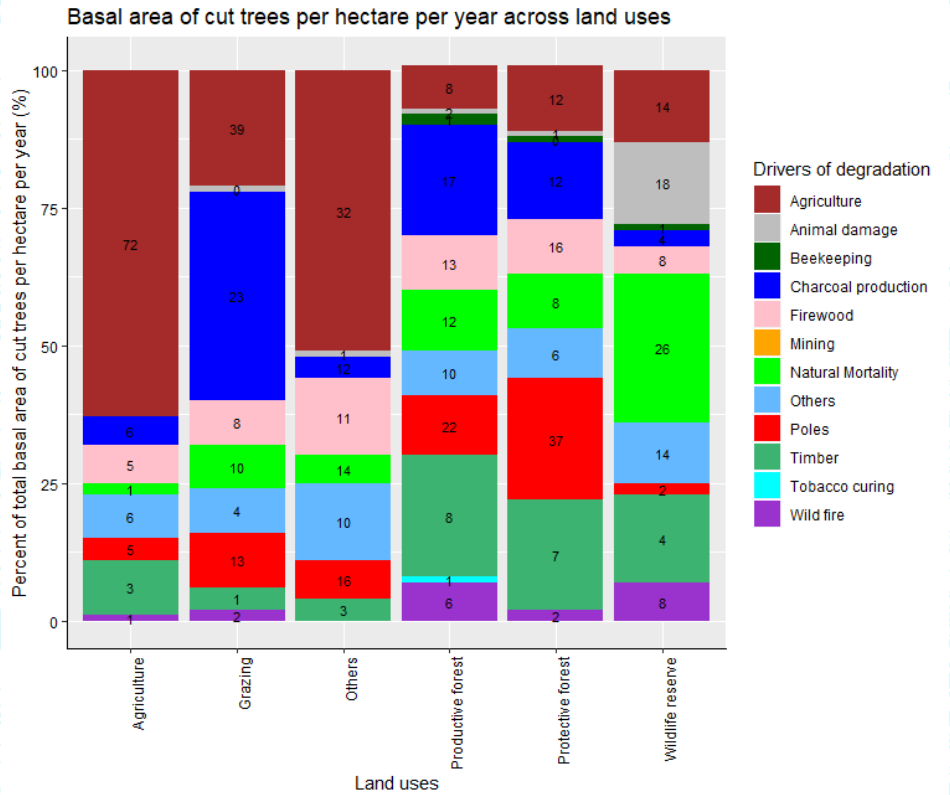


Figure 22: Drivers of degradation based on the count of cut trees (top) and basal area (bottom) land use types and management objectives

3.1.5 Deforestation and drivers of deforestation

3.1.5.1 Deforestation

Deforestation for Mainland Tanzania was assessed using land cover change analysis for the period between 2013 and 2018. Landsat data were used. Previously, a similar analysis for Mainland Tanzania covering the period 2002 to 2013 was carried out (URT, 2017). Both analyses focused on change from forest to non-forest using the National forest definition. Land cover change analysis revealed that about 582,000 hectares and 577,000 hectares changed from forest to non-forest for the period 2002-2013 and 2013-2018 respectively. Annual deforestation estimates reported in this study (2013-2018) is similar to the one reported

previously by URT (2017) but different from annual deforestation of 372,000 ha/year reported by MNRT (2015). Generally, this study and URT (2017) applied similar methods and same forest definition while MNRT (2015) applied different methods and different forest definition. The forest definitions used by MNRT (2015) considered a minimum tree height of 5 m while this study and URT (2017) considered a minimum tree height of 3 m.

The spatial distribution of deforestation (*i.e. red color*) for the two periods is presented in Figure 23. Figure 24 further shows the distribution of deforestation across zones. Southern and Western zones contribute about 35% and 30% of total annual deforestation respectively for the period 2013-2018. Previously (2002-2013), about 35% of total annual deforestation was attributed to Western zone and 16% to Southern zone.

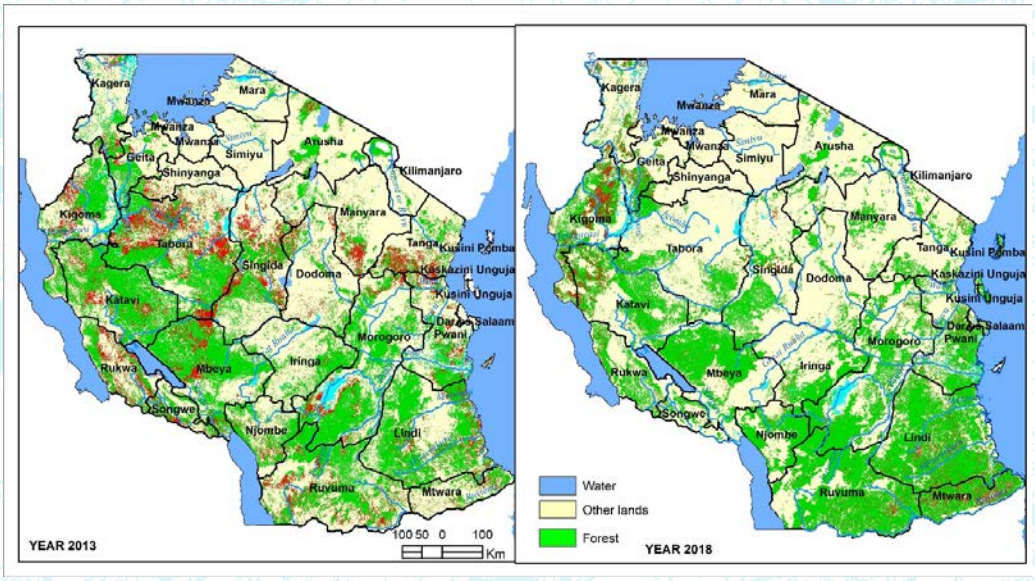


Figure 23 : Land cover change map for the periods 2002-2013 (left) and 2013-2018 (right) for Mainland Tanzania

An increase in deforestation was observed in Southern, Lake, and Eastern zones while a decrease in deforestation was observed in Central, Southern highlands, Northern and Western zones.

Analysis revealed that deforestation occurs both within reserved areas and outside reserved areas. About 26% (2002-2013) and 34% (2013-2018) of total deforestation occur in reserved areas (i.e. both forest and wildlife reserved areas). Table 10 summarises statistics and distribution of deforestation in reserved areas. Further findings on the distribution of deforestation across zones for reported NFRs are are presented in Table 11 and Table 12 for unreported NFRs. Likewise, Zonal level statistics on deforestation for LAFRs are summarised in Table 13. Statistics on deforestation in forest reserved areas do not include plantation FRs because clear-felling is part of forest management activities in plantations.

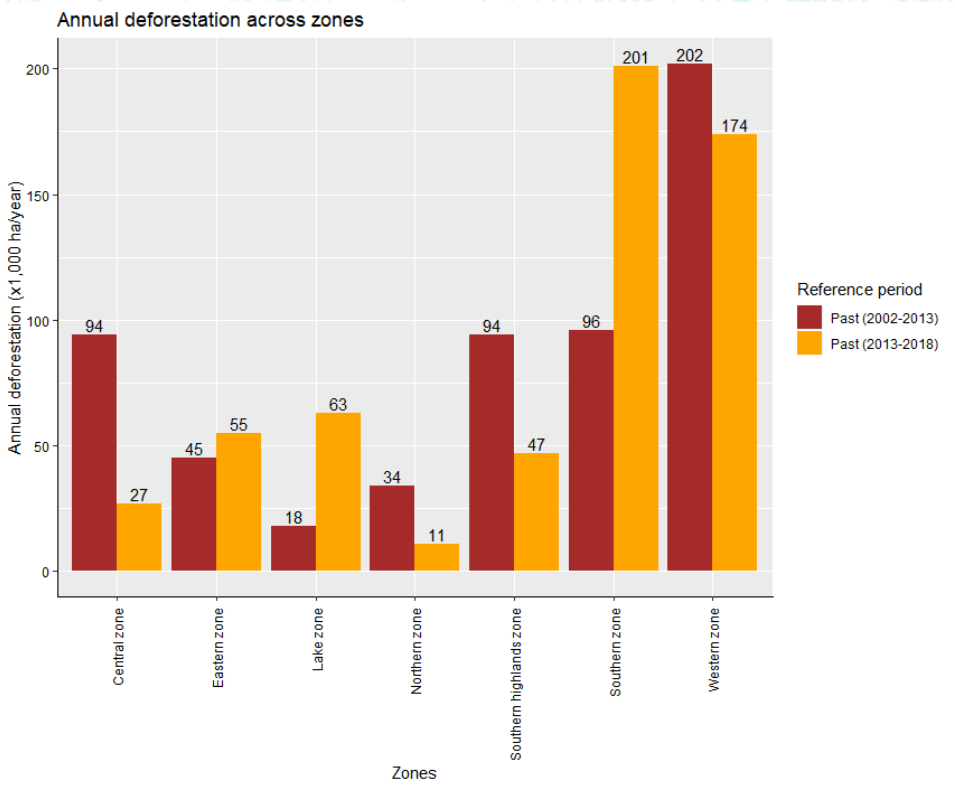


Figure 24: Annual deforestation across zones in Mainland Tanzania

Table 10: Summary of statistics on deforestation in reserved areas

Forest reserved areas		Counts*	Size (ha)*	Annual deforestation (ha/year)	
				2002-2013	2013-2018
- NFRs	Reported	384 (241)	9,102,138 (6,434,514)	49,048	47,871
	Unreported	116 (27)	3,045,998 (593,715)	1,156	4,406
- LAFRs		158 (70)	1,800,458 (1,166,900)	16,500	6,114
- VLFRs		589 (0)	N/a	-	-
*Total***		*658 (338)*	*13,948,594 (8,195,129)*	*66,704*	*58,391*
Wildlife reserved areas					
- NPs		19 (16)	6,244,088 (5,719,088)	3,711	6,339
- GRs		23 (17)	11,222,890 (9,449,090)	27,941	90,824
- GCAs		42 (17)	6,374,902 (4,928,400)	37,868	15,445
- WMAs		22 (22)	3,062,269 (3,062,269)	15,951	22,843
Total			*26,904,149 (23,159,447)*	*85,471*	*135,450*

**Figures in brackets are counts/size of reserved areas included in the analysis of forest specific deforestation*
***Sum doesn't include VLFRs*
- N/a means not applicable
- Reported means data reported by DFMs
- Unreported means data not reported by DFMs were obtained from literature (i.e. TFS Establishment (2010) Order and Holmes (1995))

Table 11: Summary of statistics on deforestation for reported NFRs across zones

Zone	Number*	Size (ha)*	Annual deforestation (ha/year)	
			2002-2013	2013-2018
- Central	20 (18)	113,120 (111,136)	105	642
- Eastern	77 (60)	548,815 (402,514)	2,095	1,564
- Lake	26 (14)	471,219 (217,811)	885	6,224
- Northern	92 (62)	242,586 (149,893)	959	123
- Southern	59 (33)	1,367,243 (859,006)	4,083	11,789
-Southern highlands	74 (30)	755,870 (345,058)	1,182	452
- Western	36 (25)	5,603,285 (4,349,096)	39,740	27,077
Total	*384 (242)*	*9,102,138 (6,434,514)*	*49,048*	*47,871*

**Figures in brackets are counts/size of reserved areas included in the analysis of forest specific deforestation*

Table 12: Summary of statistics on deforestation for unreported NFRs across zones

Zone	Counts*	Size (ha)*	Annual deforestation (ha/year)	
			2002 - 2013	2013 - 2018
- Central	1	113,120(34,966.1)	200	93
- Eastern	6	548,815(102,737.4)	105	176
- Lake	2	471,219(31,284.0)	193	831
- Northern	5	242,586(9,582.3)	63	24
- Southern	2	1,367,243(209,630.5)	386	1,822
-Southern highlands	7	755,870 (202,976.5)	205	1,460
- Western	5	5,603,285(2,538.2)	5	0
Total	**27**	**9,102,138(593,715.0)**	**1,156**	**4,406**

**Figures in brackets are counts/size of reserved areas included in the analysis of forest specific deforestation*

Table 13: Summary of statistics on deforestation in LAFRs across zones

Zone	Counts*	Size (ha)*	Annual deforestation (ha/year)	
			2002-2013	2013-2018
- Central	6 (4)	83,013 (5,731)	26	152
- Eastern	14 (11)	157,377 (262,092)	661	890
- Lake	24 (12)	87,289 (61,775)	898	715
- Northern	37 (18)	34,504 (11,933)	55	34
- Southern	16 (5)	19,241 (3,826)	155	84
-Southern highlands	34 (4)	63,195 (1,753)	8	2
- Western	28 (16)	1,355,889 (819,790)	14,697	4,237
Total	**158 (70)**	**1,800,509 (1,166,900)**	**16,500**	**6,114**

**Figures in brackets are counts/size of reserved areas included in the analysis of forest specific deforestation*

Findings based on consultations with DFMs and DFOs on forest-specific general condition are summarised in Table 14. Respondents provided opinions on general forest condition based on pre-defined forest condition categories: (i) good forest condition, (ii) degraded forest, (iii) deforested and (iv) both degraded and deforested. Further analysis was carried

out to verify results on opinions of forest condition using forest-specific land cover change (i.e. change of forest cover) between 2013 and 2018. Generally, opinions by DFMs on forest condition were consistent with land cover change results while opinions by DFOs on forest condition gave mixed results.

Lists of FRs and their respective condition are presented in Appendices as follows:

- List of NFRs with good condition (Appendix 23),
- List of degraded NFRs (Appendix 24),
- List of degraded and partly deforested NFRs (Appendix 25),
- List of deforested NFRs (Appendix 26),
- List of LAFRs with good condition (Appendix 27),
- List of degraded LAFRs (Appendix 28),
- List of degraded and partly deforested LAFRs (Appendix 29),
- List of deforested LAFRs (Appendix 30),
- List of VLFRs with good condition (Appendix 31),
- List of degraded VLFRs (Appendix 32),
- List of degraded and partly deforested VLFRs (Appendix 33),
- List of deforested VLFRs (Appendix 34).

Table 14: Opinions on general forest condition of FRs and BRs under different ownership types

Ownership type/Forest condition	Size of FRs		Count of FRs	
NFRs	**Size (ha)**	**%**	**Counts**	**%**
- Deforested	800,321	9	42	11
- Degraded	3,499,693	38	143	36
- Degraded and partly deforested	1,361,219	15	40	10
- Good condition	3,507,405	38	171	43
Total	***9,168,637***	***100***	***396***	***100***
LAFRs				
- Deforested	322,669	18	36	23
- Degraded	405,869	23	80	50
- Degraded and deforested	250,600	14	6	4
- Good condition	821,371	46	37	23
Total	***1,800,458***	***100***	***158***	***100***

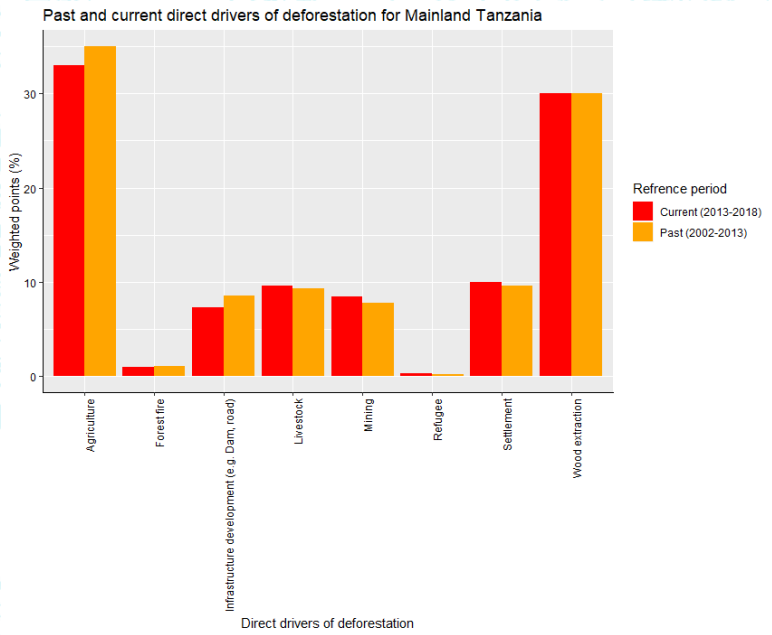
Ownership type/Forest condition	Size of FRs		Count of FRs	
NFRs	**Size (ha)**	**%**	**Counts**	**%**
VLFRs				
- Deforested	41	0	1	0
- Degraded	91,706	7	58	10
- Good condition and partly deforested	39,361	3	1	0
- Good condition	320,916	24	46	8
- No data	904,736	67	483	82
Total	***1,356,759***	***100***	***589***	***100***

3.1.5.2 Direct drivers of deforestation

Identification of direct drivers for deforestation involved interviews with targeted respondents which included DFMs, DFOs and District Agricultural Extension Officers from more than 100 Districts across Mainland Tanzania. Respondents were asked to identify drivers of deforestation based on pre-defined options yet were given room to give beyond the pre-defined options. Similarly, respondents were asked to assign a weight to identified direct drivers of deforestation. Weighting were stratified into five categories namely (i) very important (points = 5), (ii) important (points = 4), (iii) moderately important (points = 3), (iv) less important (points = 2), (iv) not at all important (point = 1) and (iv) not applicable (point = 0). The reference periods for deforestation were 2002-2013 and 2013-2018. The inquiries for drivers of deforestation between the two references periods aimed to determine whether such drivers are evolving.

Direct drivers of deforestation are summarized and presented in Figure 25 for Mainland Tanzania and Zonal level in Figures 26, 27 and 28. **Generally, results show that direct drivers of deforestation are not evolving and that, agriculture and wood extraction were two major direct drivers at National level** (Figures 25, 26, 27, 28).The two major drivers nationally are also prominent in all zone except in Eastern zone where wood extraction is the major driver of deforestation (Figures 26 and 27). **Other major drivers of deforestation National and Zonal levels are livestock, mining, and settlement** (Figures 26 and 27). Despite that,

an exception is observed in a Western zone where the refugee is a cause of deforestation but not registered in other zones.



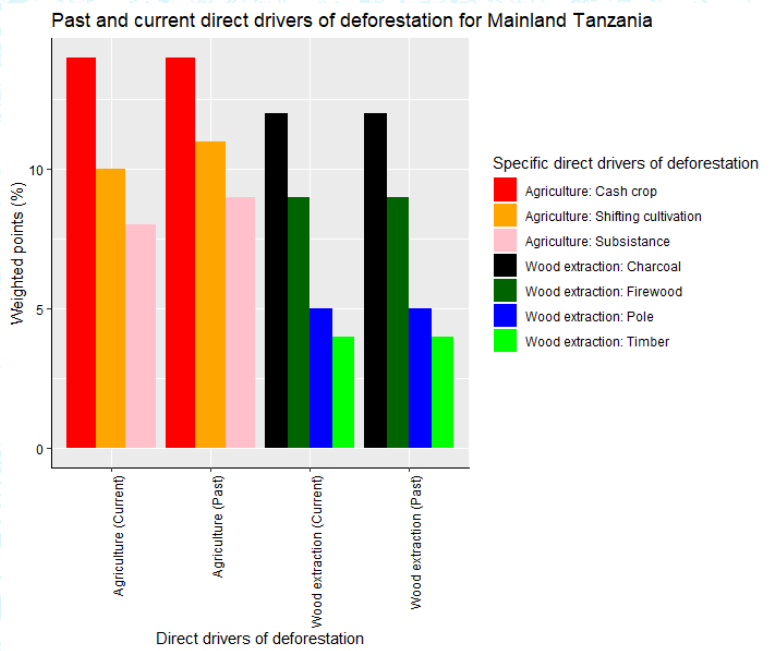


Figure 25 : Past (2002-2013) and current (2013-2018) drivers of deforestation for Mainland Tanzania

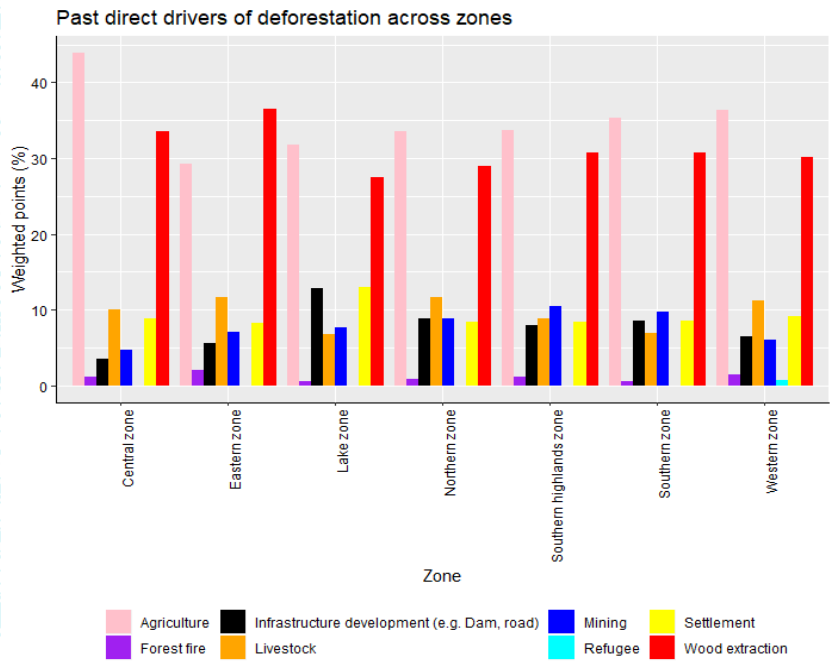


Figure 26 : Past (2002-2013) drivers of deforestation across zones in Mainland Tanzania

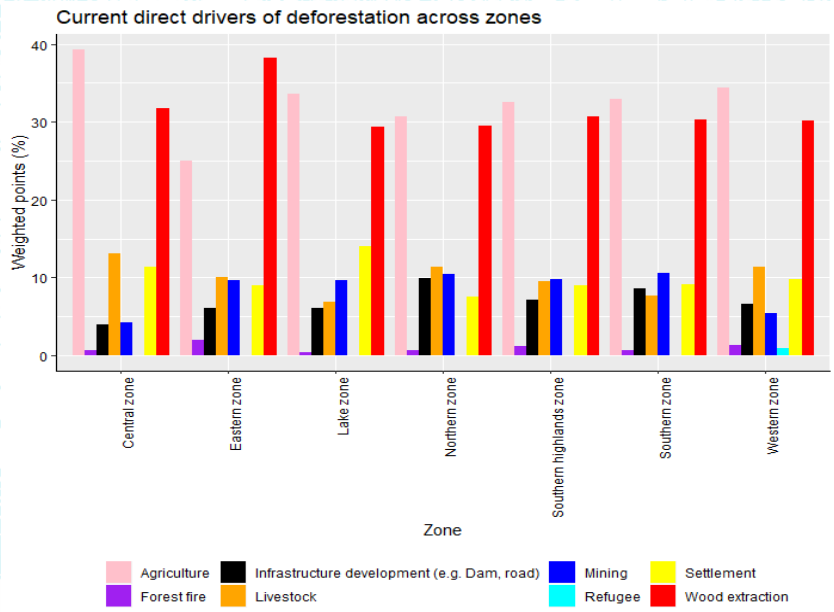
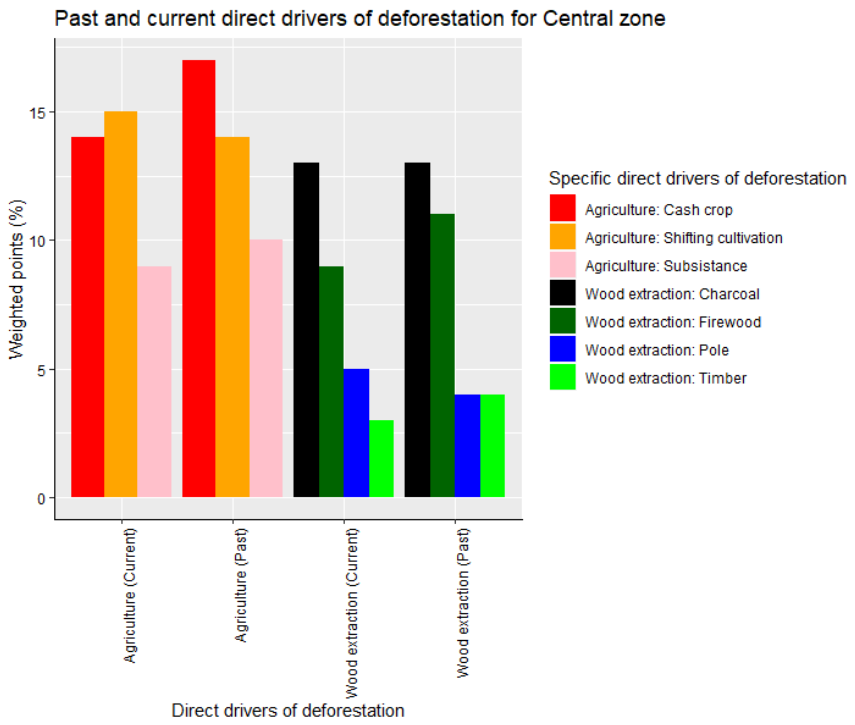


Figure 27 : Current (2013-2018) drivers of deforestation across zones in Mainland Tanzania



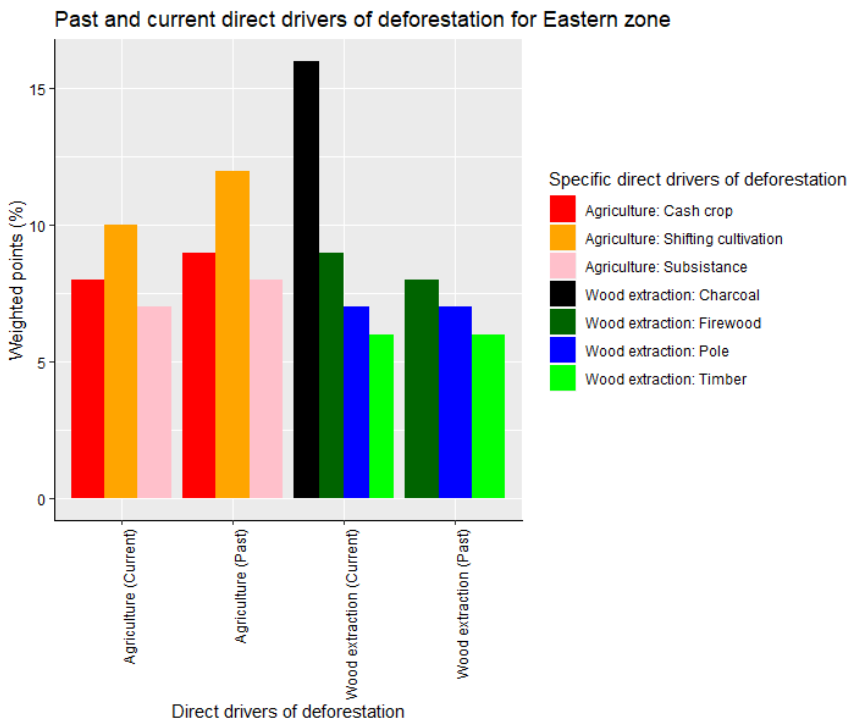
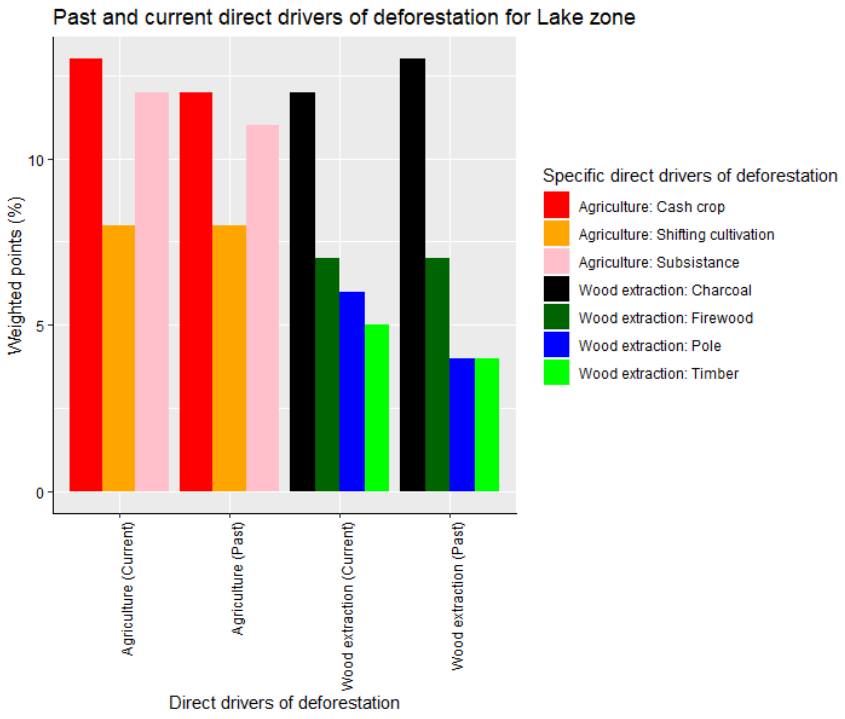


Figure 28: Past and current specific direct drivers of deforestation across zones in Mainland Tanzania



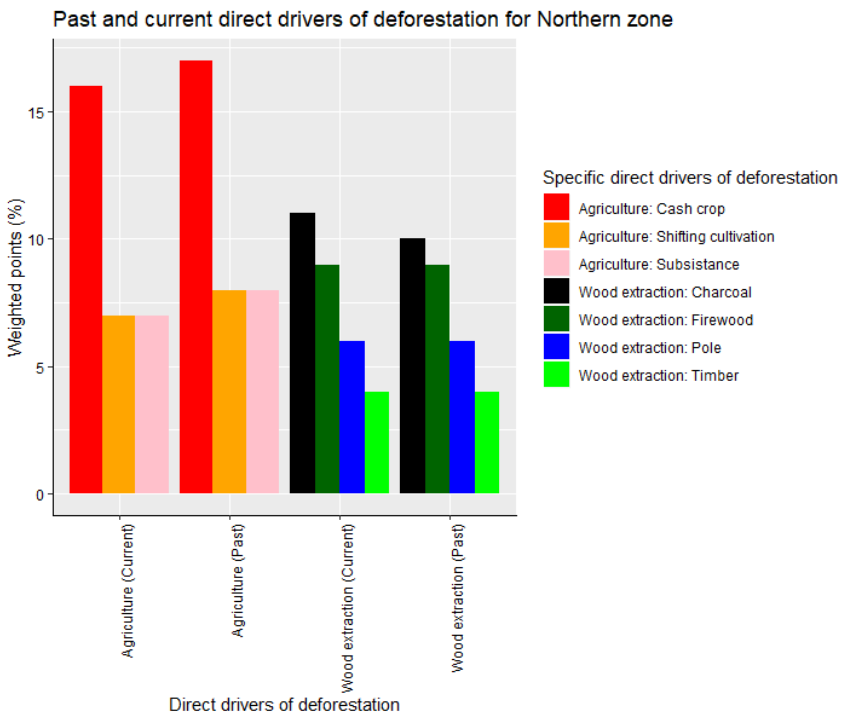


Figure 29: Past and current specific direct drivers of deforestation across zones in Mainland Tanzania

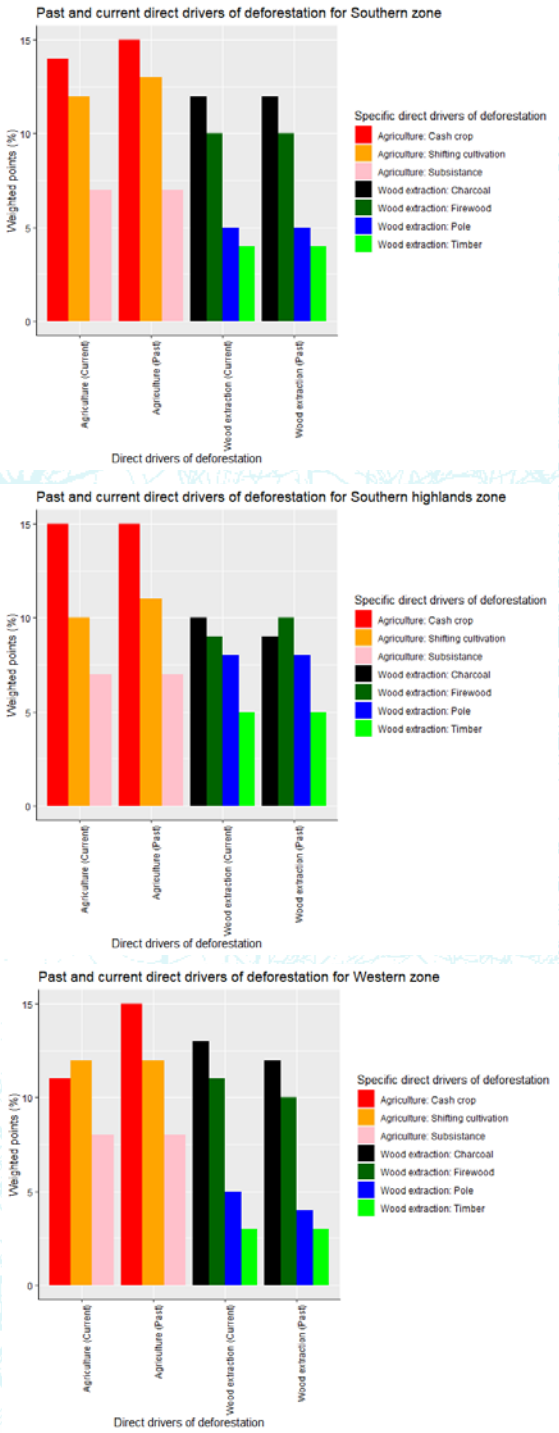


Figure 30: Past and current specific direct drivers of deforestation across zones in Mainland Tanzania

The key direct drivers of deforestation are discussed briefly as follows:

Agriculture

According to respondents, specific drivers of deforestation due to agriculture are cash crop farming, shifting cultivation and subsistence farming in decreasing order of importance (Figures 25 and 28). Subsistence and cash crop farming cause deforestation through expansion of farms for subsistence crops involves clear-felling of trees; in some cases, farms are established within FRs or forested areas on general and village land. Shifting cultivation may entail farm expansion or motivated by other factors (e.g. culture, high productivity, etc) and that its unique feature farms are not permanent.

Agriculture is an important economic sector of the Tanzanian Economy and contributes about 29.1% of Gross Domestic Product (URT, 2017). During the 2016/17, the total area of farm land used in crop production was 16,977,740 ha in Mainland Tanzania where Tabora Region had the largest farm area (1,926,174 ha), followed by Dodoma (1,487,065 ha). Only 18% of all crop farms in Mainland Tanzania were registered and the rest were unregistered (URT, 2017).

Wood extraction

Wood extraction for charcoal making contributes the largest share of total perceived reasons behind deforestation followed by firewood, poles, and timber (Figures 25 and 28). Wood extraction for charcoal making involves uncontrolled clear-felling or excessive tree cutting per unit area. The cumulative effect of wood extraction for firewood, pole, and timber combined with charcoal may also lead to deforestation. However, in many cases wood extraction for firewood, pole and timber result into forest degradation other than deforestation.

The National energy balance indicates dominance of biomass use in the form of charcoal and firewood and its contribution to the total National energy consumption is about 85% (URT, 2015). Petroleum products contribute about 9.3% of the total energy consumed while electricity

accounts for 4.5% and 1.2% from coal and renewable energies. Charcoal and firewood are consumed mainly in urban and rural areas respectively. About 70% of the Tanzanian population lives in rural areas and use traditional fuels mainly woodfuel for cooking in households and institutions and for processing in agro-industries (Njana *et al*., 2013; URT, 2015).

Charcoal consumption in urban areas has nearly doubled over the past ten years due to urbanization, high prices or scarcity of other alternatives particularly kerosene, electricity and Liquefied Petroleum Gas (LPG) (URT, 2015). It is projected that demand for charcoal, without supply and demand sideinterventions, will double by 2030, from approximately 2.3 million tonnes of charcoal in 2012 (URT, 2015). So as to counter growing demand for wood energy, the Government has been promoting substitution of charcoal and firewood by providing tax relief to stimulate the use of LPG in the country. Over the past ten years, LPG supply for household cooking has increasedsignificantly (URT, 2015). The total volume of LPG imported in the financial year 2010/11 was 24,470 MT compared to 69,148 MT in financial year 2014/15. The trend shows that the LPG market is growing rapidly especially in urban centers.

Livestock

Livestock cause deforestation through uncontrolled forest fire by livestock keepers for the purpose of stimulating pasture or control of harmful pests to livestock. Likewise, nomadic livestock keeping involves clear-felling of forests for establishment of new settlement. Moreover, livestock destroys regenerants and cause soil compaction altogether impairing tree survival and growth.

3.1.5.3 Indirect drivers of deforestation

A total of five indirect drivers of deforestation were identified in a similar manner as to direct drivers of deforestation and are discussed in the following Sub-section:

Economic factor

Economic factor was identified as a major indirect driver of deforestation both at National and Zonal levels. According to respondents, the economic factors affecting deforestation include market growth, increased market accessibility, increased demand, poverty and market failure. For example, since the Government moved to Dodoma, the population in the city has increased, as a result demand for charcoal has gone high resulting in increased markets for charcoal along Morogoro-Dodoma highways. Such markets have also become accessible from neighboring places hence there is anticipated increase in deforestation in surrounding areas. Respondents also mentioned market failure as an economic factor causing deforestation. Market failure means uncontrolled and non-competitive market. Again, charcoal can be a good example in this regard, due to corruption, non-compliance to laws and regulations, poor accountability, altogether amounting to Policy failure which results into uncontrolled and non-competitive charcoal market implying that actors involved in such business maximize profit and are more encouraged to sustain the business for self, rather than common interest.

Policy and institutional factor

Poor or lack of coordination among policies (e.g. forest-land-mining-agriculture), the slow pace of land use planning and their implementation and open-access nature of general land constitute Policy and institutional factors behind deforestation cited by respondents.

Demographic factor

This was the third important indirect driver of deforestation. Demographic factor implies population growth due to migrants (refugee or nationals in need of land for agriculture, pasture for livestock, minerals, forest resources) or high number of people or livestock in a piece of land per unit area due to demand of land for agriculture, mining, pasture or forest-based livelihoods or higher birth rate and poor birth control. Therefore, the demographic factor affects many other direct and indirect drivers of deforestation. Statistics show that Tanzania's population has increased

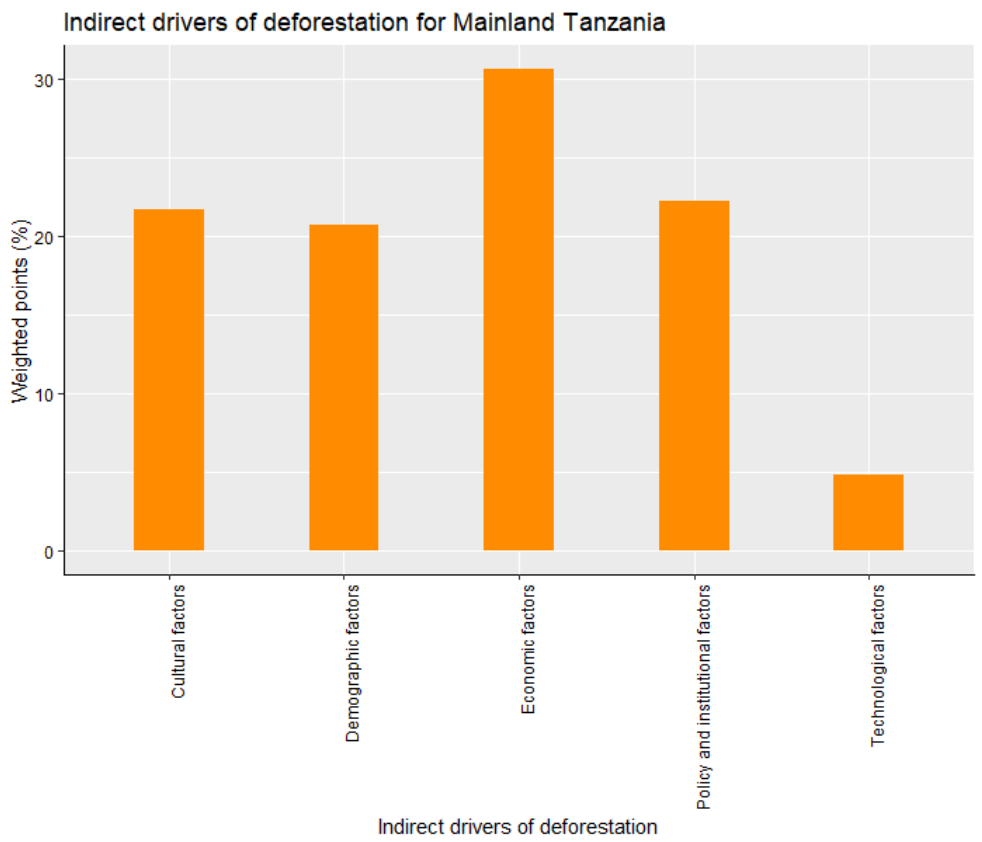
about four times from 12.3 million in 1967 to 54.2 million in 2018 (NBS, 2019).

Cultural factor

Cultural factor entails attitudes, values, and beliefs. It involves little to no concern on the future generations with regard to the environment such that practices are central to the principles of SFM.

Technological factors

Technological factors causing deforestation indirectly include wastage in wood harvesting and processing, poor efficiency of wood energy stoves, low productivity, the inadequate and untimely supply of farm input and inadequacy of weather information.



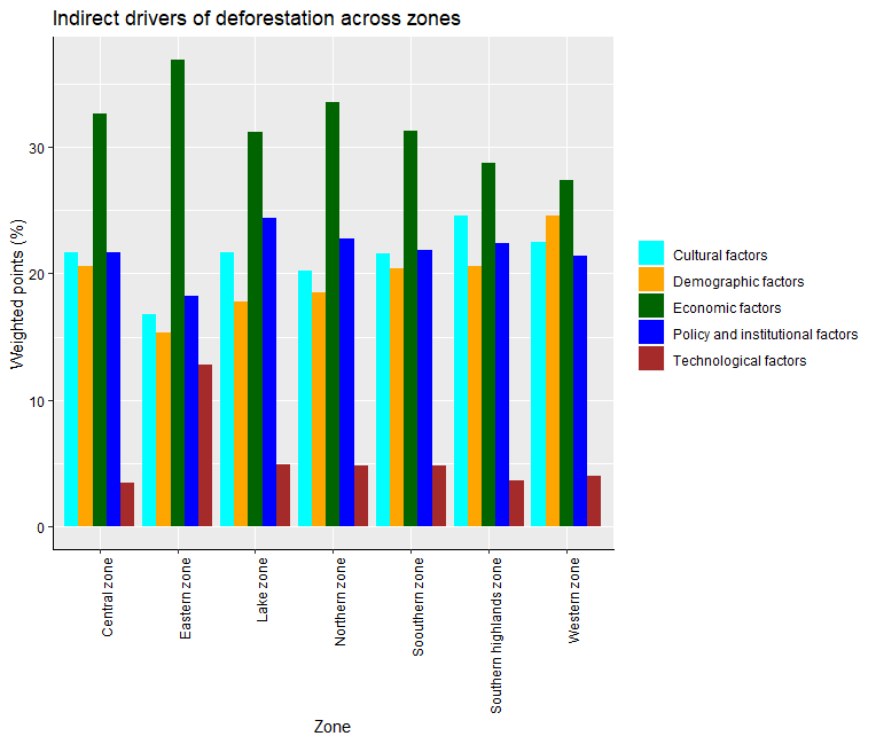


Figure 31: National level (top) and Zonal level (bottom) indirect drivers of deforestation

3.1.5.4 Strategic interventions to address drivers of deforestation

Based on analysis of direct and indirect drivers of deforestation, the following sector-specific strategic interventions for addressing deforestation and forest degradation are proposed:

(i) Enhance education and awareness creation on the importance of forests, their sustainable use and consequences for their loss,

(ii) Enhance effectiveness in policy implementation and law enforcement,

(iii) Enhance the involvement of adjacent communities with well-defined incentives and establishment of VLFRs/CFRs as much as possible,

(iv) Enhance promotion on the use of efficient stoves,

(v) Enhance SFM (e.g. forest use should comply with approved harvesting plan),

(vi) Ensure adequate professional staff and favorable working condition (e.g. sufficient budget to support forest management activities),
(vii) Introduce plantations and woodlots for wood energy,
(viii) Collaborate with the energy sector to determine and monitor energy need and sources,
(ix) Promote beekeeping and income-generating forest-friendly undertakings so as to improve the household economy,
(x) Sensitize politicians on the social, economic and environmental importance of forests and their role in supporting life of the current and future generations so as to gain political support,
(xi) Ensure degraded areas are rehabilitated, and
(xii) Coordinate adequately with all relevant sectors to ensure forests are accrued by both the present and future generations.

3.1.6 Extent and status of wildlife corridors

A wildlife corridor is a link of wildlife habitat, generally native vegetation, which joins two or more areas of similar or different wildlife habitat. Corridors are critical for the maintenance of ecological processes including allowing for the movement of wild animals and the continuation of viable populations. By providing landscape connections between larger areas of habitat, corridors enable migration, colonizationand interbreeding of plants and wild animals. When native vegetation is cleared, fragmented patches or islands are created. These patches may become cut-off from other areas of habitat resulting in many plant and animal species becoming isolated, especially when the land between the patches is permanently altered for human activities such as deforestation. As these vegetation patches are reduced in size and become increasingly isolated, the on-going viability of ecosystems and individual populations of species within them is severely affected. This ultimately leads to a break down in ecological processes such as species migration, dispersal and recycling of nutrients.

A total of about 58 wildlife corridors have been identified and documented (Appendix 35). This includes 30 corridors which are documented (Jones *et al*., 2009) and 28 undocumented. Besides, the wildlife corridors fall

under various land ownership types which include village, private (e.g. sugarcane plantations in Mikumi Udzungwa wildlife corridor), forest (NFR (e.g. Uzigua FR in Wami Mbiki-Saadani wildlife corridor) or VLFR (e.g. Sautimoja VLFR in Selous-Niassa wildlife corridor), wildlife (GR, GCA, WMA) reserved and general lands as well military bases (e.g. along Mikumi-Udzungwa wildlife corridor). The complex chain of land ownership types suggests wildlife corridors fall under land uses which may not necessarily be compartible with conservation. Moreover, wildlife corridors have not been protected legally until recently when the Wildlife Conservation (wildlife corridors, dispersal areas, buffer zones, and migratory routes) regulations were established. Among others, the regulation requires a Land Use Plan in accordance with the Land Use Planning Act and in collaboration with LGAs and other relevant stakeholders.

Generally, wildlife corridors are active yet are faced with a number of challenges. Challenges to wildlife corridors are summarised as follows:

- Conflicting land uses such as wildlife management and conservation versus agriculture, livestock keeping, urbanization and settlements, fuel wood production, bush meat hunting and mining,
- Deforestation caused by settlements and agriculture,
- Cattle incursion,
- Human-wildlife conflicts and retaliatory killings,
- Wildfires, and
- Refugee camps/refugees.

Similarly, suggested a potential solution to wildlife corridors are also summarized as follows:

- Village participatory land-use planning and where necessary households may be relocated using appropriate legal procedures,
- Establish VLFRs or WMAs as deemed appropriate,
- Intensify management of FRs serving aswildlife corridors, dispersal areas, buffer zones or migratory routes,
- Effective implementation of a land use plan,

- Implementation of regulations - wildlife corridor, route and buffer zone (GN 123 of March 2018),
- Effective enforcement of wildlife and forest laws,
- Sensitization of local communities on the benefits of conservation, and
- Effective measures to prevent wildlife-human conflicts and wildlife encroachment on farmsteads.

Corridors play an extremely important role in the maintenance of biodiversity and ensure the sustainable contribution of wildlife and tourism Sub-sector to the National economy. Therefore, wildlife corridors need to be safeguarded by addressing the prevailing challenges**.** List of wildlife corridors, their challenges, and potential solutions are provided in Appendix 36.

3.1.7 Challenges related to extent of forests under different ownership types

A number of challenges were encountered when determining extent of forests under different ownership types. One among the challenges identified is quality of forest data. Such challenges include but are not limited to multiple records, recording of FRs owned and managed by other authorities, FRs bearing multiple names recorded as different individual FRs, lack of regular updating of new forest names i.e. maintaining records of FRs combined to form one FR or FRs changed to higher status such as nature FR or NP. For example, a total of 38 NFRs (505,366 ha) combined to form 15 FRs and nature reserves were identified in recent documentations (*see Appendix 37*). Poor data-keeping and management may result in unrealistic statistics on the extent and condition of forests and consequently affect planning and decision making. Given the importance of forest data and in order for forest resources to contribute to National development and economy as emphased in the National Forest Policy (1998) and the Revised National Forest Policy (*Draft*), it is important that challenges related to keeping and management of forest data are addressed immediately**.**

Statistics on total forest cover are available. Likewise, areas under different management regimes are known. However, how much of such forest cover falls on FRs, individual wildlife reserves (i.e. GRs, GCAs, NCA and NPs), VLFRs and outsides VLFRs is not accurately known. During fieldwork many efforts have been done to get information on VLFRs but this was challenged by poor record keeping and fragmented information. Certainly, unknown number of VLFRs were not recorded (and not included in reported statistics) and there was substantial missing data for recorded FRs. Statistics in this report do not match those reported previously in PFM facts and figures (2008 and 2012). The reasons for departure on VLFRs statistics cannot be established accurately because PFM facts and figures provide summaries and detailed data on the same organized in database is lacking. Likewise, statistics on private (private plantations, woodlots etc.) and sacred forests are lacking. These challenges need to be sorted out. Therefore, a further study focusing on private and sacred forests need to be implemented urgently.

As highlighted in Sub-section 2.4.2, knowledge on current status and ecological potential of forests at a National level relies on current National forest inventory data. Forest inventory provides information on quality and quantity of forest resources. Trends on quality and quantity of forest resources are derived from forest inventory repeated over time. Normally the minimum interval between forest inventories is five years. This study assessed status of forest resources using data from NAFORMA which was implemented for the first time between 2009 and 2013.

NAFORMA sets a mechanism for monitoring forest resources in the country. Information on status and trends of forest resources generated through National forest inventory are essential for strategic planning, management, decision making, and Policy development and implementation. Periodic National forest inventory data are also used to evaluate the outcome of policies and decisions. Likewise, emerging financing opportunities for SFM under the climate change agenda requires effective systems for monitoring forest cover and carbon emissions. Lack of up to-date information on forest resources and their trend have resulted in poor

forest policies, planning, and management; hampered efforts to reduce illegal and unsustainable extraction of forest resources which contribute to unsustainability of forest resources. For example, an annual wood deficit of 19 million cubic metres was reported in 2015, since there is no up to-date data it is not clearly known whether wood deficit is growing or declining. Therefore, the second National forest inventory need to be implemented urgently. The inventory should ensure that, (i) challenges during implementation of the first National forest inventory are carefully addressed; and (ii) forest inventory and forest cover monitoring designs are compatible.

3.2 Challenges and conflicts on forest resource management under different forest ownership types

3.2.1 Challenges on management of forest resource under different forest ownership types

Forest ownership involves different actors including individuals, corporate, company, NGOs (private), VG, LGAs, and CG. Generally, all forest owners face one or a combination of the following challenges: financial resources, human resources, policy and legal issues, environmental factors, technical and technological issues, governance issues and socio-economic factors (Indufor, 2012; Blomley and Iddi, 2009). The extent of these challenges varies depending on the type of forest, management activities, size of forest owned. The subsequent Sub-sections present challenges facing different forest owners in management of the FRs.

3.2.1.1 Challenges on management of NFRs

The study identified five major challenges in the management of NFRs:

(i) Inadequate financial resources,
(ii) Inadequate human resources,
(iii) Poor infrastructure and management of assets,
(iv) Presence of FRs without management plans and ungazetted FRs, and
(v) Weak law enforcement.

(i) Inadequate financial resources

Financial resources are essential in forest management, they are needed to cover costs for recruiting new foresters and supporting staff (i.e. labour force), developing infrastructure and procurement of equipment and materials and implementation of planned activities (e.g. preparation of forest management and harvesting plans, conducting forest patrols, forest boundary consolidation, boundary tree and enrichment planting, forest fire management, evictions of livestock keepers, and supervising forest harvesting).

The reasons for insufficient financial resources are related to institutional mandates. TFS is an Executive Agency, and thus is a semi-autonomous institution, which is subjected to all laws governing the public services in the country. Over the past seven financial years (2011/2012 –2017/ 2018) of the implementation of Strategic Plan I (SP1) and SP II. During this period, TFS has managed to increase revenue collection. For instance, in 2017/18 TFS collected TZS 402,265,045,647 equivalent to 105% of the targeted goal. Unfortunately, under current institutional setup, TFS has limited authority over revenue collected from forest resources; it should comply with all laws governing the public service in the country, including remitting at least 15% of the revenue collection to Treasury to fulfill other government obligations.

It was reported during the interview that there is a big difference between the actual budget that reflects actual forest management costs and approved budget both at National and Zonal levels. Preparation of the annual budget at District and Zonal levels considers what is needed to be achieved in relation to the strategic plan, yet the approved budget is based on how much the government will allocate in the forest sector (budget ceiling). Because of that, the proposed budget undergoes modifications in an attempt to fit with the pre-stated budget ceiling. The modifications include omission of some forest management activities (e.g. forest management plan preparation) or scaling down some activities (e.g. reducing number of forest patrols).

There are two potential solutions to address the challenge of insufficient financial resources. These include: 1) Increase budged allocation to TFS that reflect the actual requirement for forest management, and 2) transform TFS to an Authority for attaining full mandate to collect and use funds.

(ii) Inadequate human resources

Insufficient human resource refers to unsatisfactory trained and experienced manpower to undertake forest management activities. TFS has 1,899 staff composed of 1,368 forest staff, 302 beekeeping staff and 229 supporting staff while the actual staffing requirements for effective and efficient forest management is 5,539. This is equivalent to a deficit of 3,640 staff (66%) (TFS, 2017a). Note that according to *"Waraka wa Maendeleo ya Utumishi Na 21 watarehe 10/12/2002"* for proper management of forest resources, one forester should manage between 5,000 ha and 50,000 ha of natural forest and 1,000 ha to 10,000 ha of forest plantation. The study revealed that, Districts like Malinyi (total forest size = 15.8 ha) and Kwimba (total forest size = 240.0 ha) have a total of 2 and 2 foresters respectively. Conversely, Districts like Kilwa (total forest size = 508,996.9 ha), Mlele (total forest size = 828,796.2 ha) and Sikonge (total forest size = 1,915,786.7 ha) have a total of 12, 8 and 10 foresters respectively.

TFS as Executive Agency responsible to manage all NFRs and forests on general land has no control of the recruitment process. Whenever TFS demand to recruit foresters and supporting staff has to launch a request to Public Service Recruitment Secretariat (PSRS) involving a lengthy process. The study is of the opinion that, partly the issue of inadequate human resources can be dealtwith by transforming TFS Agency to an Authority with anticipation that an authority has relatively higher level of control of the recruitment process.

(iii) Poor infrastructure and assets

Poor infrastructure and assets refer to physical resources needed for forest management which include buildings, furniture, transport facilities

(cars, Lorries, and motor vehicles) and office equipment. The challenge can be addressed by increasing budget allocation to TFS or transforming TFS to an Authority.

(iv) Presence of FRs without management plans and ungazetted FRs

Forest management plan is an important tool in the management of forest resources. It is a description of the forest, management objectives and goals, prescriptions and activities for a set period of at least five years. The plan serves as a guideline for SFM by defining forest management prescriptions and utilization, milestones for monitoring and evaluation of the management practices. Hence forest management plan is a pre-requisite for forest management. The study recorded 124 NFRs (32% of total counts of NFRs; 72% of the total area under NFRs) with management plans implying that **260** NFRs (68% of total counts of NFRs; 28% of the total area under NFRs) is without management plans. Some of NFR management plans are outdated or prepared without forest inventory data and for some productive FRs harvesting plans are lacking. Lack of harvesting plans for existing forest management plans is due to one of the following possibilities; 1) productive FRs are plantationsand not yet due for harvesting or 2) harvesting plans were not prepared. Table 15 summarises the status of management plans for NFRs while a list of NFRs with management plans is provided in Appendix 38. Managing FRs without forest management plans is contrary to requirements defined in the Forest Act (2002). Part III of the Forest Act states that, forest management plan shall be prepared for each FR and PF.

For the forest to be legally declared as a NFR, it has to be published in the government gazette which indicates Government Notice Number (GNN) and year of establishment (it may also include date and month when the notice was issued). Principally, a Government Notice (GN) is a legal document evidencing the right of forest ownership. It further provides information such as the size of the forest, Job (JB) Number, and description of the boundaries. However, the study documented 56 ungazetted NFRs (15% of all NFRs). A list of ungazetted NFRs is provided

in Appendix 39. This poses management challenges to Forest Managers as it makes it difficult to enforce forest laws such as evicting people who encroach the FRs or suing culprits found in the FRs. In addition, some forests have no official map that indicates boundaries. Besides the study observed poor archiving of forest maps; like wise for gazetted NFRs, GN (document) was frequently missing. The study recommends that the process of gazettment of all ungazetted NFRs should be completed and that there should be maps and GN for all NFRs. GN and maps should be properly archived at all administrative levels and regularly updated (i.e. head office should archive GN and maps for all NFRs; Zonal offices should archive GN and maps for all NFRs in their respective zones and District offices should archive GN and maps for all NFRs in their respective Districts).

Table 15: Summary on the status of management plans for NFRs, LAFRs,and VLFRs

Ownership type	Management objective	Count of management plan		Area (ha) covered withmanagement plan		Count of management plans prepared using forest inventory data	Count of harvesting plans		Area (ha) covered with harvesting plan	
		Current	Outdated	Current	Outdated		Current	Outdated	Current	Outdated
NFR	Protection	68	13	1,592,718.4	152,970.5	41	0	0	0.0	0.0
NFR	Production	29	1	2,789,332.8	24,887.0	24	14	0	2,220,285.8	0.0
NFR	Both	11	2	1,972,043.2	28,254.0	13	7	0	1,784,006.5	0.0
Total	*Counts*	*108*	*16*	*6,354,094*	*206,111.6*	*78*	*21*	*0*	*4,004,292.2*	*0.0*
	*%**	*28*	*4*	*70*	*2*	*63*	*49*	*0*	*83*	*0*
LAFR	Protection	0	16	0.0	65,915.9	0	0	0	0.0	0.0
LAFR	Production	3	3	402,358.7	226,179.3	3	3	0	402,358.7	0.0
LAFR	Both	0	3	0.0	14,419.0	0			0.0	0.0
Total	*Counts*	*3*	*22*	*402,358.7*	*306,514.2*	*3*	*3*	*0*	*402,359.0*	*0.0*
	*%**	*2*	*14*	*22*	*17*	*12*	*33*	*0*	*63*	*0*
VLFR	Protection	11	45	52,742.7	59,757.2	10	0	0	0.0	0.0
VLFR	Production	8	39	23,693.9	144,198.1	3	7	1	21,720.2	1,973.7
VLFR	Both	57	28	334,312.7	96,325.4	5	49	22	280,215.9	101,262.4
VLFR	No data	32	369	120,114.5	325,614.8	No data	451	0	666,584.3	0.0
Total	*Counts*	*108*	*481*	*530,864*	*825,895.5*	*18*	*507*	*23*	*968,520.0*	*103,236*
	*%**	*18*	*82*	*39*	*61*	*24*	*42*	*17*	*50*	*17*

*Percentage on count and area coveredwith management plans are based on total counts/area of all FRs (i.e. with and without forest management plans); percentage on count of management plans prepared using forest inventory data are based on total counts of/area covered with existing forest management plans and percentages on counts of/area covered with harvesting plan are based on counts of/area covered with productive/both productive and protive forest management plans.

(v) Weak law enforcement

Weak law enforcement on traded forest products may contribute to over-exploitation and subsequent deforestation and forest degradation due to overharvesting or harvesting trees that have not attained minimum harvestable diameter. In addition, it leads to encroachment in FRs for farming (shifting/perment cultivation), human settlements and grazing of livestock. Table 14 provides a summary on the general condtion of FRs under different ownership types where 43% of all NFRs are in good condition while the rest are either degraded (36%), degraded and partly deforested (10%) or deforested (11%). Furthermore, TFS reports that more than 200 villages are established and registered within FRs where people do graze and farming. The solution for such a challenge is to enhance forest law enhancement.

(vi) Other forest management challenges

Table 16 presents other forest management challenges facing CG in managing NFRs, and potential solutions to address those challenges.

Table 16: Other forest management challenges facing CG and potential solutions

SN	Forest management challenges	Potential solutions
1.	Political interference – tendency of politicians to interfere forest management activities	Enhance extension service to educate politicians on importance of forest management and conservation.
2.	Presence of resource conflicts over ownership, use,and boundary	♦ Support forest adjacent villages to prepare and implement village land use plans that show different land use categories in village land, ♦ Participatory resurvey of the forest to harmonize boundaries, and ♦ Forest boundary consolidation.
3.	Overdependence on forest resources and increasing demand for land – forest adjacent communities depend on FRs for forest products and services	♦ Provision technical and financial support on environment-friendlyincome generation activities e.g. beekeeping; ♦ Introduction and promotion for use of alternative, and affordable sources of energy and energy-saving stoves; and ♦ Promoting modern livestock keeping to avoid overgrazing and illegal grazing in the FRs.

SN	Forest management challenges	Potential solutions
4.	Poor intra and inter-sectorial coordination – there are multiple institutions in forest management but are not coordinated	♦ Improve intra and inter-sectorial coordination through the establishment of stakeholders' forum that put all stakeholders together at least twice per year to discuss forest management challenges and defining solutions.
5.	Inadequate community participation in forest management	♦ Improve Extension Unit for providing conservation education; and ♦ Enhance community participation in forest management through PFM.
6.	Forest fires – are caused by farm preparation, illegal grazing, collection of forest products and arsonists	♦ Enhance Extension service to educate forest adjacent communities on the effect of fire and importance of conservation; and ♦ Enhance forest law enforcement – arresting and punishing those who cause a forest fire.
7.	Climate change	♦ Comply with climate change impacts mitigation and adaptation strategies.
8.	Invasive plant species such as *Cedrella Odorata* in Kimboza FR, and *Accacia Meansii* in Chome NFR	♦ Assess the extent and impact of invasive species and implement biological and physical management strategies.

3.2.1.2 Challenges in management of LAFRs

The study identified five major challenges in management of LAFRs:

(i) Inadequate financial resources,
(ii) Inadequate human resources,
(iii) Presence of FRs without management plans and ungazetted gazetted FRs,
(iv) Weak law enforcement, and
(v) Political interference.

(i) Inadequate financial resources

As explained in Sub-section 3.2.1.1, inadequate financial resources also pose challenges in management of LAFRs. Possibly this is propagated by the fact that, the forestis not a priority sector in the LGAshencelittle or no fundsare allocated to support forest management activities. This challenge may be addressed by transfering ownership of LAFRs to CG.

(ii) Inadequate human resources

LGAs have insufficient human resources in the Forest sector. For instance, in 2004, LGAs had an overall deficit of 237 Senior Forest Officers, 1180 Forest Officers and 2114 Assistant Forest Officers (Ishengoma, 2004). For example, the forest sector in Mpwapwa DC in Dodoma Region, has only one Assistant Forest Officer who also serves as Beekeeping Officer, Game Officers, and Fisheries Officer. The same situation also was observed in other DCs. Reasons for the limited number of staff includes unfavourable working condition, recruitment procedures being bureaucratic and limited remuneration. As a result, some foresters decide to quit from DCs to CG or other jobs. The solution for this challenge is to transfer all foresters to CG.

(iii) Presence of FRs without management plans and ungazetted FRs

The study recorded 25 LAFRs (16% of total counts of LAFRs; 40% of the total area under LAFRs) with management plans implying that 133 LAFRs (84% of total counts of LAFRs; 60% of the total area under LAFRs) are managed without management plans. A large number of LAFR management plans are outdated, very few were prepared without forest inventory data and some productive FRs lack harvesting plans. Lack of harvesting plans to the existing productive forest management plans is contrary to the law. Table 15 summarises the status of management plans for LAFRs while a list of LAFRs with management plans is provided in Appendix 40.

The study has documented 50 ungazetted LAFRs (32% of all LAFRs). This is posing management challenge to Forest Managers as it makes difficult to enforce forest laws such as evicting people who encroach the forest or suing culprits found in the forest. A solution for this challenge is the completion of gazettement process for ungazetted LAFRs.

(iv) Weak law enforcement

Illegal activities undertaken in LAFRs include harvesting of trees for building materials and charcoal production, illegal grazing, illegal mining,

poaching, and encroachment in FRs for farming and human settlements. All these are the result of weakness in the enforcement of forest laws in respective LGAs. The solution is to enhance law enforcement by vesting forest management activities under one umbrella of CG through TFS (later Authority). Additional potential solution is preparation of the village land-use plan to set aside land for different uses and resurvey all LAFRs.

(v) Political interference

Implementation of forest management activities in DCs is challenged by politicians. Politicians, in this case, include Members of Parliament, Ward Chancellors, and elected Village Leaders. There are incidences where political leaders were involved in mobilizing villagers to temper with existing forest boundaries or influence changes of land use to LAFRs. This challenge is prominent in the DCs due to the fact that foresters in DCs are subordinate to Ward Chancellors (i.e. they are accountable to Full Council). There are two solutions for this challenge: 1) enhance awareness creation to politicians on the importance of forests and forest management, and 2) transferring LAFRs and foresters from LGAs to CG under TFS (later Authority).

(vi) Other forest management challenges

Table 17 presents other forest management challenges facing LGAs in managing LAFRs, and possible solutions to address those challenges.

Table 17: Other forest management challenges and potential solutions in LGAs

SN	Forest management challenges	Potential solutions
1.	Unclear forest boundary – boundaries in some FRs has not beacons and have not been cleared.	Forest boundary consolidation by the installation of beacons, erecting signboards and clearing.
2.	Higher dependence on forest resources – forest adjacent communities depend on FRs for forest products and services.	♦ Finding alternative sources of energy; ♦ Support forest adjacent villagers to have alternative income generating activities e.g. beekeeping ♦ Provision of other sources of building materials.
3.	Low awareness on the importance of forests.	♦ Enhance extension service to educate forest adjacent communities on the effect of fire and importance of conservation.
4.	Forest fires – are caused by farm preparation, illegal grazing, collection of forest products and arsonists.	♦ Enhance extension service to educate forest adjacent communities on the effect of fire and importance of conservation; and ♦ Enhance forest law enhancement – arresting and punishing those who cause forest fire.
5.	Inadequate community participation in the forest management.	♦ Improve Extension Unit for providing conservation education; and ♦ Enhance community participation in forest management through PFM and complete JFM processes by two forest management partners to sign and execute a JFMA.
6.	Poor coordination – there are multiple institutions in forest management but are not coordinated.	Improve intra and inter-sectorial coordination through the establishment of stakeholders' forum that put all stakeholders together at least twice per year to discuss forest management challenges and defining solutions.

3.2.1.3 Challenges on the management of VLFRs

The study also identied four major challenges in management of VLFRs:

(i) Inadequate financial resources,
(ii) Inadequate human resources,
(iii) Outdated forest management plans, and
(iv) Governance issues.

(i) Inadequate financial resources

At village level, funds are needed to cover costs for purchasing equipment and materials needed for managing forests, implementation of the planned activities (e.g. updating forest management and harvesting plans, conducting forest patrols, forest boundary consolidation, boundary tree and enrichment planting, forest fire management, evictions of the livestock keepers, and supervising forest harvesting). Reasons behind financial shortages in management of VLFRs are several which include:

- Some villages have highly degraded forests; thus, they have no stock suitable for timber or charcoal production. Therefore, such villages cannot harvest forest produce from such FRs for some years until trees attain harvestable size.
- Some villages have well-established forests but their management objectives are total protection (no harvesting). Sources of revenues in such forests are limited to eco-tourism, non-wood products, and fines e.g. VLFRs in the EAMs.
- Some villages have well-established forests but lack harvesting plans, hammer to mark harvested products, and record-keeping books such as license and permit books as pre-requisitefor harvesting forest products, mainly timber e.g. VLFRs in Pangani District.
- Some villages have well-established forests, have harvesting plans and record-keeping books but are severely challenged by lack of market. This is because of the strict rules governing harvesting of forest produce in the VLFRs compared to non-reserved land or forests on general land.

These challenges can be addressed by creating a financial stream based on internal and external sources. The internal source includes harvesting and trading forest products from VLFRs. Villages with harvestable forests should be assisted to address or overcome factors hindering them from harvesting and trading forest products from VLFRs.

External sources include financial support from various stakeholders, particularly the TaFF. TaFF should support management of protective VLFRs, priority should be given to forests with high externality values. According to Part X Section 80 (purposes of the Fund), particularly Sub-section (b), the TaFF is obliged to promote and assist in the development of the community forestry directed towards conservation and protection of forest resources. The approach applied by TaFF in providing financial support involves selecting forests or community groups on competitive basis. Therefore, the study suggests that apart from the current approach, TaFF should develop a mechanism for supporting forests with higher ecological values wherethose responsible to manage such forests have demonstrated limited financial capacity to cater forforest management.

(ii) Inadequate human resources

VLFRs are managed by members of VNRC. The VNRC members are elected by Village Assembly for the purpose of conducting and coordinating all activities concerning the management of natural resources in the village. The elected members have to be trained on forest management particularly harvesting procedures and requirements. At the village level, insufficient human resources refer to a lack or inadequate well trained and experienced manpower to undertake forest management activities. In most cases, elected members of VNRC do not get training because of insufficient funds to cover training expenses. The effects are many including the following:

- Giving a buyer excess tree volume as compared to the volume he/she has paid for because of miscalculation of tree volume e.g. a case of Sautimoja and Machemba villages in Tunduru District in 2015/16,
- Failure to comply with forest management prescriptions as stated in the forest management plan or harvesting regulations,
- Promoting elite capture, and thus hindering local democracy as few individuals in the village receive training on forest management activities and become permanent members of VNRC.

A solution for this challenge is for TFS or the anticipated Authority to establish a training programme to VNRC and other village members under forestry extension services. The Extension Unit should be responsible for coordination and provision of all forestry training in villages in collaboration with other stakeholders such as NGOs. Alternatively, VGs could also recruit part- or full-time forest expertsto provides technical support on issues related to the management of forests in village land or under CBFM.

(iii) Presence of outdated forest management plans

Table 15 summarises the status of management plans for VLFRs. Generally, findings show that a good number of VLFR management plans are outdated.

(iv) Governance issues

Governance refers to how decisions related to forest management are made, at what level and by whom and how key stakeholders are involved. National Forest Policy of 1998 emphasizes on co-management approach termed as PFM (URT, 1998). The study observed slow pace of involving VG in managing NFRs and LAFRs. Findings show that only 52 NFRs and none LAFRs are co-managed with forest adjacent communities through JFM. For FRs under JFM, cost benefit-sharing has not yet been implemented possibly because JFMAs have not been signed or lack of revenue to be shared. The only exception is Amani Nature FR which implements JFMA. Signing and successful implementation of JFMA may increase revenue to VGs hence use such funds to support forest management activities, including the provision of incentives to VNRC managing VLFRs.

(v) Other management challenges

The study also identified other challenges in management of VLFRs (Table 18).

Table 18: Other management challenges and potential solutions in the management of VLFRs

SN	Management challenges	Potential solutions
1.	Illegal activities – encroachment in VLFRs for farming and settlement, tree cutting for building materials and fuel wood, grazing, poaching, mining, etc.	♦ Enhance forest law and bylaws enforcement; and ♦ Preparation and implementation of a land use plan that defines different land-use categories.
2.	Poor cooperation for some Village Leaders to VNRC members.	Education on how to deal with uncommitted leaders e.g. report to Village Assembly, report to forest officer who provides technical assistance.
3.	Unclear forest boundary – boundaries in some FRs has no beacons and are not cleared.	Forest boundary consolidation by the installation of beacons, erecting signboards, clearing and planting trees.
4.	Political interference – the tendency of politicians to interfere with forest management activities.	Enhance extension service to educate politicians on the importance of forest management and conservation.

3.2.2 Conflicts related to the management of forest resources under different forest ownership types, and potential solutions

Conflict is defined as a disagreement and differences within and between individuals, groups, and structures (Ali, 2004). Disagreements and differences become conflicts when they have devastating effects on individuals or resources. Conflicts are a result of poor management (Anderson *et al*., 1996).

Conflicts identified in this study fall within four broad categories:

(i) Boundary conflict,
(ii) Forest resources ownership conflict,
(iii) Resource use conflict, and
(iv) Revenue conflict.

Conflicts can be resolved in different ways. Chevalier and Buckles (1995) state that conflicts are only fully resolved when the underlying sources of tension between parties are removed. In addition to conflicts, the study presents potential solutions to the conflicts. Proposed solutions depend on the source of conflict and actors involved.

3.2.2.1 Boundary conflict

A number of forest boundary conflicts were reported both in NFRs and LAFRs. These conflicts are based on unclear forest boundaries due to lack of beacons, signboards, boundary trees, and uncleaned boundary. The Forest Act No. 14 of 2002 under Section 28 requires that boundaries of the FR to be visibly demarcated (URT, 2002), however practices in number of FRs are contrary to requirements defined in the Forest Act (2002). Actors involved include TFS, forest adjacent villages and villagers as forest resource users, TAWA, and TANAPA.

(i) Conflicts over forest boundaries in NFRs

These conflicts involve TFS and other actors such as forest adjacent villages, TAWA, TANAPA, DCs, and formal and informal groups as shown in Tables 19, 20, 21, 22 and 23, respectively. Many boundary conflicts (88%) involve TFS and adjacent villages particularly due to encroachment for settlement and farming. The boundary conflicts between TFS and TAWA rank the second (7%) which could partly be due to the current growing tendency of establishing GRs, GCA, and WMAs within FRs.

Table 19: NFRs with forest boundary conflicts (TFS and forest adjacent villages) and potential solution

SN	Forest name	Zone	Region	District	Potential solution*
1.	Maisome	Lake	Mwanza	Sengerema	1
2.	Burko	Northern	Arusha	Monduli	1
3.	Chenene East	Central	Dodoma	Chamwino	1
4.	Image	Southern Highlands	Iringa	Kilolo	1
5.	Kigongkwe	Central	Dodoma	Dodoma	1
6.	Kising'alugalo	Southern Highlands	Iringa	Kilolo	1
7.	Kungwe Bay	Western	Kigoma	Uvinza	1
8.	Kyanyari	Lake	Mara	Butiama	1
9.	Lugufu	Western	Kigoma	Uvinza	1
10.	Lupa North	Southern Highlands	Songwe	Chunya	1
11.	Masanza	Western	Kigoma	Uvinza	1

SN	Forest name	Zone	Region	District	Potential solution*
12.	Mbinga-kimaji	Southern	Lindi	Kilwa	1
13.	Mlali	Central	Dodoma	Kongwa	1
14.	Mpanda North East	Western	Katavi	Mpanda, Mlele,and Nsimbo	1
15.	Mulele Hill	Western	Katavi	Mpanda, Mlele and Nsimbo	1
16.	Nandembo	Southern	Ruvuma	Tunduru	1
17.	Pindiro	Southern	Lindi	Kilwa	1
18.	Rau	Northern	Kilimanjaro	Moshi	1
19.	Rungwa River	Western	Katavi	Mlele	1
20.	Tamburu	Eastern	Pwani	Rufiji	1
21.	Wotta	Central	Dodoma	Mpwapwa	1
22.	Kilindi	Northern	Tanga	Kilindi	2
23.	Kitope	Southern	Lindi	Kilwa	2
24.	Lake Duluti	Northern	Arusha	Arumeru	2
25.	Mafwomero	Central	Dodoma	Mpwapwa	2
26.	Makonde Scarp I and II	Southern	Mtwara	Newala and Masasi	2
27.	Makonde Scarp III	Southern	Mtwara	Tandahimba	2
28.	Mang'aliza (Mangalisa)	Central	Dodoma	Mpwapwa	2
29.	Mount Monduli	Northern	Arusha	Monduli	2
30.	Msaginia	Western	Katavi	Mpanda and Nsimbo	2
31.	Namakutwa/ Namuete	Eastern	Pwani	Rufiji	2
32.	Ndechela	Southern	Mtwara	Nanyumbu	2
33.	Gendagenda	Northern	Tanga	Handeni	3
34.	Ijogo	Central	Dodoma	Kongwa	3
35.	Kwani	Northern	Tanga	Muheza	3
36.	Magoto	Eastern	Morogoro	Mvomero	3
37.	Minziro	Lake	Kagera	Missenyi	3
38.	Mkusu	Northern	Tanga	Lushoto	3
39.	Sasawara	Southern	Ruvuma	Tunduru	3
40.	Utete	Eastern	Pwani	Rufiji	3
41.	Ilembo Usafwa	Southern Highlands	Mbeya	Mbarali	4
42.	Mitarule	Southern	Lindi	Kilwa	4

SN	Forest name	Zone	Region	District	Potential solution*
43.	Haraa	Central	Manyara	Babati	5
44.	Masasi Hill	Southern	Mtwara	Masasi	5
45.	Mount Hanang	Central	Manyara	Hanang	5
46.	Ngarama North	Southern	Lindi	Kilwa	5
47.	Ufiome	Central	Manyara	Babati	5
48.	Kyarano	Lake	Mara	Butiama	6
49.	Mafi Hill	Northern	Tanga	Korogwe	7
50.	Pangani-mangrove	Northern	Tanga	Pangani	8
51.	Chiwindi	Southern	Ruvuma	Nyasa	1 and 2
52.	Lihanje	Southern	Ruvuma	Songea	1 and 2
53.	Litenga	Southern	Ruvuma	Songea	1 and 2
54.	Livingstone	Southern Highlands	Mbeya	Kyela and Rungwe and Nyasa	1 and 2
55.	Mbangala	Southern	Mtwara	Masasi and Nanyumbu	1 and 2
56.	Nyangedi	Southern	Lindi	Lindi	1 and 2
57.	Tong'omba	Southern	Lindi	Kilwa	1 and 2
58.	Usindakwe	Lake	Geita	Geita	1 and 3
59.	Kalambo	Southern Highlands	Rukwa	Kalambo	1, 2 and 3
60.	Mbiwe	Southern Highlands	Songwe	Songwe and Chunya	1, 2 and 5
61.	Patamela	Southern Highlands	Songwe	Songwe	1, 2 and 5
62.	Mwambesi	Southern	Ruvuma	Tunduru	2 and 5

*KEY: 1 = Participatory forest boundary resurvey; 2 = Forest boundary consolidation; 3 = Participatory resurvey and revise forest boundary by revoking part of the FR; 4 = Preparation of Village Land Use Plan; 5 = Provision of conservation education; 6 = Complete the process of gazetting the FR; 7 = Enhance forest law enforcement (e.g. evicting people encroached the reserve); and 8 = Redefine mangrove boundaries to avoid conflict caused by rising of sea level or people who block sea water.

Table 20: NFRs with forest boundary conflicts (TFS and TAWA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Mwalye	Western	Kigoma	Kibondo	1
2	Rungwa River	Western	Katavi	Mlele	1
3	Mpanda Line	Western	Tabora	Kaliua	2
4	Rondondo	Southern	Lindi	Kilwa	2
5	Undendeule North East	Southern	Ruvuma	Namtombo	2

*Key: 1 = Participatory forest boundary resurvey; 2 = Inter sectorial meeting to resolve the conflict

Table 21: NFRs with forest boundary conflicts (TFS and TANAPA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Ruiga River	Lake	Kagera	Muleba	1 and 2

*KEY: 1 = Participatory forest boundary resurvey; and 2 = Forest boundary consolidation

Table 22: NFRs with forest boundary conflicts (TFS and DCs) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Mpanda North East	Western	Katavi	Mpanda, Mlele,and Nsimbo	1

*Key: 1 = Participatory forest boundary resurvey

Table 23: NFRs with forest boundary conflicts (TFS and formal and informal groups) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Mulele Hill	Western	Katavi	Mpanda, Mlele and Nsimbo	1
2	Maisome	Lake	Mwanza	Sengerema	1

*Key: 1 = Participatory forest boundary resurvey

(ii) Conflicts over forest boundaries in LAFRs

These are conflicts that involve LGAs (mainly DCs) and other actors. These include FR adjacent villages and TAWA as shown in Tables 24 and 25, respectively. Many boundary conflicts in LAFRs (95%) involve DCs and adjacent villages mainly due to encroachment for settlements and farms caused by unclear boundaries for most of the FRs.

Table 24: LAFRs with forest boundary conflicts (LGAs and forest adjacent villages) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Busale	Southern highlands	Mbeya	Kyela	1 and 2
2	Bushenya	Lake	Kagera	Missenyi	1 and 2
3	Gonja	Northen	Kilimanjaro	Same	1 and 2
4	Ikomelo	Southern highlands	Mbeya	Kyela	1 and 2
5	Kankoma	Northen	Kilimanjaro	Same	1 and 2
6	Kibwezi	Northen	Arusha	Arusha DC	1 and 2
7	Litehu	Southern	Mtwara	Tandahimba	1 and 2
8	Lugela	Southern highlands	Mbeya	Kyela	1 and 2
9	Masukulu	Southern highlands	Mbeya	Kyela	1 and 2
10	Nakaba	Southern highlands	Mbeya	Kyela	1 and 2
11	Sangeni	Northen	Tanga	Kilindi	1 and 2
12	Vumari	Northen	Kilimanjaro	Same	1 and 2
13	Ilemba	Southern highlands	Rukwa	Sumbawanga	3
14	Lyamba lyamba mfipa	Southern highlands	Rukwa	Sumbawanga	3
15	Masito	Western	Kigoma	Ivinza	3
16	Bujingwa	Lake	Mwanza	Kwimba	4
17	Kakora	Lake	Mwanza	Kwimba	4
18	Malambo	Lake	Simiyu	Bariadi	5

*KEY: 1 = Participatory forest boundary resurvey; 2 = Forest boundary consolidation; 3 = Preparation of Village Land Use Plan; 4 = Participatory resurvey and revise forest boundary by revoking part or whole reserve; and 5 = Complete the process of gazetting the FR.

Table 25: LAFRs with forest boundary conflicts (LGAs and TAWA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Usumbwa	Lake	Shinyanga	Kahama (Ushetu DC)	1

*KEY: 1 = Resurvey the boundaries in accordance with GN 442 of 1958

3.2.2.2 Forest resources ownership conflicts

The conflicts related to forest land ownership was also reported in many parts of the country. These conflicts are due to: 1) declaration of new protected area such as GCAs, GRs, NPs, VLFRs or WMAs within NFRs or LAFRs; and 2) establishment and registration of the villages within NFRs or LAFRs.

(i) Forest resources ownership conflicts in NFRs

These are conflicts that involve TFS and other actors. These include FR adjacent villages (as resource users), DCs, private companies, religion-based institutions, Ministry of Livestock and Fisheries Development, NCAA, TANAPA, TAWA, and VG as shown in Tables 26, 27, 28, 29, 30, 31, 32and 33. Many ownership conflicts involved TFS and TAWA (43%), followed by TFS and TANAPA (18%) and TFS and adjacent villages (16%). They are mainly due to encroachment by villagers for establishment of settlements and farms and establishment of GRs, GCAs, NPs and registered villages within FRs.

Table 26: NFRs with forest resource ownership conflicts (TFS and adjacent villages) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Mlali	Central	Dodoma	Kongwa	1
2	Nyantakara	Lake	Kagera	Biharamulo	1
3	South Maker	Western	Kigoma	Kasulu	1
4	Derema	Northern	Tanga	Muheza	2
5	Mogambo	Northern	Tanga	Mkinga	2
6	Jungu	Northern	Tanga	Kilindi	3
7	Nampekeso	Southern	Lindi	Kilwa	3

*KEY: 1 = Participatory resurvey of the forest boundaries so as to formalize areas highly degraded or legally owned by another actor; 2 = Compansate claimants accordingly; and; 4 = Enhance forest law enforcement (e.g. evicting people encroached the reserve).

Table 27: NFRs with forest resource ownership conflicts (TFS and DCs) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Korogwe Hill	Northern	Tanga	Korogwe	1
2	Usa Springs	Northern	Arusha	Arumeru	1

*KEY: 1= TFS should finalize gazettment process and retain ownership of the FR

Table 28: NFRs with forest resource ownership conflicts (TFS and private companies or religion-based institutions) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Magambazi	Northern	Tanga	Handeni	1 and 2
2	Marya Farm	Lake	Mwanza	Kwimba	1

*KEY: 1 = Participatory resurvey and revise forest boundary by revoking part of the FR; 2 = Investor should pay the required fee

Table 29: NFRs with forest resource ownership conflicts (TFS and Ministry of Livestock and Fisheries Development) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions
1	Mafia-mangrove	Eastern	Pwani	Mafia	1
2	Pande	Eastern	Dar es Salaan	Kinondoni	1
3	Tanga/Pangani-mangrove	Nothern	Tanga	Tanga	1

KEY: 1 = Inter sectorial meeting to resolve the conflict

Table 30: NFRs with forest resource ownership conflicts (TFS and NCAA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions
1	Northern Highland	Nothern	Arusha	Ngorongoro	1

KEY: 1 = Inter sectorial meeting to resolve the conflict

Table 31: NFRs with forest resource ownership conflicts (TFS and TANAPA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Kilimanjaro	Nothern	Arusha	Moshi, Hai, Rombo	1
2	Kilombero River	Eastern	Morogoro	Kilombero	1
3	Livingstone	Southern Highlands	Mbeya	Kyela and Rungwe and Nyasa	1
4	Marang	Nothern	Arusha	Karatu	1
5	Matandu	Eastern	Morogoro	Kilombero	1
6	Meru	Nothern	Arusha	Arumeru	1
7	Rubondo	Lake	Geita	Geita	1
8	Udzungwa Scarp	Eastern	Morogoro	Kilombero	1
9	W. Kilombero	Eastern	Morogoro	Kilombero	1

*KEY: 1 = Inter sectorial meeting to resolve the conflict

Table 32: NFRs with forest resource ownership conflicts (TFS and TAWA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Inyonga	Western	Katavi	Mlele	1
2	Itulu Hill	Western	Tabora	Sikonge	1
3	Kipengere	Southern Highlands	Njombe	Makete	1
4	Kisi	Southern Highlands	Rukwa	Nkasi	1
5	Loasi	Southern Highlands	Rukwa	Nkasi	1
6	Lukwati	Southern Highlands	Rukwa	Chunya	1
7	Mchonda	Southern	Mtwara	Nanyumbu	1
8	Mkungunero	Central	Dodoma	Kondoa	1
9	Mount Monduli	Nothern	Arusha	Monduli	1
10	Mpanda Line	Western	Tabora	Kaliua	1
11	Mpanda North East	Western	Katavi	Mpanda	1
12	Msangina	Western	Katavi	Mpanda	1
13	Mulele Hill	Western	Katavi	Mlele	1
14	Mwalye	Western	Kigoma	Uvinza	1
15	Ngindo	Eastern	Morogoro	Ulanga	1
16	North Undendeule	Southern	Ruvuma	Namtumbo	1
17	Nyahua - mbuga	Western	Tabora	Sikonge	1
18	Rungwa	Central	Singida	Manyoni	1
19	Rungwa River	Western	Tabora	Uyui	1
20	Swagaswaga	Central	Dodoma	Kondoa	1

*KEY: 1 = Inter sectorial meeting to resolve the conflict

Table 33: NFRs with forest resource ownership conflicts (TFS and VGs) and potential solution

SN	Forest name	Zone	Region	District	Potential soluions*
1	Sasawara	Southern	Ruvuma	Tunduru	1
2	Swangala	Western	Tabora	Sikonge	1

*KEY: 1 = Participatory resurvey of the forest boundaries so as to formalize areas legally owned by another actor

(ii) Forest resource ownership conflicts in LAFRs

These are conflicts that involveLGAs and other actors. Other actors include FR adjacent villages (as resource users), Township Authority, and TFS as shown in Tables34, 35 and 36, respectively. Many forest resources ownership conflicts (78%) involve LGAs and adjacent villages which are mainly due to encroachment for settlement and farming.

Table 34: LAFRs with forest resource ownership conflicts (LGAs and forest adjacent villages) and potential solution

SN	Forest name	Zone	Region	District	Potential soluions*
1	Kwasunga I	Northern	Tanga	Handeni	1
2	Kwasunga II	Northern	Tanga	Handeni	1
3	Runzewe	Lake	Geita	Bukombe	1
4	Talaga	Lake	Mwanza	Kwimba	1
5	Loliondo I	Northern	Arusha	Ngorongoro	2

*KEY: 1 = Revoke the FR; 2 = Participatory resurvey of the forest boundaries so as to formalize areas highly degraded or legally owned by another actor.

Table 35: LAFRs with forest resource ownership conflicts (LGA and Korogwe Township) and potential solution

SN	Zone	Forest name	Region	District	Potential soluions*
1	Northern	Lukoka	Tanga	Korogwe	1

*KEY: 1 = Transfer ownwership to TFS

Table 36: LAFRs with forest resource ownership conflicts (LGA and TFS) and potential solution

SN	Zone	Forest name	Region	District	Potential soluions*
1	Northern	Gelai	Arusha	Longido	1

*KEY: 1 = TFS retain ownership of the FR

3.2.2.3 Resources use conflicts

One of the elements of property rights in natural resources are a use rights that resource owner has over resource he/she owns. The use right is the right to derive benefit from the asset. It includes access (to enter the resource domain, e.g. the right to cross a piece of land, go into a forest) and withdrawal (to remove something, e.g. to take a bundle of firewood, fodder, or timber) (USAID, 2009). Also, the owner has management right (the right to decide who shall be permitted to use the asset and under which conditions), and exclusion right (to determine who else may use the resource).

The resource use conflicts are occurring in every FR in Tanzania but the extent varies across FRs. These conflicts involve forest owners and other actors mainly resource users (e.g. farmers and pastoralists) and institutions (e.g. TAWA, and the Mining Commission).

(i) Resource use conflicts in NFRs

These are conflicts that involve TFS and other actors. Actors include FR adjacent villages (as resource users), Mining Commission over the provision of mining license without consultation, and TAWA over the intention to build an office in the reserve as shown in Tables37, 38 and 39 respectively. Many of the resource use conflicts in NFRs (85%) involve TFS and adjacent villages which could be due to the high dependence of villagers on forest resources for their livelihood.

Table 37: NFRs with resource use conflicts (TFS and forest adjacent villages) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Bombo West	Northern	Tanga	Korogwe	1
2	Mkuti East	Western	Kigoma	Kasulu	1
3	Kilanzi Kitungulu	Southern Highlands	Iringa	Kilolo	3
4	New Dabaga Ulongambi	Southern Highlands	Iringa	Kilolo	3
5	Kitemele	Southern Highlands	Iringa	Kilolo	4
6	Pindiro	Southern	Lindi	Kilwa	4
7	Kilwa-mangrove	Southern	Lindi	Kilwa	5
8	Changandu	Northern	Tanga	Korogwe	6
9	Kawemba	Southern Highlands	Iringa	Kilolo	4 and 5
10	Ruhekei	Southern	Ruvuma	Nyasa	4 and 5

*KEY: 1 = Participatory resurvey of the forest boundaries so as to formalize areas legally owned by another actor; 2 = Forest boundary consolidation; 3 = Provision of environmental friendly income-generating activities to forest adjacent communities; 4 = Enhance forest law enforcement by evicting actors who reside in the FRs illegally; 5 = Participatory village land use planning to set aside village land into different land use categories; and 6 = Promote sustainable use of forest resources.

Table 38:NFRs with resource use conflicts (TFS and Mining Commission) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Nyanganje	Eastern	Morogoro	Kilombero	1

*KEY: 1= Compliance with existing laws and regulations

Table 39: NFRs with resource use conflicts (TFS and TAWA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Morogoro Fuelwood	Eastern	Morogoro	Morogoro	1

*KEY: 1 = Inter sectorial meeting to resolve the conflict

(ii) Resource use conflicts in LAFRs

These are conflicts that involve LGAs and other actors. Since LGAs have limited resources to enforce forest rules, conflicts over resource use involving forest adjacent communities were reported to be prominent and entailed encroaching the reserves for farming and settlement.

3.2.2.4 Revenue conflicts

Revenue related conflicts involve forest owners (TFS, LGAs and VGs) and other actors. There are also revenue sharing conflicts. These revenue conflicts in most cases are related to JFM particularly implementation of JFMA. JFMA defines percent of revenue that should be given to the adjacent villages from various sources. However, for most of FRs, the share of the revenue is not disbursed to villages. Likewise, parties involved in JFM highlighted lack of transparency on revenue generated. A good example is Amani NFR where JFMA is operational. The study conducted in Amani shows that the management had never disclosed information of revenue generated from tourism to its partners (villages).

Furthermore, there is a tendency of some villages to stump timber illegally harvested from general land and retain revenue e.g. some villages in Liwale District. Similarly, there are cases where timber buyers granted harvesting license in general land have used it to illegally harvest timber from VLFRs.

(i) Revenue conflicts in NFRs

These are conflicts that involve TFS and other actors. These include Antiquities Department, DCs, companies and groups, TAWA, Kondoa Water Authority as shown in Tables40, 41, 42, 43 and 44 respectively. Many conflicts involve TFS and companies/groups (30%), TFS and TAWA (30%) and TFS and DCs (23%).

Table 40: NFR with revenue related conflicts (TFS and Antiquities Department) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Irangi Scarp	Central	Dodoma	Kondoa	1

*KEY: 1 = Mechanism of sharing revenue or charging entrance fee in FR for tourists who visiting drawings

Table 41: NFRs with revenue related conflicts (TFS and DCs) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Mpanda North East	Western	Katavi	Mpanda, Mlele, and Nsimbo	1 and 2
2	Inyonga/Nyonga	Western	Tabora	Sikonge	1 and 2
3	Kyamawa	Lake	Kagera	Bukoba	1 and 2

*KEY: 1 = Participatory resurvey of the forest boundaries so as to formalize areas legally owned by another actor, and2 = Putting all foresters under the same management to avoid contradictions in revenue collections.

Table 42: NFRs with revenue related conflicts (TFS and company and groups) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Kome	Lake	Mwanza	Sengerema	2
2	Maisome	Lake	Mwanza	Sengerema	2
3	Mulele Hill	Western	Katavi	Mpanda, Mlele and Nsimbo	1
4	Nawenge	Eastern	Morogoro	Ulanga	1

*KEY: 1= Compliance with existing laws and regulations; 2 = Amendment of GN No.255 of 28th July 2017 to reduce the camping fees and enable the camp owners to pay the fees.

Table 43: NFRs with revenue related conflicts (TFS and TAWA) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Inyonga/Nyonga	Western	Tabora	Sikonge	1
2	Mpanda North East	Western	Katavi	Mpanda, Mlele, and Nsimbo	1
3	Mulele Hill	Western	Katavi	Mpanda, Mlele and Nsimbo	1
4	Rungwa River	Western	Katavi	Mlele	1

*KEY: 1 = Introduction of mechanism for sharing cost and revenues collected by other institutions from FRs (e.g. hunting fee collected by TAWA for tourist hunting in hunting blocks).

Table 44: NFRs with revenue related conflicts (TFS and Kondoa Water Authority) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Chemi chemi	Central	Dodoma	Kondoa	1

*KEY: 1= Compliance with existing laws and regulations

(ii) Revenue conflicts in LAFRs

These are conflicts that involveLGAs (DCs) and other actors. These include TFS and hunting companies and DCs over entrance fee and forest resource use fee respectively in the reserve as shown in Tables45, and 46, respectively.

Table 45: LAFRs with revenue related conflicts (LGAs and TFS) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Mpunze	Lake	Shinyanga	Kahama (Ushetu DC)	1
2	Ushetu/Ubagwe	Lake	Shinyanga	Kahama (Ushetu DC)	1
3	Usumbwa	Lake	Shinyanga	Kahama (Ushetu DC)	1

*KEY: 1 = Putting all foresters under the same management to avoid contradictions in revenue collections.

Table 46: LAFRs with revenue related conflicts (LGAs and hunting companies) and potential solution

SN	Forest name	Zone	Region	District	Potential solutions*
1	Kitumbeine	Northern	Arusha	Longido	1
2	Longido	Northern	Arusha	Longido	1

*KEY: 1= Compliance with existing laws and regulations

3.3 Criteria for changing forest ownership or management objectives or management status

The forest sector in Mainland Tanzania is vested with the responsibility of managing forest resources sustainably. The overall goal of the National Policy is to enhance the contribution of the forest sector to sustainable development and conservation and management of natural resources for the benefit of the present and future generations (URT, 1998). Accordingly, where deemed necessary, ownership, management objective or status of forests may be changed in order to ensure that forests contribute to the sectoral goals.

3.3.1 Criteria for changing forest ownership

Changing ownership type means transferring owner's rights (e.g. access, exclusion, and rule making) and owner's duties (e.g. management responsibilities) from one individual or institution to another. Based on literature review, data analysis and opinions from consulted stakeholders the study recommends 6 criteria to be used when there is a need for changing forest ownership (Table 47). Criteria are ranked in the order of importance; 1st being the most important and 6th being the least important to be considered during decision-making process on whether to change ownership or not.

Identified criteria are divided into two categories: 1) those that apply to forest owner, and 2) those that apply to the forest. However, since forest management requires a large investment in terms of funds to develop forest management infrastructures and facilities, thus criteria that apply to forest owner may also be applied to institutions or individuals intending to

take over forest ownership. In this regard, a decision to transfer ownership of the forest should not be done without a basis; instead, it should be based on concrete information on capacity (financial resources, human resources and infrastructures, and facilities) and consent from the owner and recipient, and the ecological values and status of the forest. Change/ transfer of ownership of FR from VG to CG should consider the criteria listed in Table 47.

Table 47: Criteria for changing forest ownership

SN	Criteria for changing forest ownership	Rank
1	The capacity of the forest owner or recipient to undertake forest management activities and to ensure sustainable management of the forest, in terms of: ♦ Financial resources; ♦ Human resources; and ♦ Infrastructures and facilities.	1
2	Current status of the forest - what is the current status of the forest and its management in terms of: ♦ Forest condition – good condition, degraded or deforested; ♦ Existing forest management in implementing forest management plan – good or weak; and ♦ Existing threats facing the forest – the presence of illegal activities.	2
3	The ecological value of the forest -the role and function of forest in terms of: ♦ Biodiversity value; ♦ Species endemism; ♦ Catchment value; ♦ Potential of the forest for beekeeping; ♦ Potential of the forest for carbon sequestration; and ♦ Potential of the forest for wildlife habitat and or wildlife corridor.	3
4	Consent of the forest owner to transfer ownership to another entity for better management of the forest	4
5	Socio-economic and cultural values of the forest to the forest owner - whether the change of ownership may affect socio-economic and cultural benefits accrued by the owner, including: ♦ Economic value – i.e. revenue from sale of the forest products and services; ♦ Social values – i.e. importance of the forest for subsistence or health needs; and ♦ Cultural value – i.e. importance of the forest for rituals or worship.	5
6	Government decision over the forest to safeguard the National, Regional and global interests	6

The study further recommends that for any VLFR to be transferred to CG, at least three criteria should be met, including seeking consent of the VG (i.e. villagers through Village Assembly). Seeking consent of the village in changing ownership of VLFR is important because of the following:

- Setting aside VLFR is one of several land-use options that villagers may opt. Therefore, upgrading or changing ownership of the VLFRs may cause problems and make the process of creating new VLFRs difficult or even impossible in the future; and
- Some VLFRs have significantly contributed to improved livelihoods; hence changing ownership of such a forest may affect livelihoods and other accrued benefits.

3.3.2 Criteria for changing management objectives

Forest management objectives simply refer to the goal of managing the forest. In Mainland Tanzania, forests are managed for protection, production or both protection and production. There are also few cases where FRs is managed for research purposes. Protection forests are also known as catchment forests. These are forests managed primarily to protect water sources, to protect the land from soil erosion, to protect biodiversity and cultural values, restrict natural calamities and regulate climate, thus contributing to environmental protection. On the other hand, production forests are used mainly for production and trading of timber and non-timber forest products (NTFPs) in combination with protection. These include natural production forests and planted production forests.

Forest management objective is not permanent; it changes with time depending on the interest of the forest owner. The forest management objective is stated in the Forest Management Plan (refer to Part III, Section 2 of the Forest Act Number 4 of 2002). Thus, forest management objective may change from time to time; from protection to production and vice versa. A decision to change forest management objective is vested in the forest owner. The decision to change management objective should consider several criteria so as to ensure sustainability of the forest. Based on literature review, data analysis and opinions from consulted

stakeholders, the study recommends 5 criteria to be used when there is a need for changing management objectives (Table 48).

Table 48: Criteria for changing forest management objective

SN	Criteria for changing forest management objective	Rank
1.	Ecological value of the forest -whether the current ecological value of the forest justifies the need to change management objective or not: ♦ Biodiversity value; ♦ Catchment value; ♦ Potential of the forest for beekeeping; ♦ Potential of the forest for carbon sequestration; and ♦ Potential of the forest for wildlife habitat and or wildlife corridor.	1
2.	Current status of the forest - whether the current status of the forest is compatible with a new management objective: ♦ Forest condition (growing stock, degraded, deforested); and ♦ Nature of the terrain – i.e. steep slope, flood plain	2
3.	Socio-economic and cultural value – whether a change of management objective will ensure the following: ♦ Economic value – i.e. revenue from sale of the forest products and or services; ♦ Social values – i.e. access to the forest for subsistence or health needs; and ♦ Cultural value – i.e. access to the forest for rituals or worship.	3
4.	Capacity of the forest owner/manager to cover costs related to the new management objective, in terms of: ♦ Financial resources; ♦ Human resources; and ♦ Infrastructures and facilities.	4
5.	Consent of the forest owner/manager to change forest management objective	5

3.3.3 Criteria for changing management status

Changing forest management status in this context refers to altering status of the forest; from unreserved forest to FR or from FR to nature FR and vice versa. Unreserved forests are forests that are not legally managed hence no management objective. They are mainly found on

the village and general land. These forests are usually open access and easily subjected to unsustainable practices such as agricultural expansion (including shifting cultivation), wild fires, livestock grazing and illegal harvesting of trees for building materials (e.g. timber, poles,and withes) and fuelwood production.

FRs are declared or gazetted in accordance with Forest Act No 14 of 2002 or any other Act for the purpose of protecting the environment or sustainable utilization of forest resources. These include FRs that are under CG (i.e. NFRs), LGAs (i.e. LAFRs) and reserved forests in the village lands namely VLFR, CFRs and PFs. FRs can be for protection, production or both (production and protection). Each reserved forest has management objective that defines activities which are allowed to be carried out and those that are restricted by the Forest Act or bylaws.

According to the Forest Act No 14 of 2002, nature FR is a category that offers the highest level of protection. Unlike ordinary FRs, within nature FRs no extraction of woody or animal species is allowed, activities are generally restricted to research, education and nature-based tourism. Currently, all nature reserves are state-owned and are managed by TFS.

Forests in Tanzania cover 48.1 million ha that comprises reserved and unreserved forests under different ownership. Out of 48.1 million ha, 31,458,963 ha are on village land of which 1,356,759.4 ha are under effective management as the VLFRs owned and managed by VGs. The rest are unreserved forests (open access). Also, there are 3,054,719 hectares on general land that is unreserved under TFS and LGAs. The unreserved forests on the village and general lands are not effectively managed. Securing unreserved forests is most important for expansion and connecting protected areas. The Forest Act No 14 of 2002 provides different options of securing these forests: 1) through the declaration of NFRs or LAFRs; and 2) establishment of community forests through Community Based Forest Management (CBFM). Besides forest law, wildlife law has a provision that allows the establishment of the state-owned wildlife reserves (e.g. GRs and GCAs), and WMAs that are owned and managed by VGs.

State-owned FRs can be upgraded to nature FRfor the aim of enhancing protection of forest resources. This is due to the fact that forest and nature reserves are administered differently. Immediate incharge of FRs in the District is the DFM who is also the overseer of unreserved forests on general lands and regulating the trading of forest products. Management of each nature reserve is vested in the Conservator whose focus is only on that specific forest. The study recommends five criteria to be used when there is a need forchanging forest status (Table 49).

Table 49: Criteria for changing forest management status

SN	Criteria for changing forest management status	Rank
1.	Ecological value of the forest -whether the current ecological value of the forest justifies the need to change management status or not: ♦ Biodiversity value; ♦ Catchment value; ♦ Potential for beekeeping; ♦ Potential of the forest for carbon sequestration; and ♦ Potential of the forest for wildlife habitat and or wildlife corridor.	1
2.	Current status of the forest - whether the current forest status is compatible with a new management status: ♦ Forest condition; ♦ Existing threats to the forest; and ♦ Nature of the terrain – i.e. steep slope, flood plain.	2
3.	Capacity of the forest owner/managerto execute new roles and responsibilities under new management status, in terms of: ♦ Financial resources; ♦ Human resources; and ♦ Infrastructures and facilities.	3
4.	Socio-economic and cultural value – change of management status should consider: ♦ Economic value – i.e. revenue from sale of the forest products and services; ♦ Potential of the forest for eco-tourism;	4
	♦ Social values – i.e. access to the forest for subsistence or health needs; and ♦ Cultural value – i.e. access to the forest for rituals or worship.	
5.	Consent of the forest owner to change forest management status.	5

3.4 Recommendations on changing forest ownership, management objectives and status

3.4.1 Recommendations on changing forest ownership

The study recommends changing all LAFRs from LGAs to CG under TFS. The recommendation is based on three criteria (i.e. criteria 1, 2 and 4). LGAs has insufficient resources to manage FRs; some LAFRs are highly degraded, have no forest management plan and are facing with several challenges such as encroachment, grazing, and charcoal production. Besides, District Forest Officers (DFOs) who are managing forests on behalf of the DC) have shown their consent.

The recommendation is also in line with DFOs' opinion given during the interview. More than half of the DFOs had admitted that LGAs have no sufficient resources to manage LAFRs properly. For the same reason, some DCs have requested TFS to take over management of the LAFRs. For instance, in 2018 Regional Commissioner of Ruvuma Region with six DCs wrote a letter to hand over all LAFRs to TFS. Similarly, in Singida Region, Regional Consultative Committee meeting held in 2019 unanimously had agreed to hand over all LAFRs in the region to TFS.

3.4.2 Recommendations on changing management objective

Two forest management objectives are recognised in the current Forest Act (2002): protection and production. The distribution of forest management objectives in terms of counts and size/area is provided in Table 6.

The study recommends the following changes to management objectives:

1. The study recommends changing management objective of one NFR from protective to productive (Table 50). The recommendation is supported by four criteria (criteria 2, 3, 4 and 5). The NFR has higher growing stock; forest adjacent communities have higher demand of forest produce and that, TFS is capable to cover costs for managing the FR in accordance with the new objective. Besides, TFS is willing to change objective.

Table 50: NFRs to be changed from protective to productive FRs

SN	Forest Name	Zone	Region	District	Size(ha)
1	Kilwa-mangrove	Southern	Lindi	Kilwa	36,737.0
				Total	***36,737.0***

2. The study recommends changing management objective of nine NFRs from productive to protective FRs because currently the forests are highly degraded therefore cannot be harvested; TFS is capable of meeting management costs for the new objective and willing to do such changes (Table 51).

Table 51: NFRs to be changed from productive to protective FRs

SN	Forest Name	Zone	Region	District	Size (ha)
1	Changandu	Northern	Tanga	Korogwe	6,746.0
2	Mwenga	Northern	Tanga	Korogwe	1,159.0
3	Ndolwa	Northern	Tanga	Korogwe	1,173.8
4	Kungwe Bay	Western	Kigoma	Uvinza	5,928.0
5	Uvinza	Western	Kigoma	Uvinza	16,835.0
6	North Makere	Western	Kigoma	Kasulu	78,995
7	Rungwa River	Western	Katavi	Mlele	401,448.2
8	Nyantakara	Lake	Kagera	Biharamulo	29,332.0
9	Ijogo	Central	Dodoma	Kongwa	327.0
				Total	***541,944.0***

3. The study recommends changing management objective of nine NFRs from either protective or productive natural FRs to plantations (productive) (Table 52). The proposed changes are supported by the fact that, the FRs has low growing stock that does not support further extraction of forest products; TFS is capable of managing the FRs with the new management objective and willing change as proposed (Table 52).

Table 52: NFRs to be changed from natural protective or productive to plantation FRs

SN	Forest Name	Zone	Region	District	Size (ha)
1	Geita	Lake	Geita	Geita	50,836.0
2	Rwamgasa	Lake	Geita	Geita	28,160.0
3	Ziwani	Southern	Mtwara	Mtwara	687.0
4	Kahe I	Northern	Kilimanjaro	Moshi	884.2
5	Mohoro	Eastern	Pwani	Rufiji	2,349.0
6	Mohoro River	Eastern	Pwani	Rufiji	48.6
7	Shikurufumi	Eastern	Morogoro	Mvomero	259.8
8	Biharamulo-Kahama	Lake	Kagera and Geita	Biharamulo, Bukombe and Chato	134,680.0
9	Usindakwe	Lake	Geita	Geita	450.0
Total					***218,354.6***

4. The study recommends changing management objective of five LAFRs from natural protective to plantation FRs (productive) due to the following reasons: the FRs has low ecological value; low growing stock and high rate of deforestation and degradation and lastly the LGAs are willing to change the management objective (Table 53).

Table 53: LAFRs to be changed from protective to plantation FRs

SN	Forest name	Zone	Region	District	Size (ha)
1	Mwanhala	Western	Tabora	Nzega	2,849
2	Ngukumo	Western	Tabora	Nzega	2,590
3	Ruande	Lake	Geita	Geita	15,550
4	Miyenze	Lake	Geita	Nyang'wale	8,988
5	Bushenya	Lake	Kagera	Missenyi	6,475
Total					**36,452**

5. The study also recommends changing management objective of one LAFRs from productive to protective FRs due to the following reasons: the FR has low growing stock that does not support further extraction of forest products; and the owner is willing to change management objective (Table 54).

Table 54: LAFRs to be changed from productive forest to protective forest

SN	Forest name	Zone	Region	District	Size (ha)
1	Karitu	Western	Tabora	Nzega	37,556
Total					**37,556**

3.4.3 Recommendations on changing forest management status

The study recommends changes on forest status, such changes entails upgrading and revoking of FRs. It should be noted that the power to revoke FRs is described in Part IV Section 29 (powers to alter and de-reserve a FR) of the Forest Act No. 14 of 2002:

1. The study recommends changing status of 29 National FRs to National nature FRs based on the following reasons (criteria 2, 3, 4 and 5): the FRs have relatively higher ecological value; face limited challenges; are potential for eco-tourism; TFS is willing to change status of the FRs and capable of meeting management costs for the new management (Table 55). It should be noted further that some FRs are too small to as stand-alone nature FRs hence such FRs may be combined with others or combined with the existing nature FRs depending on viability in terms of proximity and management operations.

Table 55: National FRs to be upgraded to National Nature FRs

SN	Forest name	Zone	Region	District	Size (ha)
1	Uzigua	Eastern	Pwani	Bagamoyo (Chalinze)	24,722.2
2	Kazimzumbwi	Eastern	Pwani	Kisarawe	4,862.0
3	Nyanganje	Eastern	Morogoro	Kilombero	18,987.4
4	Iwonde	Eastern	Morogoro	Kilombero	14,748.4
5	Ruvu	Eastern	Morogoro	Morogoro	3,093.4
6	Nawenge	Eastern	Morogoro	Ulanga	134.4
7	Mselezi	Eastern	Morogoro	Ulanga	770.5
8	Sali	Eastern	Morogoro	Ulanga	983.0
9	Myoe	Eastern	Morogoro	Ulanga	93.1
10	Kungwe Bay	Western	Kigoma	Uvinza	5,928.0
11	Mwalye	Western	Kigoma	Kibondo	401,448.2
12	Rungwa River	Western	Katavi	Mlele	401,448.2
13	Kandale/Kantale	Lake	Kagera	Missenyi	70.3
14	Nou	Central	Manyara	Babati	13,520.0
15	Hasama Hill	Central	Manyara	Mbulu	4,856.0
16	Mount Monduli	Northern	Arusha	Monduli	8,900.0
17	Bamba Ridge	Northern	Tanga	Mkinga	1,109.0
18	Kwamgumi	Northern	Tanga	Mkinga	1,148.9
19	Segoma	Northern	Tanga	Mkinga	1,506.0
20	Derema	Northern	Tanga	Kilindi	3,928.0
21	Nguru North	Northern	Tanga	Kilindi	14,041.5
22	Derema	Northern	Tanga	Muheza	966.0
23	Kimboza	Eastern	Morogoro	Morogoro	384.9
24	Mahenge Scarp	Eastern	Morogoro	Ulanga	386.9
25	Uvinza	Western	Kigoma	Uvinza	16,835.0
26	Kiikuru	Lake	Kagera	Missenyi	7,296.1
27	Tongwe East	Western	Katavi	Mpanda	168,415.20
28	Tongwe West	Western	Katavi	Mpanda	365.0
29	Mpanda Line	Western	Tabora	Kaliua	427,348.0
Total					***1,548,295.6***

2. The study recommends changing status of four NFRs from FRs to other land uses (i.e. revoke). This is supported by the following reasons (criteria 1, 2, 4 and 5): the FRs has very low or no ecological value; have very low or no growing stock because such areas are

presently used for farming and settlements; forest cover can no longer be restored. Besides, TFS is willing to revoke the FRs and options like eviction have political implications and may cause conflicts with communities (Table 56).

Table 56: NFRs to be changedfrom FR to other land uses (settlement, farmland and others)

SN	Forest name	Zone	Region	District	Size (ha)
1	Marya farm	Lake	Mwanza	Kwimba	108.0
2	Mafleta	Eastern	Morogoro	Mvomero	1,025.5
3	Mbogo	Eastern	Morogoro	Mvomero	216.5
4	Mwalye	Western	Kigoma	Kibondo	401,448.2
Total					***402,798.2***

3. The study recommends changing status of eight LAFRs from FRs to other land uses (i.e. farmland, settlement etc). This is based on the fact that (criteria 1, 2, 4 and 5): the FRs have very low ecological value; very low or no growing stock since they have been converted to farmlands and settlements; LGAs does not intend to make rehabilitation/restoration initiatives (Table 57).

Table 57: LAFRs to be changed from FR to other land uses (settlement, farmland and others)

SN	Forest name	Zone	Region	District	Size (ha)
1	Bujingwa	Lake	Mwanza	Kwimba	25.2
2	Ihanga	Eastern zone	Morogoro	Kilombero	3,466.9
3	Kakora	Lake	Mwanza	Kwimba	4.0
4	Kwasunga I	Northern	Tanga	Handeni	237.9
5	Kwasunga II	Northern	Tanga	Handeni	1,627.0
6	Nyakabindi	Lake	Simiyu	Bariadi	45.0
7	Runzewe	Lake	Geita	Bukombe	32,375.0
8	Talaga	Lake	Mwanza	Kwimba	43.3
Total					***37,824.3***

4. The study also documented eighty-two (82) unreserved forests (see Appendix 42) which either falls on village or general lands. Such unreserved forests have high ecological value, have high growing stock and limited challenges; higher socio - economic and cultural values. Therefore, the study recommends that the 82 unreseved forests to be converted to NFRs or VLFRs.

A decision on whether unreserved land to be upgraded to NFR or VLFR should be done in a participatory manner. A process should be in accordance with Part IV Section 23 (procedures for declaration of National FR) and Section 33 (preliminary steps by the village council to create and manage village land FR) of the Forest Act Number 14 of 2002).

3.5 Forest administration and strategies to improve forest management in Mainland Tanzania

Forest administration entails Policies, Policy development and strategies for achieving Policy objectives. SFM has been the central aim of National Forest Policies overtime. This is in line with the Constitutional obligation that, the State and all its organs to ensure that the natural resources and heritage are harnessed, preserved and applied to the common good of Tanzanians [(Article 9(1) (c)]. Accordingly, successful Policy implementation relies on efficiency and effectiveness of institutions responsible for the management of forest resources.

History shows that the Departments responsible for managing NFRs and BRs in Mainland Tanzania have changed over time and have been moving from one Ministry to another (Table 58). It is till 1995 when both forestry and beekeeping were put under the same Department (i.e. FBD) and housed in the MNRT. These changes probably aimed to find the best institutional set-up that would enhance coordination and cooperation between the Forest Department and forest-related sectors, and therefore improve management of forest and bee resources.

Table 58: Placement of forest department under different ministries

Dates	Status
1899 - 1918	Local forest bureau (Forstverwaltung)
1918 - 1959	Forest Department (Independent Department) under British Administration
1949 -1971	Beekeeping Department - Ministry of Agriculture
1959- 1960	Forestry Department - Ministry of Natural Resources
1960 - 1961	Forestry Division - Ministry of Agriculture and Co-operative Development
1961-1963	Forestry Division - Ministry of Lands, Forests,and Wildlife
1964 - 1966	Forestry Division - Ministry of Agriculture, Forests,and Wildlife
1967 - 1969	Forestry Division - Ministry of Agriculture, Food and Cooperatives
1970 - 1979	Forestry Division - MNRT
1971 - 1977	Beekeeping Section - Department of Forestry, Ministry of Natural Resources
1977 - 1980	Beekeeping Section - Department of Wildlife, Ministry of Natural Resources
1980-1981	Forestry Division - Ministry of Livestock and Natural Resources
1980 - 1984	Beekeeping full Department - MNRT
1985 - 1986	Forestry and Beekeeping Division - MNRT
1986 - 1990	Forestry and Beekeeping Division - Ministry of Lands, Natural Resources and Tourism
1991-1994	Forestry and Beekeeping Division - Ministry of Tourism, Natural Resources and Environment
1995 - 2010	Forestry and Beekeeping Division - MNRT
2011 - To Date	Tanzania Forest Services (TFS) Agency

Source: TFS establishment order (GN No. 269 published on 30/7/2010)

The roles and responsibilities of FBD, among others, were to manage FRs including forest plantations, BRs and apiaries; and rehabilitation of degraded areas. However, FBD generally could not produce satisfactory results in terms of improving forest conditions. The assessment of forests conditions in Tanzania revealed a lot of human disturbances both within and outside FRs (Malimbwi *et al*., 2005). Reasons for unexpected results are many, including inherited institutional set–up (i.e. multiplicity in the management responsibilities under different institutional

mandates and arrangements) and limited financial resources allocated to the Department to manage FRs. As a result, the Department failed to recruit new foresters and supporting staff (i.e. labour force), develop infrastructure and purchase equipment and materials needed to support forest management.

3.5.1 Devolution of power by the Director of FBD to TFS

One way of achieving SFM is through organizational reforms. Following the Government reforms under the Public Service Reform Programme, TFS was established to take over some of the operational roles and functions of FBD. The mandate of TFS is to manage NFRs (natural and plantations), BRs and forest and bee resources on general lands. The establishment of the TFS as an Executive Agency aimed to enhance the management and conservation of forest and bee resources for sustainable supply of quality forest and bee products and services. The FBD remained with the responsibilities of development of the Forest Policy, laws and regulations and overseeing their implementation in the sector. Transfer of some operational roles and functions on forest management from FBD to TFS was important because it provides checks and balances.

The study reviewed the roles and responsibilities of the FBD and TFS to find out whether there are overlapping or conflicting responsibilities and assessed whether the process was adequate and contributes to intended outcomes. Box 1 presents the role and responsibilities of TFS and FBD.

Box 1: Role and responsibilities of TFS and FBD

The roles and responsibilities of FBD before the formation of TFS:

(i) Policy and legislation development and enforcement;
(ii) Monitoring and evaluation of Policy implementation;
(iii) Human resources development;
(iv) Management of Forestry and Beekeeping training institutions;
(v) Management of FRs including forest plantations, BRs, and apiaries;
(vi) Rehabilitation of degraded areas;
(vii) Provision of forest and beekeeping extension services;
(viii) Management of forest and bee resources in general lands, and
(ix) Identification of research areas, prioritization, and coordination of research undertaken by various institutions and organizations.

The roles and responsibilities of FBD in the National Forest and Beekeeping Policies after the formation of TFS are:

(i) Development of Policy and Legislation,
(ii) Monitoring and Evaluation of Policy implementation;
(iii) Supervision of law enforcement in the sector;
(iv) Coordination of training of forestry and beekeeping professionals;
(v) Management of forestry and beekeeping training institutions;
(vi) Identification of research areas, prioritization,and coordination of research undertaken by various institutions and organizations in Forestry and Beekeeping Sector; and
(vii) Coordination of tree planting and forest and beekeeping extension services

The Roles and responsibilities of TFS:

(i) Establishing and managing National natural forest and BRs;
(ii) Establishing and managing National forest plantations and apiaries;
(iii) Managing forest and bee resources in general land;
(iv) Enforcing Forest and Beekeeping legislation in areas of TFS jurisdiction;
(v) Providing forest and beekeeping extension services in areas of TFS jurisdiction;
(vi) Developing TFS human resources;
(vii) Collecting Forest and Beekeeping revenue;
(viii) Safeguarding TFS assets; and
(ix) Marketing of forest and bee products and services.

The study found that, existing roles and responsibilities of the FBD and TFS seem to be different and no overlap between them. However, in practice TFS execute some roles and responsibilities which are beyond her jurisdiction. Such roles and responsibilities identified during stakeholder consultation were:

- Provision of guidelines (TFS has been providing various guidelines);

- Provision of the permits; and
- Preparation and approving NFR management plans.

Consequently, other forest stakeholders consider TFS to have three roles that are conflicting:

- Conservation (as a conservator),
- Formulation and enforcement of regulation (as a regulator), and
- Trade (as a trader of forest produce).

Therefore, the studyrecommends that TFS should implement its roles as stated in Section 2.0 (Status and governance), in particular, sub section 2.1 (Declaration of Agency Status) of Executive Agencies (TFS) Establishment Order (GN 269 of 30/7/2010). The study further recommends that FBD roles should be stated clearly for the purpose of avoiding confusion as proposed and presented in Box 2.

Box 2: Proposed FBD roles

Proposed FBD roles

(i) Development of Policy and legislation,
(ii) Issuing forest management and utilization guidelines (e.g. CBFM guidelines, guidelines for the preparation of forest management plansincluding harvesting plans, harvesting guidelines, guidelines for forest inventory, guidelines for methods of charcoal production 1, and etc.),
(iii) Monitoring and evaluation of Policy implementation;
(iv) Supervision of law enforcement in the sector,
(v) Coordination of training of forestry and beekeeping professionals,
(vi) Management of forestry and beekeeping training institutions,
(vii) Coordination of tree planting and forest and beekeeping extension services,
(viii) Coordination of establishment of forest and BRs, and
(ix) Approving forest management plan for public and private forests, and cause harvesting plan to be prepared in all productive forests on the village and general lands.

FBD needs sufficient financial and human resources to implement its new roles and responsibilities efficiently. Currently, the Division is severely constrained by having insufficient human and financial resources. The study calls for the improved status of the current staff in-terms of number and qualifications. In addition, for the efficiency coordination of the forest

sector, FBD requires infrastructure, tools, and equipment. These include vehicles for field work (preferably Land Cruiser Hard top), Laptop, GPS, GIS software. Also, while the FBD will not be able to recruit staff up to District level, the use of TF involving technical staff from other institutions such as Universities, research centers and relevant NGOs for special tasks such as monitoring and evaluation of Policy implementation as well as supervision of law enforcement can be used especially when a wide coverage is required. Accordingly, the study recommends that, FBD responsibilities of preparing/revising of guidelines, monitoring and evaluation of Policy implementation as well as supervision of law enforcement in the sector should be financed by TaFF since among other the Fund aims to support sustainable use of forest resources. Supervision of law enforcement should be done at least twice annually while monitoring and evaluation of Policy implementation should be done twice within five-year period.

Furthermore, the study observed that one role of FBD "*Identification of research areas, prioritization and coordination of research undertaken by various institutions and organizations in Forestry and Beekeeping Sector*" is also listed among the roles and responsibilities of TAFORI. Since TAFORI is the government institution responsible to coordinate forest research in Tanzania, it isrecommended that such role to be performed by TAFORI, instead of FBD.

3.5.2 Transformation of TFS agency into an authority and paramilitary

In 1998 the Tanzanian government instituted a new Forest Policy which introduced PFM aimed at devolving power related to manage forest resources to lower level (villages). In 2002, Forest Act No. 14 was enacted that apart from providing legal backup on devolution of power to villages, Section 27 provided a room for management of National forest using an Executive Agency for the purpose of achieving SFM. Tanzania Forest Service (TFS) Agency was established in 2010 under GNN 269 published on 30/7/2010. TFS took all forest management responsibilities with the expectation that such an institutional set up would enhance management

of CG forests by addressing challenges that were faced by FBD. TFS has succeeded to some extent, for instance, over the past seven financial years (2011/12 –2017/ 18) of the implementation of Strategic Plan I and II, TFS has managed to increase revenue collection every year.

Unfortunately, the establishment of TFS did not change the institutional set-up of forest management in Mainland Tanzania. Like FBD era, forest resources in Tanzania are still administratively managed under two ministries: CG under the MNRT (MNRT), and LGA under PO-RALG. More than half of total forest cover (i.e. 53%) falls on land are managed by LGA (District and village councils) while MNRT through TFS, TANAPA, NCA, and TAWA manage about 40% and the remaining 7% are under private sector. Presence of multiple institutions with different capacities has created challenges in managing forest resources efficiently and effectively. Some of the challenges have been discussed in section 3.2.1, and others include:

- The fragmented/uncoordinated efforts – each authority implement forest management activities on its own,
- Limited abilities and flexibilities to promptly respond to emerging issues, and
- Parallel administrative chain of command.

Therefore, there is an urgent need to change the way forests are managed in Mainland Tanzania. This can be achieved by establishing a formal body under the Ministry and responsible for the management of all forests. The establishment of a formal body will involve collapsing existing institutional set-up by transferring forest ownership and/or management rights, and staff from LGAs to CG. This study supports the ongoing process of transforming TFS to the proposed Tanzania Forestry and Beekeeping Authority (TFBA) under the MNRT. The study conducted a Strength, Weakness, Opportunities, and Challenges (SWOC) analysis on the transformation of TFS to authority and paramilitary (see Tables 59 and 60). The MNRT can take advantage of identified strengths and opportunities while addressing the identified weaknesses and challenges so as to establish an effective and efficient paramilitary authority for sustainable management of forest resources in the country.

Table 59: Strength, Weakness, Opportunities, and challenges on transformation of TFS to an Authority

	Factors within TFS that are likely to lead to positive change	Factors which may compromise further improvement of the TFS to achieve positive change
Inside TFS (Internal attributes)	Strengths (i) Having diverse sources of revenue such as natural forests, plantations, BRs and tourism attractions making it financially independent; (ii) Having the experience to manage National forest and BRs; (iii) Having good collaboration with ot her stakeholders, including LGAs; (iv) Having a good system in place for revenue collection from forest goods and services; (v) Having infrastructures and facilities needed to support forest management all over the country; (vi) Having an organization structure that goes down to District level; (vii) Existing collaboration with forest adjacent villages in forest management through JFM arrangement; (viii) Presence of Monitoring and Evaluation system.	Weakness (i) Inadequate budget to facilitate effective implemention of planned forest management activities; (ii) Low commitment among TFS staff which may constraint successful implementation of planned activities; (iii) Slow implementation process of TFS income generating strategies e.g. expansion of plantations; (iv) Dependence on unsuitable sources of revenue such as issuing harvesting license in natural forests and fines from illegal activities; (v) Inadequate working tools/equipment; (vi) Insufficient number of staff who can effectively implement planned activities; (vii) Low production of bee products; (viii) Lack of an effective business plan so as to ensure sustainable generation of the fund; (ix) Weakness in revenue collection hence sustantial forest revenue is not collected; (x) Poor succession plan i.e. Presence of many employees who are about to retire;

	Factors within TFS that are likely to lead to positive change	Factors which may compromise further improvement of the TFS to achieve positive change
		(xi) Presence of much unprofessional staff (primary education); (xii) Some foresters are corrupt and affect revenue collection; (xiii) Selling unprocessed logs which fetch low price; (xiv) Weakness of the marketingSection of the TFS to market TFS and ecotourism attractions.
Outside TFS (external attributes)	Opportunities (i) Presence of foresters in LGAs who can be transferred to CG/authority; (ii) Availability of land, including highly degraded FRs and village land to be acquired from villages for the establishment of new plantations; (iii) Presence of attractions in forest and nature reserves for eco-tourism; (iv) Presence of many sources of revenue such as PES (Water), entrance fee in hunting blocks within FRs and fee from infrastructures installed in FRs; (v) Increased production of less or non destructive forest produce mainly NTFPs such Gum Arabica, bee products, sandal wood; (vi) Increasing demand for forest produce such as timber; (vii) Possibility of selling value-added forest products;	Challenges (i) Resistance to adopting some changes especially those concerning the change of forests ownership; (ii) Existing employment system controlling the recruitment of staff needed to fill the gap; (iii) Climate change may affect wood and honey production; (iv) Presence of multiple institutions owning and managing forests (i.e. forest ownership); (v) Increasing drivers of deforestation and forest degradation within and outside FRs (e.g. livestock grazing, illegal harvesting for charcoal, timber); (vi) Higher cost of running an authority; (vii) Political interference; (viii) Presence of many institutions that collect revenue from the forest resources; and (ix) Presence of many resource ownership and use conflicts;

	Factors within TFS that are likely to lead to positive change	Factors which may compromise further improvement of the TFS to achieve positive change
	(vi) Increasing demand for forest produce such as timber; (vii) Possibility of selling value-added forest products; (viii) Presence of forestry and beekeeping institutions producing well-trained professionals; and (ix) Presence of unreserved forests that can be reserved; (x) Ongoing process of Forest Policy revision and the subsequent revision of Forest Act; (xi) Presence of political will on the establishment of an Authority; (xii) Complete the devolution process: ♦ Director of FDB devolve power to enter into JFMA as provided for under Section 16 of the Forest Act to CE; ♦ Powers to perform all the functions of the Director stipulated in Part VI, Part VII, Part IX, Part XI and Part XII (except the functions stipulated under Section 106) of the Forest Act be devolved to CE.	(x) Incomplete devolution of powers of Director of FBD to Chief Executive e.g. Chief Executive has no legal powers to enter JFMA with a party.

Table 60: SWOC analysis on transformation of TFS to paramilitary

	Factors within TFS that are likely to lead to positive change	Factors which may compromise further improvement of the TFS to achieve positive change
Inside TFS (Internal attributes)	Strengths (i) Activeness and willingness of TFS staff to manage and conserve forest and BRs effectively; (ii) Availability of the training center with well-qualified personnel and sufficient training facilities; (iii) Existing capacity of TFS to manage forest and BRs; (iv) Existing organization structure of TFS which support the flow of information/orders (chain of command); (v) Presence of financial resources for facilitating training of staffe.g. buy working gears and facilities; (vi) Existence of extension services unit at TFS to be used to educate people about paramilitary; (vii) Forest Act gives powers to authorized Forest Officer on offences related to forest produce; (viii) Presence of manpower at all forest management levels (i.e. at National, Zonal and District levels); and (ix) Presence of manpower especially young men and women who can be trained and become the best militia.	Weakness (i) Existing Forest Act and Policy has no provision for the establishment of paramilitary (paramilitary not recognized by the Forest Act); (ii) Existing Forest Act does not allow Forest Officers to use weapons; (iii) Inadequate staff in some Districts; (iv) Insufficient working facilities in some TFS offices at Zonal and District level to support the implementation of the paramilitary system; (v) Insufficient fund to train all staff and procure working gears; (vi) Limited coordination between TFS and villages that are adjacent to FRs; (vii) Poor cooperation between TFS and LGA' staff in some Districts; (viii) A good number of TFS staff are aged and due for retirement; and (ix) TFS is operating as a government agency, has no full Authority, and thus cannot operate as paramilitary; (x) Forestry training institutions offering certificate, diploma and degree programmes in Tanzania lack courses related to paramilitary or ballistics.

	Factors within TFS that are likely to lead to positive change	Factors which may compromise further improvement of the TFS to achieve positive change
Outside TFS (external attributes)	Opportunities (i) Fund availability from TFS and external sources to support the implementation of the paramilitary system; (ii) A number of villages have been enrolled in JFM and have established local institutions with trained personnel on forest management e.g. village game/ forest scouts; (iii) Ongoing process of Forest Policy revision and the subsequent revision of Forest Act; (iv) Presence of many graduates from forestry and beekeeping colleges who can be employed; (v) Presence of operational paramilitary system in TAWA and TANAPA through which TFS staff can learn or cooperate with; (vi) Presence of foresters who are employees of LGAs who can be transferred to the CG; and (vii) Presence of political will on the establishment of the paramilitary.	Challenges (i) Cost to operate the paramilitary system is too higher in terms of provision of training, and procurement of facilities; (ii) Integrating villagers in forest management especially in JFM arrangement (How paramilitary will work with VNRC); (iii) Creation of tension at the village level, thus forest adjacent villagers may not cooperate with foresters; (iv) Presence of two parallel institutions managing forests at District and village levels with a different approach: paramilitary versus civilian system; (v) Conservation politics – decrees from higher-profile political leaders on what to do and not in accordance with forest rules; (vi) Low rate of recruiting new foresters caused by the existing recruitment system; and (vii) Increasing rate of deforestation and forest degradation in unreserved and reserved forests that are managed by communities.

The study found that, TFS has strengths to be able to operate as an Authority. For more than five years, TFS has been managing natural forests, plantations, BRs with higher ecological values and potential for ecotourism. Through sale of forest goods and services, TFS can generate funds that can be used to cover forest management expenses. TFS also has experienced staff to manage NFRs and BRs at National and District levels (i.e. having a good organization structure that goes down to the District level). In each zone and District, TFS has an office and other strategic facilities. However, TFS is found to have several weaknesses. The funds that TFS receives annually in terms of budget are not sufficient to cover forest management expenses. It is mostly used to cover administration and office running expenses. These include salaries for supporting staff (watchmen, casual labors, drivers, secretary, and attendants), office materials, office equipment maintenance, and payment of bills (Internet service charge and communication, water and electricity).

TFS can utilize the availability of lands as an opportunity to expand forest plantations in order to fill the gap on wood deficit and subsequently expand income sources. Available land include land in highly degraded or deforested FRs and purchasing land in villages in areas potential for tree planting. TFS can also benefit with the presence of foresters in LGAs who are presently not utilized fully by DCs due to lack of resources to manage forests and other reasons. Thus, the process to establish an Authority can go together with transferring foresters from LGA to CG. Despite the strengths and opportunities, TFS is facing several challenges. These include climate change that may affect wood (both planted and natural trees) and honey production and existing employment system that may control recruitment of staff to fill the gap of staff.

Strength of TFS in relation to the ongoing process of transforming TFS from the civilian system of operation to paramilitary system include, existing organization structure that support the flow of information/orders (chain of command). On the other hand, insufficient fund to train all staff and procure working gears is one of the weaknesses of TFS. The study

observed that, the challenge is on how paramilitary system can integrate forest adjacent communities in forest management especially in JFM arrangement (i.e. how paramilitary will work with VNRC). Forest adjacent communities are important stakeholders who determine the outcome of forest management initiatives, therefore paramilitary system should not lead to exclusion of communities in forest management. The process of establishment of paramilitary may benefit from existing paramilitary system within the wildlife sector, however care is needed in adoption of approaches due to differences between management of wildlife and forests and what they mean to livelihoods.

3.5.2.1 Policy recommendations on transformation of TFS to an Authority and paramilitary

During this study, majority of stakeholders consulted were optimistic on establishment of the TFBA hoping that it will improve forest management in the country. Unlike agency withan Advisory Board, the Authority will have a Board with full Authority. The opinion of the majority of respondents was that the expected Forest Authority should take management responsibilities of all forests in Tanzania (i.e. Policy, law enforcement and technical assistance) while ownership remains under different jurisdiction especially forests under VGs (i.e. VLFRs), communities (i.e. CFR) and individuals (i.e. PFs).

The issue of Authority is highlighted in the proposed Forest Policy (see Section 3.5 Human and Institutional Capacity of Forest Policy – Final Draft of March 2019). However, the statement shows that the Authority will oversee management and sustainable utilization of all forest resources in the country. In reality, the Authority is supposed to manage public forests and provide support on the management of forests on the village and general lands. And since there is an on-going process of transforming forest management approach from civilian into paramilitary approach and the fact that paramilitary is not highlighted in the current Policy draft, the study recommends some amendment in Section 3.5. A sentence that reads "*The establishment of a formal body (Authority) to oversee management and sustainable utilisation of all forest resources*

in the country is essential", to be replaced by the following sentence "*The establishment of a paramilitary Authority to manage public forests, to support management of forests on village and private lands and sustainable utilization of all forest resources in the country is essential".* Proposed Policy statements and functions of the prospective TFBA are presented in Box 3.

Box 3: Proposed Policy statements and functions of prospective TFBA

Proposed Policy statements:

(i) Ensure the establishment of a paramilitary Authority to manage public forests, and support the management of other forests, and

(ii) Ensure sustainable utilization of all forest resources in the country.

Proposed functions of prospective TFBA:

(i) Establishing and managing natural forests under the CG, LGA and forests on general land,

(ii) Supporting establishment and management of natural FRs on the village and private lands,

(iii) Establishing and managing forest plantations,

(iv) Supporting establishment and management of small-scale forest plantations (woodlots),

(v) Establishing and managing BRs and apiaries,

(vi) Supporting establishment and management of BRs and apiaries on the village and private lands,

(vii) Coordination of training of forestry and beekeeping professionals,

(viii) Enforcing National Forest and Beekeeping legislation,

(ix) Providing forest and Beekeeping extension services,

(x) Collecting forest and beekeeping revenue,

(xi) Marketing of forest and bee products and services,

(xii) Recruiting and developing TFBA human resources,

(xiii) Safeguarding TFBA assets,

(xiv) Implementing all key International forest-related conventions and agreements and

(xv) Monitoring and evaluation of TFBA activities

3.5.2.2 Recommendations on a Policy implementation strategy should accommodate the transformation of TFS to an Authority and paramilitary

Like Forest Policy, the Policy implementation strategy has highlighted the issue of an Authority in Section 4.2.4, Objective five (Human and institution capacity to deliver services in the forest sector – see Final Draft

of March 2019). Regarding this, the study recommends amendment in Target II. Currently, Target II in the policy implementation strategy reads: "Authority for management of all public forests established by June 2021". It should be "*Paramilitary* Authority *for management of all* public forests*, supporting the management of forests on the village and private lands* established by June 2021*"*.

3.6 Sustainable management and utilization of forest resources under different ownership types

Forests are essential for human survival and well-being. Unsustainable use of forest resources leads to unsustainability of forest resources. In 2007 the General Assembly of the United Nations defined SFM as a dynamic and evolving concept aiming to maintain and enhance the economic, social, and environmental values of all types of forests, for the benefit of present and future generations. In simpler terms, forest sustainability implies the achievement of a balance between societies' increasing demands for forest products and benefits and the preservation of forest health and diversity (UN, 2008). The balance is critical to the survival of the forests and the prosperity of forest-dependent communities.

Among others SFM relies on appropriate policies, legal and institutional framework. The National Forest Policy (1998), Forest Act No. 14 (2002) and various guidelines and regulations provide an appropriate environment for SFM in Mainland Tanzania. For example, the National Forest Policy (1998) aims at enhancing the contribution of the forest sector to sustainable development of the forest sector and conservation and management of natural resources for the benefit of the present and future generations. On the other hand, the Forest Act No. 14 (2002) and various guidelines and regulations provide legal framework for implementation of the National Forest Policy. Hence forest management entails implementation of policies and enforcement of laws where law enforcement mechanism consists of (1) ensuring compliance to law and rules, and (2) sanctions against violation of rule and laws. The law provides legal mandates to

institutions on implementation of the Forest Policy, such institutions includes the FBD, TFS and LGA.

As SFM is evolving PFM is considered as one of the building block for SFM (Amente and Tasesse, 2004; Springte *et al*., 2008, Ngaga *et al*., 2013; Treue *et al*., 2014). Both the National Forest Policy (1998) and Forest Act No. 14 (2002) recognise and promote PFM as a strategy for (i) improved livelihoods (ii) improved forest condition and (iii) improved forest governance through SFM practices (URT, 2003). According to Armitage (1998), SFM is achieved if the accumulated mean annual increment of a given forest is equal to or marginally greater than the total harvest during a planning period. The model of PFM entails two approaches, known as JFM and CBFM.

CBFM takes place on village land, on forests that are owned or managed by the Village Council on behalf of the Village Assembly and leads to the establishment of VLFR, CFR or PF. Likewise, JFM takes place in forest on "reserved land" – land that has already been set aside (or reserved) by government authorities. The forest is jointly managed by different stakeholders, such as local communities, private sector, local or CG or anybody authorised by FBD. The output of the process is a JFMA which spells out how the costs and benefits of forest management are shared between the forest owner and the managing partner.

In order to achieve SFM, the MNRT through FBD has prepared a series of guidelines to guide its implementation:

- Forest Regulations (MNRT, 2004);
- JFM Guidelines (MNRT, 2007);
- CBFM guidelines for the establishment of VLFRs and CFRs (MNRT, 2007);
- Guidelines for Participatory Forest Resource Assessment and Management planning (MNRT, 2004);
- Guidelines for Harvesting in VLFRs (MNRT, 2013);

- Guidelines for Natural Forest Products Harvesting and Trade (MNRT, 2015); and
- Forest Harvesting Guidelines in VLFRs (MNRT, 2015);
- Guidelines for Preparation of Management Plans for Natural FRs in Mainland Tanzania (MNRT, 2007).

Nevertheless, it should be noted that while it is recommended that the forest should be utilized sustainably, this is only viable if the wood demand can be sustained by the available forest resources. At the moment annual wood deficit is about 19 million cubic metres (MNRT, 2015). This implies that efforts to meet SFM have to consider that the available forest alone cannot adequately fulfil the current and future wood demands. In practice, wood demands are satisfied through legal and illegal harvesting of wood resources. Illegal wood extraction leads to unsustainable forest resources utilization. The findings revealed that the developed forest management plans are focused on specific forests being managed and does not integrate wood demands in the overall forest management planning process. Therefore, forest management planning process, which is the key in SFM, should determine actual wood demand from time to time and integrate other sources of wood supplies e.g. agroforestry, woodlots, and forest plantations.

3.6.1 Factors contributing to unsustainable management of NFRs

The study identified five factors which contribute to unsustainable management of NFRs:

(i) Inadequate financial resources,

(ii) Inadequate human and physical resources,

(iii) Inadequacies in preparation and implementation of forest harvesting plans:

- Inadequate information on forest resources assessment methodology,
- Flawed estimation of allowable cut,

- Implementation of harvesting plan,
- Available forest resources versus demand,

(iv) Benefit sharing,

(v) Forest ownership and boundary conflicts:

- Forest tenure,
- Conflicting land and natural resources policies,
- Management and boundary conflicts.

3.6.1.1. Inadequate financial resources

Inadequate financial resources is one of the reported factor contributing to unsustainable use of NFRs. Findings indicated that 53% of all Districts in Mainland Tanzania experienced inadequacy of funds. Inadequate financial resources result into:

- Infrequent forest patrols;
- Inadequate forest boundary maintenance; and
- Outdated or lack of management plans for NFRs;

As a consequence of infrequent forest patrols and lack or inadequate forest boundary consolidation, there have been forest encroachment for settlements, farming and livestock grazing in most NFRs leading to loss of forest cover and forest degradation.

In addition, due to lack of fund to support preparation and revision of forest management plans, only 32% of all NFRs have management plans (i.e. 28% arecurrent and 4% are outdated) (see Table 15). Despite that, area of NFRs with current management plans is equivalent to 70%. Moreover, a good number of the existing forest management plans are not based on proper forest resource assessment since its implementation is very expensive. For example, findings show that 63% of existing forest management plans in NFRs was prepared without forest inventory data. This implies that management of most of the NFRs is not based on

principles of SFM and does not comply with the Forest Policy, Forest Act, Regulations and Guidelines. Policy directions clearly states that, FRs will be managed using forest management plans prepared using reliable forest inventory data (URT, 1998).

The government established TaFF in 2010 to support sustainable financing to achieve SFM under the provision of the Forest Act of 2002. However, the Forest Act (URT, 2002) does not explicitly state how the TaFF could be used to finance SFM. Nevertheless, the Act provides possibility of formulating a plan of activities to be supported by the Fund in accordance to Article 80 (g), which states "promote such other activities of a like nature to those set out in this Section as will advance the purposes of this Act". It is therefore recommended that FBD should work with TaFF to develop and implement a plan for sustainable financing of SFM activities for effective management of forest resources.

Another window for financing Forest management is through payment for ecosystem services (PES). Ecosystem services include watershed protection, forest conservation, biodiversity conservation, carbon sequestration and landscape beauty in support of ecotourism. The current revised Forest Policy draft recognizes PES as a means to provide sustainable financing for effective forest management. However, the mechanism to operationalize PES has not been established yet.

Most of the NFRs in EAMs are protective with high externalities values for example the hydro-power under construction in Rufiji receives water from Rufiji River which receives more than 40% of water from Kilombero River. Furthermore, Kilombero River is supplied by water from Uzungwa nature FR, Kilombero nature FR and Udzungwa NP. The inadequacy of funds to support forest management activities in such FRs is partly addressed by EAMCEF. The Fund was established in 2001 as a long-term funding mechanism to provide sufficient and reliable financial support for effective conservation of the EAMs in Mainland Tanzania. However, the Fund has limited financial capacity to meet the anticipated support. In order to be able to provide sufficient funding for conservation of the whole EAMs, EAMCEF needs capital investment of at least four times

the US$ 7 million which was made available from Global Environmental Facility (GEF) during the establishment of the Trust Fund. The anticipated a capital investment would generate the US$ 1.5 million required every year which will ensure flow of ecosystem services to both adjacent and distant dependents of ecosystem service from EAMs.

Therefore, FBD should develop and coordinate implementation of PES mechanisms to widen sources of finances needed to support SFM. Likewise, the EAMCEF may be financed through various modalities such as occasional National wide fund raising in order to boost its capital investment and ensure sustainable support of forest management activities in EAMs.

3.6.1.2. Inadequate human and physical resources

The amount and capacity of human resources is the key in all forest management operations from planning to implementation. About 41% of the interviewed DFMs reported that given the large number of forest management activities, staff was too few to adequately implement and accomplish planned activities. They further reported that the numbers of staff were disproportional to the managed forest area, i.e. in some cases large forest area have correspondingly fewer staff and working infrastructure (e.g. vehicles). This pattern was also reported previously as shown in Figures 30 and 31 (URT, 2017).

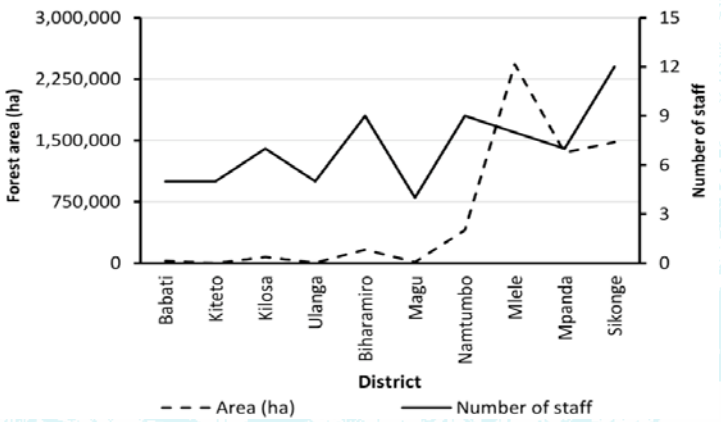


Figure 32: Number of staff and FR area in selected Districts

Source: URT (2017).

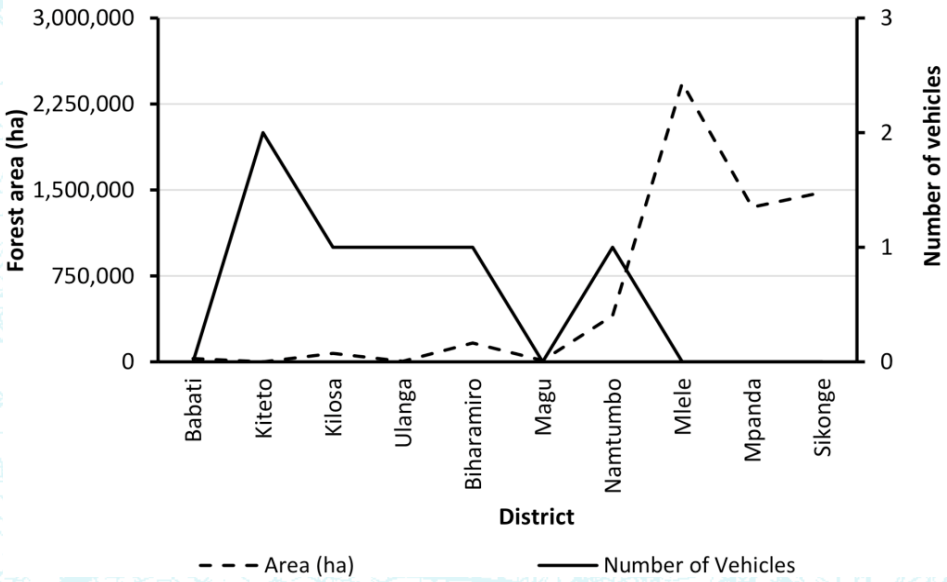


Figure 33: Number of serviceable vehicles and FR area in selected Districts

Source: URT (2017).

These challenges can be addressed using short- and long-term approaches, for either of the approach size of forest being managed should be integrated in the process of distributing staff to working stations. It is proposed that; the short-term solution may involve re-distribute staff and movable physical assets/facilities. The long-term solution may involve procurement of sufficient working tools, equipment and machinery (vehicles, heavy plants, tractors) in all FRs so as to increase efficiency in the management of forest and bee resources. In addition, recruitment of adequate staff with required skills to manage forest and bee resources should be planned and implemented.

3.6.1.3. Inadequacies in preparation and implementation of forest harvesting plans

3.6.1.3.1 Inadequate information on forest resources assessment methodology

The guidelines for preparation of forest harvesting plan acknowledge the importance of carrying out forest resources assessment. This information

is key in determining the harvestable volume and availability of suitable tree species depending on the end use, e.g. wood fuel (charcoal and firewood) and timber. Nevertheless, the guidelines have not stipulated the methodology on forest resources assessment (forest inventory) which should be adopted for different forest types and different circumstances. Theforest resources assessment guidelines should provide guidance on sampling procedure and intensity (allowable error), tree measurements, analysis and reporting. The guidelines should also dictate thresholds of harvestable stocking levels. For example, while in some cases, the sampling error was reported, various sampling errors have been applied when carrying out forest inventory. Elevated allowable error results to imprecise volume estimates. Consequently, when the estimated harvestable volume exceeds the actual allowable cut it resultsinto unsustainable utilization of forest resources. Therefore, a detailed guideline for resources assessment of both natural and plantation forests should be prepared and ensure there is adequate compliance on the use of the guidelines.

3.6.1.3.2 Flawed allowable cut estimation

Forest increment is a function of individual tree growth and recruitments (sprouting or seedling which become trees based on the standard definition of a tree). Principally, under sustainable utilization of forest resources, the annual removed volume should not exceed the forest increment (Armitage, 1998; Mugasha *et al*., 2017b). This implies that SFM can only be achieved through reliable determination of yields of both wood and non-wood products. In Tanzania, growth studies based on permanent plots which are relatively less disturbed indicated that the increment ranges from 0.8 to 2.3 m^3 ha^{-1} $year^{-1}$(Malimbwi *et al*., 2005; Treue *et al*., 2014; Mugasha *et al*., 2017c). Such studies are based on relatively less disturbed permanent sample plots, therefore does represent the real situation of forest recovery under high intensity harvesting. Besides, the current estimates of growth increment are focused on miombo woodlands and do not covers forest formation; and that the miombo woodland studies do not represent the wide ecological variability of miombo woodlands which correspond to different growth conditions. In

addition, the actual allowable cut is also affected by the baseline status (stocking and tree sizes distribution) of the given forest stand. Therefore, in most cases the allowable cut applied to prepare harvesting plans is likely to be unrealistic due to existing variations in growth rates and harvesting intensities.

As a short-term measure, a pessimistic allowable cut value of 1 m^3 ha^{-1} $year^{-1}$ is recommended (Treue *et al*., 2014; Mugasha *et al*., 2017a). This proposition is justified by the fact that SFM is already at a cross-road due to current annual wood deficit of 19 mil. m^3. Studies on regenerative and growth capacity representing different ecological variabilities be carried out to develop more precise allowable cut for each ecological zone and forest cover are also recommended as a long-term solution. Such studies will also help to update forest management planning guidelines.

3.6.1.3.3 Poor implementation of harvesting plan

The guidelines for forest management stipulate that it is essential that harvesting is monitored. This is to ensure that only trees species, size and number stated in the harvesting plan are harvested to ensure sustainability (URT, 2007). The removed amount should not exceed the allowable cut. However, the guidelines for preparing and implementing harvesting plan do not explicitly state how compliance to allowable cut is monitored. In addition, the guidelines have not stipulated the methods to be used to estimate the harvested tree volume. Two standard methods are available, i.e. direct method (where felled trees are measured log by log) and indirect method (using volume equation which uses easily measurable tree parameters to estimate volume). However, Forest Managers use different approaches in determining volume. The commonly used method is to estimate standing tree volume from the harvested timber declared by timber dealers at the village offices and TFS checkpoints. This method has several disadvantages highlighted below:

Encourage excessive wastes (lower recovery)

Since the timber dealer knows in advance that he/she will only pay for the final product, there is no motivation to apply efficient technology to improve recovery. For example, a timber dealer is interested in timber with length of 8 feet. If such a timber dealer encounters a log of 11 feet, get the 8 feet and discard the remaining 3 feet. Timber wastage of this nature was observed in several Districts (e.g. Plate 1). Since volume of removal in relation to the allowable cut is estimated from harvested timber, this practice removes more than sustainably allowable volume, this is contrary to good practices of SFM. It is recommended that tree measurements be done before production of timber and each dealer be charged on the basis of standing harvestable volume.

Plate 1: Remaining woods in the field as observed in Kilwa district

Encourage cheating by timber dealers

Timber dealers are not monitored in selecting trees for harvesting. In this case, the chance of harvesting tree below the standard size especially for the most preferred timber species (*Pterocarpus angolensis* and *Afzelia*

quanzensis) is high (Plate 2). Since smaller trees are projected for future harvesting, harvesting them now jeopardize sustainability of the forest resource.

Another risk is that the timber dealers often do not declare some of the harvested timber by transporting them through illegal paths. In this case, there is no possibility for tracing back the actual volume harvested from the forest.

Plate 2: Stump of harvested small sized Afzelia quanzensis in Liwale District (ten thousand TZS note and a standard smart phone (5 inches) to show the actual size of the stump)

Moreover, while guidelines re-iterate the need of monitoring harvesting operations, however no stated mechanism for monitoring harvesting of forest produce. The risk is that existence of plan may not necessarily represent its proper usage. For example, during the field visit in Liwale, Lindi and Kilwa it was noted that tree species of high demand

such as *Swatzia madagascariensis* is being over exploited beyond the stated species-specific allowable cut. It was further noted that size of the harvested tree falls below the standard harvestable diameter of *S. madagascariensis*. This makes the tree species to be endangered and might lead to extinction in the long term (Plate 3). It is recommended that an effective monitoring system including data verification process should be developed and implemented on a regular basis.

Plate 3: Small sized harvested logs of Swatzia madagascariensis in Lindi District

3.6.1.4. Benefit Sharing

The JFM guidelines of 2007 (URT, 2007) explicitly state the proportion of benefits/income generated to be remitted to participating communities. The guidelines states that "*40% of any revenues generated as a result of forest management (e.g. research, entry, camping, filming (permits), carbon) goes to the VG and the remaining to FBD*". However, all DFMs contacted reported that TFS had not implemented this requirement for both productive and protected forests managed under JFMA with villages; and those without JFMAs. Consequently, VG and VNRC representatives contacted complained that they do not benefit from participating in management of CG forests. Literature shows that JFM contribute to sustainable use of forest resources. For example, a study on the impact of PFM on forest condition revealed wood extraction of 1.1 m^3/ha/year in JFM NFRs and 6.7 m^3/ha/year in non-JFM NFR (Ngaga *et al*., 2013). A

share of 40% as an incentive to partners in forest management is in the higher side hence the difficulties to operationalize. It is recommended that, JFM be implemented effectively in NFRs and this should entail defining realisitic package of incentives to partners in forest management.

On the other hand, protective NFRs are managed mainly for their intrinsic values, e.g. biodiversity, carbon storage, and water catchment values. Local communities incur forest management costs to sustain such NFRs. These forests do not provide direct benefits to forest adjacent local communities. This acts as disincentive for effective community involvement in management of protected NFRs. With no assistance from local communities, the CG is likely to fail to protect these forests due to inherent inadequate human and financial resources. In order to motivate partners in forest management, windows such as avoided deforestation and forest degradation (REDD+) and PES may be explored adequately.

3.6.1.5. Forest ownership and boundary conflicts

3.6.1.5.1 Conflicting land and natural resources policies

Tanzania legal system gives more power to the Mining Act 2010 (URT, 2010) than Forest Act. Accordingly, mining activities in NFRs have devastating impacts on the forest resources. This happens because the Minister responsible for mining development have the legal power to convert any land use to mining (Part VII of Mining Act, 2010) without necessarily being required to obtain free will consent from other right holders. Field assessment revealed mining is taking place within Patamela and Mbiwe NFRs in Songwe District (Plate 4). Other Districts whose forests are affected by mining include Mpwapwa, Geita, Same, Handeni, Muheza and Mkinga. It is recommended that there should be a mechanism that will allow informed consent of the MNRT before the change of the land use or issuing mining permit.

Plate 4: Small scale mining at Patamela FR in Songwe District

3.6.1.5.2 Management and boundary conflicts

For a very long time, before the establishment of TFS, FBD had informally devolved its mandate to manage reserved forests to LGAs without any change of respective government notices. After a long time, the LGAs have tended to perceive permanent ownership of some of these forests. After establishment of TFS in 2013, TFS were mandated to take over the entire FRs which was formally under FBD. However, most LGAs still perceive that they own those FRs and this causes conflict between the two government entities. Consequently, there has been no effective cooperation among actors in managing FRs under conflicts. Such lack of cooperation reduces commitment to either part or the party perceiving to have lost. Consequently, it result into a vacuum for implemention of management activities hence forest resources deforestation and forest degradation (e.g. Mutolib, 2017).

On the other hand, during the period in which LGAs were the overseer of FRs under FBD has been progressive encroachment for farming and settlement. There are cases where villages were established inside FRs. Some of the examples include Ulembo village in Ulembo/Usafwa

FR; Mkongo village in Utete FR; Babayo village in Chenene West FR; Mayamaya village in Chenene East FR; Kasaka village in Nyantakara FR; Naionokwe village in Nampekeso FR; Mbangala Mbuyuni village in Mbangala FR; Mtandi village in North Ngarama FR; Mwajiji and Kadoto village in Nindo FR; and Bukala village in Igombe river FR. This happened due to lack of capacity of LGA and priority to manage the FRs.

The following are proposed interventions for resolving management and boundary conflicts:

- It is apparent that the conflict between TFS and LGAs have persisted because none of the actors have taken initiatives to resolve them. As discussed in Section 3.1.2.2, it is urgent that such conflicts are resolved in order to ensure smooth implementation of forest management activities;
- For villages established within FRs, it is recommended that a thorough assessment be done to distinguish villages which settled in the area with formal government registration and those that settled without any legal base. Consequently, (i) area of FRs occupied by villages settling within FRs and are registered should be revokedand such FRs should be re-surveyed as long as such a decision does not result into major environmental consequences e.g. affect water sources; (ii) villages settling within FRs and are not registered should be evicted using appropriate mechanism.

3.6.2 Factors contributing to unsustainable management of LAFRs

Currently, the findings show that there are about 158 (1.8 mil. ha) forests under the LAFRs. Similar to NFRs, management of LAFRs is affected by a number of factors:

(i) Inadequate financial resources,

(ii) Inadequate human and physical resources,

(iii) Lack of forest management plans; and

(iv) Forest ownership and boundary conflicts

3.6.2.1 Inadequate financial resources

Inadequate financial resources to support management activities of LAFRs were also reported by DFOs. Inadequate financial resources act as mediating factor for other forest management challenges such asinfrequent or no forest patrols. The problem of inadequate finances for management of LAFRs is propagated by the fact that forest is not a priority sector in the budgeting mechanisms at LGAs. As a result, forest management activities are allocated little or no funds. As a result, large number of LAFRs has been converted to other land uses such as permanent settlements and farming. These challenges have been reported for 62% of all LAFRs.

In addition, due to inadequate financial resources, of all LAFRs, only 2% and 14% of all LAFRs have current and outdated forest management plans respectively (Table 15). Similarly, out of the few existing forest management plans (12%), only 12% were prepared using forest inventory data (Table 15). It is important to note that the low priority attached to LAFRs may be associated with the fact that majority are not productive forests. Therefore, no tangible benefits are accrued to LGA. Despite the challenges facing CGFRs, the CG has relatively higher forest management capacity and priority on forest management than LGAs. Therefore, in order to ensure effective management of LAFRs, deliberate action should be made to transfer LAFRs to the CG.

3.6.2.2 Inadequate human and physical resources

The amount and capacity of human resources is the key in all forest management operations from planning up to implementation. About 46% and 62% of the interviewed DFOs reported inadequacy of facilities and staff respectively. Some of the DFOs reported they had no forestry staff at all, e.g. Nkasi District, notwithstanding the District is relatively heavily forested. This is in line with the findings reported in Ishengoma (2004) that where they found overall deficit of 237 Senior Forest Officers, 1180 Forest Officers and 2114 Assistant Forest Officers. As pointed out in Section 3.6.2.1, the solution for this challenge is to transfer all foresters to

CG. Inadequate human and physical resources to support management of LAFRs imply that such FRs are not managed sustainably.

3.6.2.3 FR Managed without forest management plans

The findings show that 2% of all LAFRs have current management plans and 14% of all LAFRs have outdated management plans (Table 15). Accordingly, about 84% (i.e. 61% of total area under LAFRs) of all reported LAFRs are not managed using management plans as required by the law. Similarly, very few (12%) of the existing forest management plans were prepared using forest inventory data and 67% of all existing productive/both protective and productive forest management plans have no harvesting plans (see Table 15). Section 3.1.1.2 summarised the status of forest management plans for LAFRs while a list of LAFRs with management plans is provided in Appendix 40. Inadequate financial resources for preparing forest management plans have been reported to be the main reason. Consequently, most of the LAFRs are seriously encroached with permanent settlements and farming activities. Moreover, the prepared forest management plans and harvesting plans face similar challenges reported in Section 3.6.1.3, i.e. inadequacies in implementation of management plans including harvesting plans. Some of the Districts no longer engage in forest management and propose their forest to be transferred to CGi.eTFS.

3.6.2.4 Forest ownership and boundary conflicts

The study documented 50 ungazetted LAFRs (32% of all LAFRs). This poses management challenge to Forest Managers since it is difficult to enforce forest laws such as evicting people who have encroached the forest or suing culprits found in the forest without appropriate ownership documentations. Besides, some forests have no official map that indicates boundaries. As proposed by Forest Act of 2002 (URT, 2002), it is imperative that ungazetted forests are put into effective formal management in order to ensure sustainability of forest resources. On the other hand, conflict on forest ownership still prevails between TFS and LGAs (e.g. Table 21). Interventions to deal with conflicts related to forest ownership and boundary are provided in Sub-section 3.6.1.5.2.

3.6.3 Factors contributing to unsustainable management of VLFRs

The study indentified two major factors affecting SFM:

- Insufficient financial and human resources, and
- Flawed and poor implementation of forest harvesting plans.

3.6.3.1 Insufficient financial resources and inadequate technical assistance

Financial resources for management of VLFRs, among others, are needed to cover costs associated with forest patrols and law enforcement, forest boundary consolidation, forest fire management and eviction of livestock keepers. The findings showed that majority of villages with production forests have less pronounced or no financial problems. The financial problems are more prominent for highly degraded VLFRs as there are no forest products (timber and charcoal) that could be sold to generate income. The same problem applies in a few cases of VLFRs with well stocked forests but entirely managed for protection (no harvesting). Sources of revenues in such forests are limited to eco-tourism, non-wood products, and fines. Examples of this scenario are VLFRs in EAMs which cannot adequately meet forest management costs. Similarly, FBD should see possibilities of developing policies that ensure villages with protective VLFRs are given financial support to facilitate forest management activities. It should be noted that, most protective FRs have values external to given localities, therefore villages managing such FRs does so for local benefits and beyond.

Due to low technical capacities, in line with the Forest Policy of 1998 and Forest Act of 2002, successful management of VLFRs requires regular extension services from DC. Among the roles of District forest offices include:

- Verification of the harvested forest produce,
- Facilitating development and approval of forest management plans including harvesting plans, and
- Supervising implementation of forest management and harvesting plans.

Unfortunately, all the Districts reported that they had no budget set for management of their forests leave alone the VLFRs. As a consequence, failure of VLFRs to receive technical assistance from the District forest department poses challenges to the achievement of SFM:

- Buyers cheat villagers and harvest excess tree volume compared to volumes officially authorized and paid for. This happens through manipulation of tree volume calculations. For examples this issue was observed in Sautimoja and Machemba villages in Tunduru District; and
- Villages failing to abide to the overall forest management and harvesting plans prescriptions.

Technical assistance to villages and other stakeholders is the primary responsibility of FBD. Lack **or** inadequate technical assistance to villages and other stakeholders in forest management should be addressed by FBD to devolving such responsibilities to TFS where by FBD should closely monitor the implementation of such responsibilities**.**

3.6.3.2 Flawed and poor implementation of forest harvesting plans

Forest harvesting plan require credible forest information generated through forest inventory. Importantly, is the information on forest development particularly volume increment. In principle, the annual removal (allowable cut) should not exceed the annual increment. Therefore, if forest status (stocking, composition, and diameter distribution) and allowable cut information are flawed they have direct effect on sustainability of forest resources. Details on average annual increment in miombo woodlands which depict the allowable cut are thoroughly described in Section 3.6.1.3. The main problems related to preparation and implementation of harvesting plans for VLFRs includes:

- Poor forest resources assessment to acquire accurate information on standing stock and composition. Most of the harvesting plans developed for VLFRs are financed and facilitated by NGOs such as WWF, MCDI and TFCG. Since developed guidelines by MNRT for preparing and implementing harvesting plans have not explicitly described how the harvesting plans should be prepared

and implemented, and that guidelines for forest resources assessment on VLFRs are lacking, different stakeholders have been implementing different methodological approaches when conducting forest resources assessment and subsequent harvesting plans (Box 4). While the consequences are not known precisely, over estimation of standing forest parameters and therefore elevated allowable cut may result into unsustainable utilization of forest produce,

Box 4: Example of current forest harvesting approaches in VLFRs

Sustainable Charcoal Production in Morogoro Region: TFCG Model

Since 2012, TFCG have been involved in sensitization and implementation of charcoal harvesting from VLFRs in Morogoro Region. The approach alternate harvesting in blocks of 50 m x 50 m with assumption that the forest will recover to its original state after a rotation of 24 years after harvesting. In this approach all tree great or equal to dbh of 10 cm are harvested except those trees which are suitable for timber and fruit trees. While the approach of alternating annual coupes is ecologically sound, there are two main issues:

- There is no empirical evidence suggesting that after a rotation age of 24 or 30 year the forest will recover to its original state; and
- There is no guarantee that the amount removed will not exceed the annual increment.

Sustainable Timber harvesting: MNRT and MCDI Model

Unreserved forests for so long have been immediate source of timber and charcoal. To estimate allowable cut, ocular or partial forest inventory are carried out. From the collected forest inventory data, volume of timber of trees reaching minimum suitable size based on forest regulation (dbh of 40 - 50 cm depending on tree species). For MCDI, line transects of 10 m wide are laid out and only trees qualifying for harvesting (dbh of 40 – 50 cm depending on tree species) are measured and enumerated. The established volume estimate from this assessment is divided by 5 to provide annual allowable cut within 5-year period. For both MNRT and MCDI, review of their respective plan revealed that the estimated allowable cut does not conform to the regenerative or growth capacity of the forest. In both cases, with this approach, it is most likely that in near future there will be a scarcity of trees suitable for timber and charcoal production.

- Review of harvesting plans for VLFRs revealed that the majority do not present the standing forest parameters to justify their allowable cut. Studies have shown that annual volume increment in miombo woodlands ranges from 0.8 – 2.3 m^3 ha^{-1} $year^{-1}$(Malimbwi *et al*., 2005; Treue *et al*., 2014; Mugasha *et al*., 2017c) depending on the prevailing growth conditions. However, this information is not explicitly included into the estimation of allowable cut; the practice has been that rather all trees within a specified diameter range (above 40 or 50 cm depending on tree species) are often set for removal within the harvesting plan. It is therefore recommended that MNRT should develop robust forest harvesting plan guidelines which describe all necessary steps to be observed from forest assessment, estimation of allowable cut and implementation. The guidelines should also dictate thresholds of harvestable stocking levels. In addition, since among others, allowable cut is a function of standing stock and local biophysical factors, further research is necessary to come up with credible allowable cut estimates from different harvesting regimes and across environmental gradients i.e. rainfall, topography and soils. It is recommended that a pessimistic allowable cut of 1 m^3/ha/years be adopted as a short term solution (Malimbwi *et al*., 2005; Treue *et al*., 2014; Mugasha *et al*., 2017c);
- Having a good harvesting plan in place is one thing and its implementation is another. As noted for NFRs productive forests, VLFRs are facing the same challenges of supervising and monitoring forest harvesting (Section 3.6.1). Thus, in accordance with Forest Act of 2002, it is imperative that implementation of VLFRs harvesting plans is effectively and regularly monitored. Poor forest harvesting supervision and monitoring may result into unsustainable extraction of wood resources andloss of revenue. The study could not estimate the actual amount of revenues lost as a result of poor forest harvesting supervision and monitoring. As for productive NFRs, it is recommended that an effective monitoring system including data verification process for VLFRs be developed and implemented on a regular basis.

3.6.4 Factors contributing to unsustainable management of unreserved forests

3.6.4.1 Conversion to other land uses

Unreserved forests are under jurisdiction of TFS in accordance with Forest Act of 2002 and the TFS Establishment Order (2010). However, most of the unreserved forests are on the village land as recognised by Village Land Act of 1999. The findings detailed in Sub-section 3.1.2 shows that more than 50% of total forest cover is unreserved. Further findings show that in Section 3.1.5, revealed that this category of forest ownership is highly deforested and degraded than all others. Unreserved forests attract a lot uncontrolled harvesting due to the fact that they lack effective management and legitimate ownership. This situation is incompatible with the objective of the Forest Policy of 1998 and Forest Act of 2002.

One of the objectives of Forest Policy (URT, 1998) stipulated in Chapter three, is to ensure sustainable supply of forest products and services by maintaining sufficient forest area under effective management. In addition, Policy Statement No. 5 states: "*enable sustainable management of forests on public lands, clear ownership for all forests and trees on those lands will be defined. Forests and the responsibility for their management will be allocated to villages, private individuals, or to government. Central, local and VGs may demarcate and establish new FRs*. Findings further show that, despite of the challenges in management of NFRs, forests under central and VGs are far better compared to unreserved forests. To comply with Forest Act of 2002 and ensure effective management of forest resources, it is recommended that all unreserved forests be put under effective management of through (i) establishment of VLFRs as much as possibleand (ii) establish new NFRs for unreserved forest demonstrating high ecological potential.

3.6.4.2 Unsustainable harvesting of forest produce

TFS has taken an advantage of the loop hole of the Forest Act of 2002 to schedule all forest harvesting in the unreserved forests while reserving productive NFRs. Harvesting in unreserved forests is informed by the so called "ocular or partial inventory data". Ocular forest inventory is based on quite low sampling intensity. In addition, boundaries of most of the unreserved forestsremain unknown hence questioning the validity of the estimated area of the unreserved forests. Flawed estimation of forest area is associated with flawed estimation of stocking levels and allowable cut. Therefore, as noted earlier, efforts should be made to formalize ownership and management responsibilities of all unreserved forests to ensure uncontrolled use and sustainability of forest resources.

3.6.4.3 Conflicting land and natural resources policies

All lands in Tanzania are governed by National Land Policy and two laws i.e. Land Act No. 4 of 1999 and Village Land Act No. 5 of 1999 (URT, 1999). The Forest Act of 2002 and the TFS Establishment Order put management responsibility of unreserved forests under the jurisdiction of TFS. On the other hand, villages have claims over the unreserved forests on village lands and LGAs claim responsibilities over forests on general land as stipulated in the Forest Act of 2002. This situation has created re-current conflicts over revenues from unreserved forests between villages and TFS, LGAs and TFS. As a result, some VGs have taken advantage of the Village Land Act of 1999 to approve clearing of many unreserved forests for establishments of crop fields or other land uses. Consequently, most of the unreserved are being converted to other land uses at an alarming rate. Therefore, as noted earlier, in order to ensure effective management of all unreserved forests, they should be put under clear ownership of either village, or CG depending on ecological characteristics of the given forest sites.

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

Mainland Tanzania is endowed with vast forest resources which are important to livelihoods and National economy through provision of goods and services. Accordingly, the study concludes the following:

(i) Forest cover in Mainland Tanzania is about 48.1 million hectares which is equivalent to 51% of total surface area or 54% of land surface area;

(ii) Forest cover falls under different ownership types namely CG (NFRs), LGAs (LAFRs, village (VLFRs, CFRs) and unreserved forests on village land) and private land holders. Forests also fall under other management regimes which are either under CG (NPs, NCA, GRs, GCAs, MPs and MRs and BRs) or VG (WMAs);

(iii) About 45% (i.e. 21,451,078 ha) of total forest cover is reserved and managed byCG (34.5%; 16,610,581 ha; it includes *NFRs, GRs, GCAs, NCA and NPs*), LGAs (LAFRs; 6.5%; 3,107,351 ha), VGs (VLFRs; 1.4%; 678,380 ha) and private entities (2.2%; 1,054,767 ha). On the other hand, 55% of total forest cover is unreserved/unmanaged. Large proportion of unreserved forest cover falls on village land (44% of total forest cover or 80% of the entire unreserved forest cover) and the rest on general (6% of total forest) and private (5% of total forest cover) lands;

(iv) About 43% of total Mainland surface area is reserved in terms of forest and bee reserved areas (13%), wildlife reserved areas (30%) and marine reserved areas (0.2%);

(v) Tree species diversity, carbon and wood volume per hectare is relatively high in CG, LGA and general lands implying that the general land comprises of areas with ecological and economic potential;

(vi) In terms of land use/management objective, protection forests, production forests and wildlife reserves (i.e. GRs, GCAs, NCA

and NPs) have significantly high tree species diversity than other land uses;

(vii) Occurrences of big wild mammals outside reserved areas imply that such areas are important wildlife habitats, wildlife corridors or wildlife routes;

(viii) Tree cutting occurs in all land ownership types, management regimes and land uses including wildlife reserves (i.e. GRs, GCAs, NCA and NPs) and protection FRs contrary to policies and laws. Major drivers for tree cutting are agriculture, charcoal, firewood, pole and timber;

(ix) Overall annual deforestation is about 577,000 hectares. Deforestation occurs both within reserved areas and outside reserved areas. About 34% (2013-2018) of total deforestation occur in reserved areas. Loss of forests is associated with agriculture and wood extraction for charcoal and firewood as major direct drivers and major indirect factors (economic, policy and institutional factors);

(x) There are a number of challenges related to keeping and management of forest data;

(xi) Challenges in management of forests under different ownership types include inadequate financial resources, inadequate human resources, poor infrastructure and management of assets, presence of FRs without management plans and ungazetted FRs, and weak law enforcement;

(xii) Conflicts related to the management of forest resources under different forest ownership types include boundary, forest resources ownership, resource use and revenue conflicts;

(xiii) The existing roles and responsibilities of the FBD and TFS seem to be different and no overlap between them. However, in practice TFS execute some roles and responsibilities which are beyond her jurisdiction;

(xiv) FBD has insufficient human and financial resources to be able to fulfil its duties successfully;

(xv) The study observed that one role of FBD "*Identification of research areas, prioritization and coordination of research undertaken by various institutions and organizations in Forestry and Beekeeping Sector*" is also listed among the roles and responsibilities of TAFORI;

(xvi) The establishment of TFS did not change the institutional set-up of forest management in the country. Presence of multiple institutions with different capacities has created challenges in managing forest resources efficiently and effectively. Therefore, the ongoing process of transforming TFS to the proposed TFBA is an important step towards improved forest management and administration;

(xvii) There are strengths, weaknesses, opportunities, and challenges related to TFS in the process of transformation of TFS to an Authority and paramilitary;

(xviii) Among others, the challenge is on how paramilitary system can integrate forest adjacent communities in forest management. Forest adjacent communities are important stakeholders who determine the outcome of forest management initiatives, therefore paramilitary system should not leadto exclusion of communities in forest management;

(xix) The existing Policy and legal framework in the country provide favourable environment for SFM. Despite that, factors contributing to unsustainable forest management include inadequate human and physical resources, inadequate human and physical resources, inadequacies in preparation and implementation of forest harvesting plans, benefit sharing, forest ownership and boundary conflicts.

4.2 Recommendations

Based on challenges related to management and administration of forest resources under different ownership types in Mainland Tanzania and in order to ensure the overall sustainability of forest resources for

the purpose of contributing to sustainable National development and economy the following recommendations are provided:

(i) The study recommends an investigation on a total of 116 NFRs (i.e. 3,045,998 ha) and 70 LAFRs (i.e. 295,502 ha) identified from existing literature for the purpose of establishing validity of this information, their where about and status; and subsequently make appropriate decisions on such FRs;

(ii) Forest uses involving tree cutting in protective forest and wildlife reserves (i.e. GRs, GCAs, NCA and NPs) that involve tree cutting is contrary to the Forest Act (2002) and Wildlife Conservation Act (2009), therefore necessary actions to terminate this need to be taken urgently;

(iii) Based on analysis of direct and indirect drivers of deforestation, the following sector-specific strategic interventions for addressing deforestation and forest degradation are proposed:

- Enhance education and awareness creation on the importance of forests, their sustainable use and consequences for their loss,
- Enhance effectiveness in Policy implementation and law enforcement,
- Enhance the involvement of adjacent communities with well-defined incentives and establishment of VLFRs/CFRs as much as possible,
- Enhance promotion on the use of efficient stoves,
- Enhance SFM (e.g. forest use should comply with approved harvesting plan),
- Introduce plantations and woodlots for wood energy,
- Collaborate with the energy sector to determine and monitor energy need and sources,
- Promote beekeeping and income-generating forest-friendly undertakings so as to improve the household economy,
- Sensitize politicians on the social, economic and environmental importance of forests and their role in

supporting life of the current and future generations so as to gain political support,

- Ensure degraded areas are rehabilitated, and
- Coordinate adequately with all relevant sectors to ensure forests are accrued by both the present and future generations;

(iv) Challenges facing wildlife corridors may be addressed as follows:

- Village participatory land-use planning and where necessary households may be relocated using appropriate legal procedures,
- Establish VLFRs or WMAs as deemed appropriate,
- Intensify management of FRs serving as a wildlife corridor, dispersal areas, buffer zones or migratory routes,
- Effective implementation of land use plans,
- Implementation of regulations - wildlife corridor, route and buffer zone (GN 123 of March 2018),
- Effective enforcement of wildlife and forest laws,
- Sensitization of local communities on the benefits of conservation, and
- Effective measures to prevent wildlife-human conflicts and wildlife encroachment on farmsteads;

(v) Forest data are important in forest management therefore data archiving and management should be improved;

(vi) The study recommends comprehensive inventory and preparation of database for VLFRs, sacred forests and PFs;

(vii) Information on status and trends of forest resources generated through National forest inventory are essential for strategic planning, management, decision making, and Policy development and implementation. Therefore, the second National forest inventory needs to be implemented urgently. The inventory should ensure that, (i) challenges during implementation of the first National forest inventory are carefully addressed; and (ii) forest inventory and forest cover monitoring designs are compatible;

(viii) Inadequate financial resources in forest management may be addressed by i) increasing budged allocation to TFS by considering the actual requirement for forest management, and ii) transform TFS to Authority for attaining full mandate to collect and use funds;

(ix) Inadequate financial resources for management of VLFRs may be addressed by creating a financial stream based on internal and external sources. External sources include financial support from various stakeholders, particularly the TaFF. TaFF should support management of protective VLFRs and priority should be given to forests with high externality values. The study recommends that apart from the current approach of providing funds on competitive basis, TaFF should develop a mechanism for supporting forests with higher externality values;

(x) Effective management of forest resources yield goods and services that support productivity of other important economic sectors including water and energy sectors. PES has the potential to provide financing to the forest sector yet the operational mechanisms have not been developed. Therefore, FBD should develop and coordinate implementation of PES mechanisms to generate financial resources for forest management. In addition, FBD should work with TaFF to develop and implement a plan for financing effective management of forest resources. Likewise, the EAMCEF may be financed through various modalities such as occasional National wide fund raising in order to boost its capital investment and ensure sustainable support of forest management activities in EAMs;

(xi) Inadequate human resources in forest management may be dealt with by transforming TFS Agency to an Authority with an anticipation that an Authority will have relatively higher level of control of recruitment process;

(xii) Inadequate human resources in management of VLFRs may be addressed for TFS or the anticipated Authority to establish a training programme to VNRC and other village members under forestry extension services. The Extension Unit should be

responsible for coordination and provision of all forestry training in villages in collaboration with other stakeholders such as NGOs;

(xiii) Gazettment of all ungazetted FRs should be completed;

(xiv) Weak law enforcement should be addressed by enhancing law enforcement;

(xv) Political interference should be addressed through enhance extension service to educate politicians on importance of forest management and conservation;

(xvi) Resource conflicts over ownership, use, and boundary may be addressed as follows:

- Support forest adjacent villages to prepare and implement village land use plans that show different land use categories in village land,
- Participatory resurvey of the forest to harmonize boundaries, and
- Forest boundary consolidation,
- Improve intra and inter-sectorial coordination through the establishment of stakeholders' forum that put all stakeholders together at least twice per year to discuss forest management challenges and defining solutions,
- For villages established within FRs, it is recommended that a thorough assessment be done to distinguish villages which settled in the area with formal government registration and those that settled without any legal base. Consequently, (i) area of FRs occupied by villages settling within FRs and are registered should be revoked and such FRs should be re-surveyed as long as such a decision does not result into major environmental consequences e.g. affect water sources; (ii) villages settling within FRs and are not registered should be evicted using appropriate mechanism;

(xvii) Inadequate community participation in the forest management may be addressed through one or a combination of the following:

- Improve Extension Unit for providing conservation education; and
- Enhance community participation in forest management through PFM;
- Signing and successful implementation of JFMA may increase revenue to VGs hence use such funds to support management activities for VLFRs;

(xviii) The study recommends criteria that may be used presently and in future in ownership, management objective and status of forests for the purpose of ensuring sustainability of forest resources. The study further recommends that for any VLFR to be transferred to CG, at least three criteria should be met, including seeking consent of the VG (i.e. villagers through Village Assembly). seeking consent of the village in changing ownership of VLFR is important because of the following:

- Setting aside VLFR is one of several land-use options that villagers may opt. Therefore, upgrading or changing ownership of the VLFRs may cause problems and make the process of creating new VLFRs difficult or even impossible in the future; and
- Some VLFRs have significantly contributed to improved livelihoods; hence changing ownership of such a forest may affect livelihoods and other accrued benefits;

(xix) In line with criteria for changing forest ownership, management objective and status, the study recommends the following changes to forest ownership, management objective and status:

- Ownership and management responsibilities of all LAFRs should be transferred from LGAs to CG under TFS,
- One NFRs to be changed from protective to productive FRs,
- Nine NFRs to be changed from productive to protective FRs,
- Nine NFRs to be changed from natural protective or productive to plantation FRs,
- Fine LAFRs to be changed from protective to plantation FRs,

- One LAFRs to be changed from productive forest to protective forest,
- Twenty-nineNational FRs to National nature FRs; some FRs are too small to as stand-alone nature FRs hence such FRs may be combined with others or combined with the existing nature FRs depending on viability in terms of proximity,
- Four NFRs from FRs to other land uses (i.e. revoke),
- Eight LAFRs to be changed from FR to other land uses (settlement, farmland and others),
- Eighty-two unreserved forests to be converted to NFRs or VLFRs. A decision on whether unreserved land to be upgraded to NFR or VLFR should be done in a participatory manner and in accordance with Part IV Section 23of the Forest Act Number 14 of 2002;

(xx) The study recommends that TFS should implement its roles as stated in Section 2.0 (Status and governance), Sub-section 2.1 (Declaration of Agency Status) of Executive Agencies (TFS) Establishment Order (GN 269 of 30/7/2010). The study further recommends that FBD roles should be stated clearly for the purpose of avoiding (see Box 2)

(xxi) In order to implement its new roles and responsibilities efficiently, staffing level and staff qualifications, infrastructure, tools, and equipment at FBD need to be improved. FBD will not be able to recruit staff up to District level, the use of taskforce involving technical staff from other institutions such as Universities, research centers and relevant NGOs for special tasks such as monitoring and evaluation of policy implementation as well as supervision of law enforcement can be used especially when a wide coverage is required. Accordingly, the study recommends that, FBD responsibilities of preparing/revising of guidelines, monitoring and evaluation of Policy implementation as well as supervision of law enforcement in the sector should be financed by TaFF since among other the fund aims to support sustainable use of forest resources. Supervision of law enforcement should

be done at least twice annually while monitoring and evaluation of Policy implementation should be done twice within five-year period;

(xxii) Furthermore, the study observed that one role of FBD "Identification of research areas, prioritization and coordination of research undertaken by various institutions and organizations in Forestry and Beekeeping Sector" is also listed among the roles and responsibilities of TAFORI. Since TAFORI is the government institution responsible to coordinate forest research in Tanzania, it is recommended that such role to be performed by TAFORI, instead of FBD;

(xxiii) This study supports the ongoing process of transforming TFS to an Authority and paramilitary under the MNRT due to strength and opportunities associated with TFS. Accordingly, it is recommended that, the process of transforming TFS to an Authority and paramilitary, TFS weaknesses and challenges should be addressed;

(xxiv) Forest adjacent communities are important stakeholders who determine the outcome of forest management initiatives, therefore paramilitary system should not lead to exclusion of communities in forest management. The process of establishment of paramilitary may benefit from existing paramilitary system within the wildlife sector, however care is needed in adoption of approaches due to differences between management of wildlife and forests and what they mean to livelihoods;

(xxv) The study proposes Policy statements and functions of prospective TFBA (see Box 3);

(xxvi) The study recommends that, amendment in Target II in the Policy implementation strategy should be "*Paramilitary* Authority *for management of all* public forests*, supporting the management of forests on the village and private lands* established by June 2021*"*. Currently, Target II reads: "Authority for management of all public forests established by June 2021";

(xxvii) The findings revealed that the developed forest management plans had exclusively focus on single forest site being managed; and none of them have analyzed actual wood demand. Therefore, forest management planning process should determine actual wood demand and integrate other sources of wood production outside the FRs. Furthermore, as a short-term measure, a pessimistic allowable cut value of 1 m3 ha^{-1} $year^{-1}$ should be adopted to ensure that harvesting does not exceed allowable cut as much as possible. Studies on regenerative and growth capacity, representing wide ecological variabilities and forest formation should be carried out and more precise allowable cut should be developed as a long-term solution. Such studies will also inform the forest management planning guidelines;

(xxviii) To address challenges related to disproportional distribution of staff and facilities within TFS centers, TFS should deliberately re-distribute staff and movable physical assets/facilities basing on forest size being managed i.e. large size of forest being managed - high number of staff and physical resources. Likewise, as a long-term solution, sufficient working tools, equipment and machinery (vehicles, heavy plants, tractors) should be procured and adequate staff with required skills to manage forest and bee resources should be recruited;

(xxix) Guidelines for carrying out forest resources assessment, preparing and implementing harvesting plans should be revised to clearly state the standard approaches to be used. This should include sampling design, allowable error, and actual measurements, and defining harvestable stocking levels. In addition, it is recommended that an effective monitoring system to guide harvesting implementation including data verification process for NFRs and VLFRs be developed and implemented on a regular basis;

(xxx) Findings have shown that deforestation is higher in unreserved forests compared to forests under effective management including VLFRs, LAFRs and NFRs. Likewise, about 55% of total forest

cover is unreserved. To comply to Forest Act of 2002 and ensure effective management of forest resources, it is recommended that all unreserved forests be put under effective management of either village or CGs depending on the inherent ecological values of different forest sites.

REFERENCES

Abdallah, J. M. and Monela, G. C. (2007). Overview of Miombo Woodlands in Tanzania. Working Papers of the Finnish Forest Research Institute 9-23.

Amente, G. and Tadesse, T. (2004). The contribution of participatory forest management towards good governance: the case of WAJIB approach in Ethiopia," in Proceedings of the 5th Annual Conference of the Ethiopian Foresters Association on "New Forest Management: The Contribution of Forests to the National Economy", Addis Ababa, Ethiopia.

Armitage, I. (1998). Guidelines for the Management of Tropical Forests: The production of wood. Food & Agriculture Org.

Ashagre, B. B., Platts, P. J., Njana, M., Burgess, N. D., Balmford, A., Turner, K. R., and Schaafsma, M. (2018). Integrated modeling for economic valuation of the role of forests and 2 woodlands in drinking water provision to two African cities. Ecosystem Services 32: 50 - 61.

Blomley T, Iddi S (2009). Participatory forest management in Tanzania: 1993-2009: Lessons learned and experiences to date. URT: Ministry of Natural Resources and Tourism, Forestry and Beekeeping.

Caro, T., Jones, T. and Davenport, T.R.B. (2009). Realities of documenting wildlife corridors in tropical countries. Biol. Conserv., 142, 2807–2811.

Eakin, E. (2017). The effectiveness of wildlife corridors in biological conservation, a case study of the African elephant (Loxodonta africana) in Tanzania.

Hariohay, K. M. (2013). Impacts of human settlements and land use changes in Kwakuchinja wildlife corridor, Northern Tanzania (Master's thesis, Institutt for biologi).

Hariohay, K. M., Fyumagwa, R. D., Kideghesho, J. R., & Røskaft, E. (2017). Assessing crop and livestock losses along the Rungwa-Katavi Wildlife Corridor, South-Western Tanzania. International Journal of Biodiversity and Conservation, 9(8), 273-283.

Indufor (2012). Financing for sustainable forest management in Tanzania. Country case study.

Jones, T., Care, T. and Davenport, T. R. B. (2009). Wildlife corridors in Tanzania. Tanzania Wildlife Research Institute (TAWIRI), Arusha, 60 pp.

Kideghesho, J. R. (2015). Realities on deforestation in Tanzania—trends, drivers, implications and the way forward. In Precious Forests-Precious Earth. InTech

Makunga, J. E., & Misana, S. B. (2017). The Extent and Drivers of Deforestation and Forest Degradation in Masito-Ugalla Ecosystem, Kigoma Region, Tanzania. Open Journal of Forestry, 7(02), 285.

Malimbwi, R. E., Shemwetta, D. T. K., Zahabu, E., Kingazi, S. P., Katani, J. Z., and Silayo, D. A. (2005). Summary Report of Forest Inventory for the Eleven Districts of Eastern and Southern Tanzania. Forestry and Beekeeping Division, Dar es Salaam, Tanzania.

Malimbwi RE, Zahabu E, Misana S (2005). Charcola Potential of Miombo Woodlands at Kitulangalo, Tanzania. J Trop For Sci 18:121–126.

Massawe, G. M. (2010). Impacts of human activities on the conservation of igando-igawa wildlife corridor in Njombe and Mbarali Districts, Tanzania. (Masters dissertation, Sokoine University of Agriculture).

Misana, S. B. (1999). Deforestation in Tanzania: a development crisis. Issue 13 of Social science research report series. Organization for Social Science Research in Eastern and Southern Africa.

MNRT (2015). National Forest Resources Monitoring and Assessment of Mainland Tanzania (NAFORMA) Main Results. Tanzania Forest Services, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania. 106 pp.

Morrison, T. A. and Douglas, T. B. (2014). Connectivity and bottlenecks in a migratory

Mugasha, W.A., Bollandsås, O.M., Gobakken, T., Zahabu, E., Katani, J.Z. and Eid, T., (2016). Decision-support tool for management of miombo woodlands: a matrix model approach. Southern Forests: a Journal of Forest Science. doi: 10.2989/20702620.2016.1233776.

Mugasha WA, Eid T, Bollandsås OM, Mbwambo L (2017). Modelling diameter growth, mortality and recruitment of trees in miombo woodlands of Tanzania. South For 79:.doi: 10.2989/20702620.2016.1233755.

Mutolib A (2017). Forest Ownership Conflict Between A Local Community and The State: A Case Study in Dharmasraya, Indonesia.

NBS (National Bureau of Statistics). (2019). Tanzania in figures 2019.

Nelson, F. (2007). Are large mammal declines in Africa inevitable? Afr. J. Ecol., 46, 3–4.

Njamasi, Y. R. (2015). The impact of human activities on wildlife in Kwakuchinja migratory corridor-Tarangire/Manyara ecosystem (tme), Northern Tanzania (Doctoral dissertation, Sokoine University of Agriculture.).

Njana, M. A., Kajembe, G. C. and R. E. Malimbwi (2013). Are miombo woodlands vital to livelihoods of rural households? Evidence from Urumwa and surrounding communities, Tabora, Tanzania. Journal of Forest, Trees and Livelihoods 22 (2): 124 - 140.

Njana, M. A. and Sanga, G. (2018). Economic value of ecosystem services from Eastern Arc Mountains of Tanzania. A consultancy report for EAMCEF (Eastern Arc Mountains Conservation Endowment Fund). 174 pp.

Ngaga, Y. M., Kajembe, G. C., Chamshama, S.A.O., Treue, T., Meilby, H., Lund, J. F., Theilade, I., Burgess, N and Brockington, D. (2013). Applied Research in Participatory Forest Management (PFM): Assessing under which conditions PFM contribute to the goals of poverty reduction, sustainable forest management and improved local governance in Tanzania. Project Terminal Report.

Prabhu R, Colfer C, Shepherd G (1998). Criteria and indicators for sustainable forest management: new findings from CIFOR's Forest Management Unit Level Research. Rural Development Forestry Network UK.

Springate, B.O., Dev, O. P., Yadav, N. and Soussan, J. (2003). Community forest management in the middle hills of Nepal: the changing context. Forest and Livelihoods, 3: 5–20.

TFS (2017a). (TFS Business plan and associated budget for 2017/2012)

TFS (2017b). Midterm evaluation of Tanzania Forest Services (TFS) Agency. Report. (Source: http://www.tfs.go.tz/en/resources/view/mipango-ya-matumizi-bora-ya-ardhi-kwa-vijiji-vinavyozuizunguka-hifadhi-ya-s, posted online on 17 July, 2018 and accessed on 18 July 2018).

Treue, T., Y. M. Ngaga, H. Meilby, J. F. Lund, G. Kajembe, S. Iddi, T. Blomley, I. Theilade, S. A. O. Chamshama, K. Skeie, M. A. Njana, S. E. Ngowi, J. A. K. Isango and N. D. Burgess (2014). "Does participatory forest management promote sustainable forest utilization in Tanzania?" *International Forestry Review* 16: 23-38.

URT (1998). The Forest Policy of Tanzania. United Republic of Tanzania (URT), Ministry of Natural Resources and Tourism (MNRT). Dar es Salaam, Tanzania: Government Printer.

URT (1999). The Land Act No. 4 of 1999. Dar es Salaam.

URT (2002). The Forest Act No. 14 of 2002.United Republic of Tanzania (URT), Ministry of Natural Resources and Tourism (MNRT). Government Printer, Dar es Salaam, Tanzania.

URT (2007). Assessment and Evaluation of the Wildlife Management Areas in Tanzania. Ministry of Natural Resources and Tourism. Wildlife Division. Dar es Salaam, Tanzania.

URT (2007). Community Based Forest Management guidelines for the establishment of Village and Forest Reserves and Community Forest Reserves. United Republic of Tanzania (URT), Ministry of

Natural Resources and Tourism (MNRT). Government Printer, Dar es Salaam, Tanzania. 56.

URT (2010). Mining Act of 2010. Dar es Salaam.

URT (2016). Uluguru Nature Forest Reserve Management Plan. 157 pp.

URT (2017). Mid-term Evaluation of Tanzania Forest Services Agency Report. Dar es Salaam.

URT (2017). Mount Rungwe Nature Forest Reserve Management Plan. 133 pp.

URT (United Republic of Tanzania). (2017). 2016/17 Annual agriculture sample survey crop and livestock report.

URT (United Republic of Tanzania). (2017). Tanzania's Forest Reference Emissions Level submission to UNFCCC. 48 pp.

UN (United Nations). (2008). Resolution adopted by the General Assembly 62/98: Non-legally binding instruments on all types of forests.

URT (United Republic of Tanzania). (2003). Framework for participatory forest management. Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania.

USAID (2014). Enduimet Wildlife Management Area.www.tzdpg.or.tz/.../.

USAID (2014). Performance Evaluation of the Scaling up Conservation and Livelihoods Efforts in Northern Tanzania. Project Final Evaluation Report. https://www.climatelinks.org/sites/default/files/asset/document/tanzania%20final%20eval.pdf.

USAID (2014). Terms of Reference for the Greater Katavi Mahale Gombe Ecosystem Conservation Technical Team (GKMGECTT). – AUGUST 2013

Van de Perre, F., Adriaensen, F., Songorwa, A. N., & Leirs, H. (2014). Locating elephant corridors between Saadani National Park and the Wami-Mbiki Wildlife Management A rea, Tanzania. African journal of ecology, 52(4), 448-457.

Weiss, S. (2013). Spatial Perceptions of Wildlife Crop Raiding in the Jangwani Corridor, Tanzania."Thesis.Colorado State University,

2013. Independent Study Project (ISP) Collection, I Apr. 2013. <http:/ /digitalcollcctions.sit.edu/isp collection/ 1508/>.

WTTC (World Travel and Tourism Council). (2015).

Zella, A. Y. (2016). Impacts of Socio-Economic Activities in Managing Selous-Niassa Wildlife Corridor. A Dissertation Submitted in Partial Fulfillment of the Requirement for the Degree of Master of Science in Environmental and Natural Resource Economics. Sokoine University of Agriculture. Morogoro, Tanzania.

APPENDICES

Appendix 1: List of visited Districts and FRs/BRs and wildlife corridors

SN	Zone	SN	Region	SN	District	Visited FRs/BRs and wildlife corridors		
						SN	FR name	Ownership type
1	Eastern	1	Pwani	1	Rufiji	1	Katundu NFR	CG
						2	Utete NFR	CG
						3	Namakutwa/Namuete NFR	CG
						4	Mohoro NFR	CG
						5	Mohoro River NFR	CG
						6	Nyamkongo VLFR	VG
						7	Yelya VLFR	VG
						8	Warm water spring	CG
				2	Kibiti	9	Rufiji delta NFR	CG
						10	Mchungu NFR	CG
						11	Kikale NFR	CG
						12	Ngulakula NFR	CG
						13	Nyumburuni LAFR	LGA
				3	Mkuranga	14	Vikindu NFR	CG
						15	Masangania NFR	CG
				4	Kisarawe	16	Pugu NFR	CG
						17	Kazimzumbwi NFR	CG
						18	Ruvu South NFR	CG
				5	Bagamoyo	19	Kikoka NFR	CG
						20	Mangrove NFR	CG
						21	Uzigua NFR	CG
						22	Mandela (Unreserved forest)	VG
						23	Kwaruhombo (Unreserved forest)	VG
				6	Kibaha	24	Ruvu North Plantation	CG
		2	Dar es Salaam	7	Temeke	25	Mangrove NFR	CG
				8	Kigamboni	26	Mangrove NFR	CG
				9	Ilala	27	Mangrove NFR	CG
				10	Ubungo	28	Kinyerezi NFR	CG
		3	Morogoro	11	Morogoro	29	Mindu NFR	CG
						30	Kitulanghalo NFR	CG
						31	Dindili NFR	CG
						32	Uluguru NFR	CG
						33	Nguru ya ndege LAFR	LGA
						34	Morogoro Fuelwood Plantation	CG
				12	Mvomero	35	Dunduma NFR	CG
						36	Mkingu NFR	CG
						37	Mtibwa/Pagale Teak Plantation	CG
				13	Kilosa	38	Kihiriri NFR	CG
						39	Pala Mountain NFR	CG

SN	Zone	SN	Region	SN	District	Visited FRs/BRs and wildlife corridors		
						SN	FR name	Ownership type
						40	Ukwiva NFR	CG
						41	Ulaya-Mbuyuni VLFR	VG
						42	Msimba VLFR	VG
						43	Kilosa town (Unreserved forest)	VG
						44	Kipekenya- Chabima-Dodoma-Isanga (Unreserved forest)	VG
				14	Kilombero	45	Nyanganje NFR	CG
						46	Iwonde NFR	CG
				15	Ulanga	47	Nawenge NFR	CG
						48	Mahenge Scarp NFR	CG
						49	Nambiga NFR	CG
				16	Malinyi		-	
2	Southern	4	Lindi	17	Kilwa	50	Mitalule NFR	CG
						51	Likonde VLFR	VG
						52	Kilwa mangrove NFR	CG
						53	Pindiro Forets NFR	CG
				18	Lindi	54	Rondo NFR	CG
						55	Mihima VLFR	VG
						56	Mangrove NFR	CG
						57	Litipo NFR	CG
				18	Liwale	58	Nyera/Kiperere NFR	CG
						59	Mbila VLFR	VG
						60	Mikunya VLFR	VG
				20	Ruangwa	61	Matete VLFR	VG
		5	Mtwara	21	Tandahimba	62	Litehu LAFR	LGA
						63	Makonde scarp NFR	CG
						64	Makonde scarp II NFR	CG
						65	Makonde Scarp III NFR	CG
				22	Masasi	66	Masasi Hill NFR	CG
						67	Makonde scarp III NFR	CG
				23	Newala	68	Mkunya NFR	CG
						69	Uhoha VLFR	VG
		6	Ruvuma	24	Tunduru	70	Ipapa VLFR	VG
						71	Muhuwesi NFR	CG
						72	Nandembo NFR	CG
				25	Namtumbo	73	Undendeule NFR	CG
						74	Kipiki NFR	CG
						75	Mtaungana VLFR	VG
						76	Matogoro B NFR	CG
				26	Songea	77	Maposeni LAFR	LGA
						78	Machnjioni NFR	CG
						79	Songea fuel NFR	CG
						80	Makonde Scarp I NFR	CG
						81	Lupagalo VLFR	VG
3	Southern highlands	7	Iringa	27	Iringa			
				28	Kilolo	82	Kitonga Kihulula LAFR	LGA
						83	Image NFR	CG
						84	Ikokoto VLFR	VG
						85	Kising'a Lugalo NFR	CG

SN	Zone	SN	Region	SN	District	Visited FRs/BRs and wildlife corridors		
						SN	FR name	Ownership type
						86	Kitonga Kihulula LAFR	LGA
						87	New Dabaga Ulongambi NFR	CG
		8	Mbeya	29	Mbalali	88	Ilembo Usafwa NFR	CG
						89	Chimala scarp NFR	CG
						90	Mbeya 1 VLFR	VG
				30	Mbeya	91	Mbeya Range NFR	CG
				31	Rungwe	92	Livingstone NFR	CG
						93	Rungwe NFR	CG
				32	Kyela			
		9	Njombe	33	Ludewa	94	Mshora NFR	CG
						95	Mvava NFR	CG
				34	Njombe			
		10	Rukwa	35	Nkasi	96	Chala NFR	CG
						97	Kupama VLFR	VG
						98	Kalambo NFR	CG
				36	Kalambo	99	Chamweni VLFR	VG
						100	Nandeka VLFR	VG
				37	Sumbawanga	101	Ilemba LAFR	LGA
						102	Lyambalyambamfipa LAFR	LGA
		11	Songwe	38	Mbozi	103	Forela VLFR	VG
						104	Itanzu VLFR	VG
						105	Isalala NFR	CG
				39	Chunya	106	North Lupa NFR	CG
				40	Songwe	107	Itengu NFR	CG
						108	Patamela NFR	CG
						109	Mbiwe NFR	CG
						110	Patamela VLFR	VG
				41	Chunya	111	North lupa NFR	CG
						112	Patamela NFR	CG
						113	Mfili LAFR	LGA
				42	Momba			
4	Western	12	Tabora	43	Kaliua	114	Ulyankulu LAFR	LGA
						115	Igombe River NFR	CG
						116	Mpanda Line NFR	CG
				44	Uyui	117	Simbo NFR	CG
						118	Uyui Kigwa Luhuga NFR	CG
						119	Kizengi VLFR	VG
				45	Sikonge	120	Goweko LAFR	LGA
						121	Impembapazi LAFR	LGA
						122	Inyonga NFR	CG
						123	Swangala NFR	CG
						124	Ugunda LAFR	LGA
				46	Nzega	125	Mwanhala LAFR	LGA
						126	Ngukumo LAFR	LGA
				47	Tabora	127	Ntalikwa NFR	CG
						128	Uruma NFR	CG
		13	Katavi	48	Mlele	129	Inyonga NFR	CG
						130	Rungwa River NFR	CG
						131	Mulele Hills NFR	CG

SN	Zone	SN	Region	SN	District	Visited FRs/BRs and wildlife corridors		
						SN	FR name	Ownership type
						132	Kamsisi VLFR	VG
				49	Mpanda	133	Nort East Mpanda NFR	CG
						134	Usaginia NFR	CG
				50	Tanganyika	135	Kabungu NFR	CG
						136	Tongwe East LAFR	LGA
						137	Tongwe West LAFR	LGA
		14	Kigoma	51	Uvinza	138	Uvinza NFR	CG
						139	Ilunde NFR	CG
						140	Masanza NFR	CG
						141	Lugufu NFR	CG
						142	Mkuti NFR	CG
						143	Chakulu VLFR	VG
				52	Kasulu	144	South Makere NFR	CG
						145	North Makere NFR	CG
						146	Kalimungoma VLFR	VG
				52	Kibondo	147	Mwalye NFR	CG
						148	Kalembe VLFR	VG
						149	Bizilankweto A NFR	CG
				54	Kigoma			
				55	Kakonko			
		15	Shinyanga	56	Shinyanga	150	Mwantini NFR	CG
						151	Manongho NFR	CG
						152	Buyange LAFR	LGA
						153	Lubaga NFR	CG
				57	Kahama	154	Mkweni NFR	CG
						155	Mpunze LAFR	LGA
						156	Ushetu/Ubangwe LAFR	LGA
5	Lake	16	Geita	58	Geita	157	Usindakwe NFR	CG
						158	Geita NFR	CG
						159	Ruande LAFR	LGA
				59	Chato	160	BiharamuloNFR	CG
				60	Bukombe	161	Bukombe Mbogwe LAFR	LGA
						162	Ushirombo LAFR	LGA
		17	Kagera	61	Biharamulo	163	Nyantakara NFR	CG
				62	Muleba	164	Ruiga NFR	CG
				63	Missenyi	165	Bushenya LAFR	LGA
						166	Minziro NFR	CG
						167	Munene NFR	CG
		18	Mwanza	64	Kwimba	168	Mwamakelemu LAFR	LGA
						169	Igwata NFR	CG
				65	Magu	170	Sayaka NFR	CG
				66	Ilemela			
				67	Nyamagana			
		19	Simiyu	68	Meatu	171	Mwamishali LAFR	LGA
		20	Mara	69	Butiama	172	Kyarano NFR	CG
6	Central zone	21	Dodoma	70	Mpwapwa	173	Kiborian proposed NFR	CG

SN	Zone	SN	Region	SN	District	Visited FRs/BRs and wildlife corridors		
						SN	FR name	Ownership type
						174	Sangandunghu VLFR	VG
				71	Kongwa	175	Kiborian proposed NFR	CG
				72	Kondoa	176	Chemichemi NFR	CG
						177	Irangi Scarp NFR	CG
				73	Chamwino	178	Chenene East NFR	CG
				74	Bahi	179	Chenene West NFR	CG
				75	Dodoma	180	Kigongkwe NFR	CG
						181	Dodoma reservior NFR	CG
		22	Singida	76	Manyoni	182	Mpola VLFR	VG
						183	Nkonko VLFR	VG
						184	Aghondi BR	CG
				77	Ikungi	185	Mnyughe proposed NFR	CG
				78	Singida	186	Mgori VLFR	VG
				79	Iramba	187	Senkenke proposed LAFR	LGA
		23	Manyara	80	Kiteto	188	SULEDO VLFR	VG
						189	Embroy Multangos proposed VLFR	VG
				81	Hanang	190	Dirma VLFR	VG
						191	Mount Hanang NFR	CG
				82	Babati	192	Bereko NFR	CG
						193	Duru Haitemba VLFR	VG
						194	Sarame VLFR	VG
				83	Mbulu	195	Nouh NFR	CG
				84	Simanjiro			
7	Northern	24	Arusha	85	Karatu	196	Kilimamoja VLFR	VG
						197	Upper kitete VLFR	VG
				86	Longido	198	Kitumbeine LAFR	LGA
						199	Tanganyeti wildlife corridor	Undefined
						200	Kimokoa wildlife corridor	Undefined
				87	Monduli	201	Mungere VLFR	VG
						202	Selela VLFR	VG
				88	Ngorongoro		-	
				89	Arusha	203	Kiutu LAFR	LGA
				90	Arumeru	204	Usa Spring NFR	CG
						205	Lake Duruti NFR	CG
		25	Kilimanjaro	91	Moshi	206	Rau NFR	CG
				92	Mwanga	207	Unreserved forest in Lambo Village	VG
						208	Kivirenge NFR	CG
						209	Kileo LAFR	LGA
				93	Same	210	Mroro VLFR	VG
						211	Koko Hill NFR	CG
						212	Mkonga NFR	CG
		26	Tanga	94	Lushoto	213	Magamba NFR	CG
						214	Shambalai NFR	CG
				95	Korogwe			
				96	Muheza	215	Misozwe VLFR	VG

SN	Zone	SN	Region	SN	District	Visited FRs/BRs and wildlife corridors		
						SN	FR name	Ownership type
						216	Mlinga NFR	CG
				97	Mkinga	217	Mwanyumba proposed VLFR	VG
				98	Pangani	218	Mkwaja VLFR	VG
						219	Pangani Mangrove NFR	CG
				99	Handeni	220	Handeni Hill NFR	CG

Appendix 2: List of stakeholders interviewed in person

SN	Consulted people	Region	District	Institution	Capacity
1	Theophil Sam	Pwani	Rufiji	TFS	DFM
2	Jonas Nambua	Pwani	Rufiji	DC	DFO
3	Sudi Abdallah Kinawilo	Pwani	Rufiji	VNRC	Chairperson
4	Salima Salum	Pwani	Rufiji	VNRC	Secretary
5	Mathew Ntigwigwa	Pwani	Kibiti	TFS	DFM
6	Christina Mohamed	Pwani	Mkuranga	TFS	DFM
7	Obadia Kalala	Pwani	Mkuranga	DC	DFO
8	NanziaShedura	Pwani	Kisarawe	TFS	DFM
9	Reginald Limo	Pwani	Kisarawe	DC	DFO
10	CalorineMalundo	Pwani	Kibaha	TFS	Zonal Manager
11	Ally Halfan	Pwani	Bagamoyo	TFS	DFM
12	David George	Pwani	Bagamoyo	TFS	DFM
13	Prof. Dos Santos Silayo	Dar es Salaam	Temeke	TFS	Chief Executive Officer
14	Francis Kiondo	Dar es Salaam	Temeke	TFS	DFM
15	Zawadi Mbwambo	Dar es Salaam	Temeke	TFS	Director of Resource Management
16	Mohamed Kilongo	Dar es Salaam	Temeke	TFS	Director of Planning and Resource Utilization
17	Devis Mlowe	Dar es Salaam	Ilala	TFS	DFM
18	Yasin Mkwizu	Dar es Salaam	Ilala	Norwegian Embassy	Environment and Climate Change Programme Officer
19	Asta Ingvild Langhus	Dar es Salaam	Ilala	Norwegian Embassy	Environment, Climate Change and Natural Resources Counsellor
20	Dotto Ndumbikwa	Dar es Salaam	Kinondoni	TFS	DFM
21	Prof. Pius Yanda	Dar es Salaam	Kinondoni	Institute of Resource Assessment University of Dar es Salaam	Director of Centre of Climate Change

SN	Consulted people	Region	District	Institution	Capacity
22	Dr. Peter Ndaki	Dar es Salaam	Kinondoni	Institute of Resource Assessment University of Dar es Salaam	Lecturer of Centre of Climate Change
23	Edmund Mabuye	Dar es Salaam	Kinondoni	Institute of Resource Assessment University of Dar es Salaam	Ph.D. student at Centre of Climate Change
24	Mabula Misingwi	Morogoro	Morogoro	Tanzania Wildlife Authority	Director of Protection Services
25	Jonas Miala	Morogoro	Morogoro	TFS	DFM
26	Bernadeta Chile	Morogoro	Morogoro	TFS	Conservator
27	Elias Mwaijele	Morogoro	Morogoro	TFS	Assistant Plantation Forest Manager
28	Husna Msagati	Morogoro	Mvomero	TFS	DFM
29	Edward Kimwery	Morogoro	Mvomero	DC	DFO
30	Abeid Kindo	Morogoro	Mvomero	TFS	Conservator
31	Abdallah Mchomvu	Morogoro	Mvomero	TFS	Plantation Forest Manager
32	Samuel Nyabange	Morogoro	Kilosa	TFS	DFM
33	Eliakimu Enos	Morogoro	Kilosa	Tanzania Forest Conservation Group	Forest Officer
34	Mohamed Hussein	Morogoro	Kilosa	VNRC	Chairperson
35	Bakari Said	Morogoro	Kilosa	VNRC	Secretary
36	Auckland Maingwa	Morogoro	Kilosa	Mikumi NP	Game Officer
37	Iddi Liwiga	Morogoro	Kilombero	TFS	Assistant DFMs
38	Magai Chamba	Morogoro	Kilombero	DC	DFO
39	Lukero Matimbwi	Morogoro	Kilombero	DC	DFO
40	John Kalabaka	Morogoro	Ulanga	TFS	DFM
41	Amani Mramba	Morogoro	Malinyi	TFS	DFM
42	Thadeus Macha	Morogoro	Malinyi	DC	DFO
43	Adam S. Matoya	Mtwara	Tandahimba	DC	Forest Officer
44	Mohamed Mkubangwa	Mtwara	Tandahimba	TFS	DFM
45	Mussak Mshana	Mtwara	Masasi	TFS	Beekeeping Officer
46	Timotheo A. Abeli	Mtwara	Newala	DC	Forest Officer
47	Amasha B. Singa	Mtwara	Newala	TFS	Forest Officer
48	Edwin Peter	Ruvuma	Songea	VG	Chairperson

SN	Consulted people	Region	District	Institution	Capacity
49	Anthony P. Opiyo	Ruvuma	Songea	TFS	Forest Officer
50	Vincent Mgimbo	Ruvuma	Songea	VG	Village Excecutive Officer
51	Dorotea Mnuka	Ruvuma	Songea	VG	VG member
52	Renista Komba	Ruvuma	Songea	VG	VG member
53	John Nchimbi	Ruvuma	Songea	VG	VG member
54	Zakayo Y. Kaunda	Ruvuma	Songea	DC	DFO
55	Juma O. Mbwambo	Ruvuma	Songea	TFS	DFM
56	Stanley Balwenji	Ruvuma	Tunduru	DC	TA
57	Gasto Temu	Ruvuma	Tunduru	DC	Forest Officer
58	Hussein Awami	Ruvuma	Namtumbo	VG	Chairperson
59	Ayubu T. Mhuwa	Ruvuma	Namtumbo	VG	Village Executive Officer
60	Abdurabi Amri	Ruvuma	Namtumbo	VG	Chairperson
61	Atanasi Mbilino	Ruvuma	Namtumbo	VG	Secretary
62	Vincent Walter	Ruvuma	Namtumbo	TFS	DFM
63	Gravas Mwalyombo	Ruvuma	Namtumbo	VG	DFO
64	Jacqueline Mgumba	Ruvuma	Namtumbo	VG	Village Executive Officer
65	Abdethmani S. Kilundi	Lindi	Kilwa	VG	Chairperson
66	Mkwepua Mkwepu	Lindi	Kilwa	VG	Village Executive Officer
67	AbedisKilunda	Lindi	Kilwa	VG	Secretary
68	Njabha M. Lyatora	Lindi	Kilwa	DC	DFO
69	Saidi S. Ngalanga	Lindi	Kilwa	VG	VNRC member
70	Nassoro A. Mzui	Lindi	Liwale	DC	DFO
71	Hamis H. Ntila	Lindi	Liwale	VG	Chairperson
72	Rajabu M Kibou	Lindi	Liwale	VG	VG member
73	Omary Shamte	Lindi	Liwale	VG	Chairperson
74	Andrew Jakob	Lindi	Liwale	DC	Forest Officer
75	Petro A. Mboya	Lindi	Liwale	DC	Forest Officer
76	Solomon Masangya	Lindi	Ruangwa	DC	District Natural Resource Officer
77	Yona Bayo	Lindi	Ruangwa	DC	Beekeeping Officer
78	Victor A. Shali	Lindi	Lindi	DC	District Natural Resource Officer
79	Charles Mwaipopo	Lindi	Lindi	DC	DFO
80	Uetropia Mrema	Iringa	Iringa	TFS	DFM
81	Joackim Mshana	Iringa	Iringa	DC	DFO
82	Joshua Sute	Iringa	Kilolo	VG	VG member

SN	Consulted people	Region	District	Institution	Capacity
83	Mezek Mhekwa	Iringa	Kilolo	VG	VG member
84	Jokas Ngenza	Iringa	Kilolo	VG	VG member
85	Felix Lyambafu	Iringa	Kilolo	VG	VG member
86	Lucan Makonope	Njombe	Ludewa	DC	DFO
87	Denis P. Molel	Njombe	Ludewa	TFS	DFM
88	Zawana Donald Makamba	Njombe	Ludewa	VG	Ward Executive Officer
89	Winfred Mwaganga	Njombe	Ludewa	VG	Chairperson
90	Audatus Kashamakula	Njombe	Njombe	TFS	DFM
91	Augustino J. Chalamwa	Mbeya	Mbalali	VG	Chairperson
92	Philipo P. Zacharia	Mbeya	Mbalali	VG	Village Excecutive Officer
93	Blastus Lahanku	Mbeya	Mbalali	VG	VG member
94	Faines Nkiku	Mbeya	Mbalali	VG	VG member
95	Patric Charles	Mbeya	Mbalali	DC	DFO
96	Allen J. miti	Mbeya	Mbalali	TFS	DFM
97	Innocent Lupembe	Mbeya	Mbeya	TFS	Ass. Zonal Manager
98	Ebrantino Mgiye	Mbeya	Mbeya	TFS	Zonal Manager
99	Chesco Japhale	Mbeya	Rungwe	VG	VG member
100	Zabron Maiko	Mbeya	Rungwe	VG	VG member
101	Zabron Mwaka	Mbeya	Rungwe	VG	VG member
102	Heshima Ofkaye	Mbeya	Rungwe	VG	VG member
103	CastoryMakewa	Mbeya	Rungwe	DC	DFO
104	Rabiel Mosha	Mbeya	Rungwe	TFS	DFM
105	Essau Elly	Songwe	Chunya	VG	Chairperson
106	Neema L Kawawa	Songwe	Chunya	VG	VG member
107	Rehema Mwabulambo	Songwe	Chunya	DC	DFO
108	Khalifa Munisi	Songwe	Chunya	TFS	DFM
109	Endwin Msuya	Songwe	Chunya	TFS	Forest Officer
110	Amani J. Nzunda	Songwe	Mbozi	VG	Chairperson
111	Zakayo Mwamahonje	Songwe	Mbozi	DC	DFO
112	Kawia Alex	Songwe	Mbozi	TFS	Forest Officer
113	Silas S. Meshilieki	Songwe	Songwe	TFS	DFM
114	Riberatus Sebastian	Songwe	Songwe	VG	VG member
115	Frank Z. Yalukwa	Songwe	Songwe	VG	VG member
116	Magdalena Mzana	Songwe	Songwe	VG	VG member

SN	Consulted people	Region	District	Institution	Capacity
117	Fraviani Msuwila	Songwe	Songwe	VG	VG member
118	Zenobi Chalwa	Rukwa	Kalambo	VG	Chairperson
119	Botack Mgogo	Rukwa	Kalambo	VG	Chairperson
120	Geofrey Aman Mwasomola	Rukwa	Kalambo	DC	DFO
121	Helman Juliano Ndazi	Rukwa	Kalambo	TFS	DFM
122	Protas Kalunde	Rukwa	Nkasi	TFS	Forest Officer
123	Erick Karangwa	Rukwa	Nkasi	DC	District Natural Resource Officer
124	Oyitha Stephano	Rukwa	Sumbawanga	VG	Village Excecutive Officer
125	Leonard Mwanakange	Rukwa	Sumbawanga	VG	VG member
126	Peter	Rukwa	Sumbawanga	VG	VG member
127	Chande A. juma	Rukwa	Sumbawanga	DC	District Natural Resource Officer
128	Enock Tango	Rukwa	Sumbawanga	TFS	DFM
129	Israel A. Kiani	Rukwa	Sumbawanga	DC	DFO
130	Job Kiungo	Tabora	Tabora	RAS Tabora	Miombo Woodland Project Coordinator
131	Abrahaman Mndeme	Tabora	Tabora	RAS Tabora	Sector Coordination (Forest) Coordinator
132	Valentine Msusa	Tabora	Tabora	TFS	Zonal Manager
133	Rogers Nyinondi	Tabora	Tabora	TFS	Forest Officer
134	Nuru Tengeza	Tabora	Tabora	TFS	Forest Officer
135	Thomas Wambura	Tabora	Tabora	TFS	Forest Officer
136	Frank Morice	Tabora	Tabora	TFS	Forest Officer
137	Jackson Temu	Tabora	Kaliua	TFS	DFM
138	Bennet Kamara	Tabora	Kaliua	DC	DFO
139	Sadoki Gobanya	Tabora	Kaliua	TFS	Forest Officer
140	Simon Habibu	Tabora	Kaliua	Village Natural Resource Committee	Member Village Natural Resource Committee
141	Vicent Revocatus	Tabora	Kaliua	Village Natural Resource Committee	Secretary
142	Leah Peter Mshangila	Tabora	Uyui	VG	Village Excecutive Officer
143	Salum R. Kengele	Tabora	Uyui	VG	Chairperson
144	Geofrey Salum	Tabora	Uyui	VG	Secretary
145	Linda A. Shio	Tabora	Uyui	TFS	Beekeeping Officer

SN	Consulted people	Region	District	Institution	Capacity
146	Elieza Kibiki	Tabora	Sikonge	TFS	Forest Assistant
147	Fransis Mpanda	Tabora	Sikonge	TFS	Forest Assistant
148	Fredy Masanja	Tabora	Sikonge	DC	Forest Assistant
149	Mohamed H. Hassani	Tabora	Nzega	TFS	DFM
150	Ally Zuberi Omari	Katavi	Mlele	DC	District Excecutive Officer (DEO)
151	Lucas Romkama	Katavi	Mlele	VG	Village Excecutive Officer
152	Abas G Ngangale	Katavi	Mlele	TFS	DFM
153	Joseph Mtafya	Katavi	Mlele	VG	Chairperson
154	John Mpigangoma	Katavi	Mlele	VG	Chairperson
155	Christopher Phoye	Katavi	Mpanda	TFS	Beekeeping Officer
156	Iddy R. Iddy	Katavi	Mpanda	TFS	Forest Assistant
157	Mustapha J. Abeid	Katavi	Tanganyika	TFS	DFM
158	Ephraim Luhwago	Katavi	Tanganyika	DC	District Excecutive Officer (DEO)
159	Deus Mwasalanga	Kigoma	Uvinza	TFS	DFM
160	Alphonce Africanus	Kigoma	Uvinza	VG	Chairperson
161	Maleadala Hassan	Kigoma	Uvinza	VG	Village Excecutive Officer
162	Adam Halenga	Kigoma	Uvinza	DC	DFO
163	Hassani Omari Liangwana	Kigoma	Kasulu	DC	DFO
164	Modesta Macha	Kigoma	Kasulu	TFS	Forest Assistant
165	Bernard Ernest	Kigoma	Kasulu	VG	Chairperson
166	Nicholas Gosbert	Kigoma	Kasulu	VG	Forest Guard
167	Damali Vitus Bitalibube	Kigoma	Kasulu	VG	Village Excecutive Officer
168	Ashery K. Petro	Kigoma	Kigoma	TFS	Forest Officer
169	Bareth George Ng'umbi	Kigoma	Kibondo	TFS	DFM
170	Jerica Mahano	Kigoma	Kibondo	VG	VNRC member
171	Edasia L. Kitwe	Kigoma	Kibondo	VG	Village Executive Officer
172	Deusi M	Kigoma	Kibondo	VG	Chairperson
173	Rogers Asilia	Kigoma	Kibondo	TFS	Forest Officer
174	Sarah Jackson	Kigoma	Kibondo	VG	Village Executive Officer
175	Yena Kabusi	Kigoma	Buhigwe	TFS	Forest Officer
176	Mussa Iland	Kigoma	Buhigwe	DC	District Natural Resource Officer

SN	Consulted people	Region	District	Institution	Capacity
177	Medard Nicomed	Kigoma	Kakonko	TFS	DFM
178	Ramadhani J. Mziray	Shinyanga	Shinyanga	TFS	DFM
179	Msengi Lyanga	Shinyanga	Shinyanga	TFS	Forest Assistant
180	Juma Y. Ally	Shinyanga	Kahama	TFS	DFM
181	Thadeo Elias	Shinyanga	Kahama	DC	DFO
182	Ester Josephat	Shinyanga	Kahama	TFS	Forest Assistant
183	Fredy Ndandika	Geita	Geita	TFS	DFM
184	Elizakayo Y. Shuma	Geita	Geita	DC	DFO
185	Aisha Msemo	Geita	Geita	DC	Forest Officer
186	Justice Shekumkau	Geita	Geita	DC	Forest Officer
187	Patric Mbuga	Geita	Chato	DC	DFO
188	Gerald Katunzi	Geita	Chato	TFS	Beekeeping Officer
189	Erick Arnold Ngongi	Geita	Bukombe	DC	DFO
190	David R. Kambalaje	Geita	Bukombe	TFS	DFM
191	Fredy Ndandika	Geita	Nyang'wale	TFS	DFM
192	Emanuel Komba	Kagera	Biharamulo	TFS	DFM
193	Mashaka Mnembuka	Kagera	Muleba	TFS	DFM
194	Diana J. Chacha	Kagera	Muleba	TFS	Forest Officer
195	Alois Mchonde	Kagera	Missenyi	DC	Forest Officer
196	Godmercy Sinsakala	Kagera	Missenyi	TFS	DFM
197	Bernard K. Mwigulu	Kagera	Missenyi	TFS	Conservator
198	Hassan Omary	Kagera	Missenyi	TFS	Forest Officer
199	Abdul Erasm Buretta	Mwanza	Kwimba	TFS	DFM
200	Julius W. Swai	Mwanza	Kwimba	DC	DFO
201	John E. Masamu	Mwanza	Magu	TFS	DFM
202	Wilson W. Kiondo	Mwanza	Magu	DC	DFO
203	Saidi Singano	Mwanza	Ilemela	TFS	Forest Officer
204	Moshi Thomas	Mwanza	Ilemela	TFS	Forest Officer
205	Cosmas Ndakidemi	Mwanza	Ilemela	TFS	Plantation Forest Manager
206	Pius Mbilla	Mwanza	Ilemela	TFS	Forest Officer
207	Pius Mbilla	Mwanza	Nyamagana	TFS	Forest Officer
208	Ibrahim Kibwanga Mbwana	Simiyu	Meatu	TFS	DFM
209	Timotheo Maduhu	Simiyu	Meatu	DC	DFO
210	Revocatus Meney	Simiyu	Meatu	DC	District Game Officer (DGO)

SN	Consulted people	Region	District	Institution	Capacity
211	Saida Abeid	Simiyu	Bariadi	TFS	DFM
212	Fredrick Shirima	Simiyu	Bariadi	DC	DFO
213	Goodluck Malisa	Simiyu	Itilima	DC	DFO
214	Abdul Mbinji	Simiyu	Itilima	TFS	DFM
215	Kedmon M. Chipanyamba	Mara	Butiama	DC	District Natural Resource Officer
216	Mrisho J. Athuman	Mara	Butiama	TFS	DFM
217	Oscar Condraid	Mara	Bunda	TFS	DFM
218	Kitende P. Marwa	Mara	Bunda	DC	DFO
219	Dr. Ezekiel Mwakalukwa	Dodoma	Dodoma	FBD, MNRT	Director of FBD
220	Okudo Silvanus	Dodoma	Dodoma	WD, MNRT	Director of WD
221	Phillip Ndilahomba	Dodoma	Dodoma	FBD, MNRT	Assistant Director of Beekeeping Development
222	Emmanuel Msoffe	Dodoma	Dodoma	FBD, MNRT	Forest Officer
223	Edwin Nsoko	Dodoma	Dodoma	FBD, MNRT	Forest Officer
224	Rweyemamu	Dodoma	Dodoma	FBD, MNRT	Legal Officer
225	Dr. Iddi Mfunda	Dodoma	Dodoma	MNRT	Director of Policy and Planning
226	Dr. Andrew Komba	Dodoma	Dodoma	PO-RALG	Director of Sector Coordination
227	Stanford Kway	Dodoma	Dodoma	PO-RALG	Sector Coordination (Forest) Officer
228	Rogasian Philip	Dodoma	Dodoma	PO-RALG	Forest Officer
229	Mathew Kiondo	Dodoma	Dodoma	TFS	Zonal Manager
230	Haruna Luganga	Dodoma	Dodoma	TFS	Assistant Zonal Manager
231	Ally Kimor	Dodoma	Dodoma	TFS	Forest Assistant
232	Hamisi Gyori	Dodoma	Chamwino	TFS	Forest Officer
233	Alexander Mboya	Dodoma	Chamwino	TFS	DFM
234	Saimon Mataholi	Dodoma	Chamwino	TFS	Forest Assistant
235	Salum Kabanda	Dodoma	Mpwapwa	TFS	DFM
236	James Makori	Dodoma	Mpwapwa	TFS	Forest Officer
237	Byela Kahangwa	Dodoma	Mpwapwa	TFS	Forest Officer
238	Oscar Malima	Dodoma	Mpwapwa	DC	DFO
239	Emmanuela Millana	Dodoma	Mpwapwa	TFS	Beekeeping Officer
240	Dickson Mwangalim	Dodoma	Mpwapwa	VNRC	Chairperson
241	Joseph Mpukulu	Dodoma	Mpwapwa	VG	Village Executive Officer
242	Philimon Mlingwa	Dodoma	Mpwapwa	VNRC	VNRC member

SN	Consulted people	Region	District	Institution	Capacity
243	Kedimon Habeli	Dodoma	Mpwapwa	VG	Chairperson
244	Kelvin Maliase	Dodoma	Mpwapwa	VNRC	VNRC member
245	Baraka Mtewa	Dodoma	Kongwa	TFS	DFM
246	Francis Sekwao	Dodoma	Kongwa	DC	District Natural Resource Officer
247	Boniface Mgagi	Dodoma	Kongwa	TFS	Forest Assistant
248	Julius Matle	Dodoma	Kondoa	TFS	Forest Assistant
249	Emmanuel Kasisi	Dodoma	Kondoa	DC	DFO
250	Abdallah Hussein	Dodoma	Kondoa	VG	Secretary
251	Juma Salimu	Dodoma	Kondoa	VG	Secretary
252	Mohamed Haruna	Dodoma	Kondoa	VG	Chairperson
253	Abdu Issa	Dodoma	Kondoa	VNRC	VNRC member
254	Hamisi Sadiki	Dodoma	Kondoa	VNRC	VNRC member
255	Hamisi Omary	Singida	Manyoni	DC	DFO
256	Anro Kaulagwa	Singida	Manyoni	DC	Ag. District Game Officer (Retired)
257	Juma Mchafu	Singida	Manyoni	TFS	DFM
258	Sospeter Simon	Singida	Manyoni	DC	Forest Assistant
259	Mussa Mussa	Singida	Manyoni	VG	Village Excecutive Officer
260	Jonathan Chimabae	Singida	Manyoni	Village Natural Resouces Committee	VNRC member
261	Adrian Nyatunyi	Singida	Manyoni	Village Natural Resouces Committee	VNRC member
262	Samson Lymo	Singida	Ikungi	TFS	DFM
263	Wilson Dikokoti	Singida	Ikungi	TFS	Beekeeping Officer
264	Peter Muro	Singida	Ikungi	DC	DFO
265	Bahati H. Mkungile	Singida	Ikungi	Ward Development Committee	Ward Executive Officer
266	Justine G. Musulima	Singida	Ikungi	VG	Chairperson
267	Stephen Nkuwi	Singida	Ikungi	VG	Village Excecutive Officer
268	Athumani Hamisi	Singida	Singida	TFS	Forest Assistant
269	Benitho Gidion	Singida	Singida	DC	Forest Officer
270	Boni Zakayo	Singida	Singida	VNRC	VNRC member
271	Charles J. Nkomalio	Singida	Singida	VG	Chairperson

SN	Consulted people	Region	District	Institution	Capacity
272	Samweli Aron	Singida	Singida	Village Natural Resouces Committee	VNRC member
273	Thuwabu Mnyau	Singida	Singida	Ward Development Committee	Ward Executive Officer
274	Hassani Mtimangi	Singida	Singida	Ward Development Committee	Ward Chancellor
275	Shaban J.	Singida	Iramba	TFS	DFM
276	Dawson Byarugaba	Singida	Iramba	TFS	Principal Forest Assistant
277	Joyce Chifunda	Singida	Iramba	TFS	Forest Assistant
278	John Masatu	Manyara	Hanang	TFS	Principal Forest Assistant
279	Boniface Lameck	Manyara	Hanang	DC	DFO
280	Joseph R. Mduma	Manyara	Hanang	TFS	Conservator
281	Augustino Majawa	Manyara	Hanang	VG	Chairperson
282	Nobert Gapchujiga	Manyara	Hanang	VNRC	VNRC member
283	Elias Sweti	Manyara	Kiteto	TFS	DFM
284	Sebastian Nkini	Manyara	Kiteto	DC	DFO
285	George Mwasandepa	Manyara	Kiteto	TFS	Forest Officer
286	Athuman Msimbazi	Manyara	Kiteto	SULEDO - Zonal Executive Committee	Secretary
287	Alais Nangoro	Manyara	Kiteto	SULEDO - Zonal Executive Committee	Manager
288	Frank Kaipai	Manyara	Kiteto	SULEDO - Zonal Executive Committee	Chairperson
289	Isaya Saitabau	Manyara	Kiteto	SULEDO - Zonal Executive Committee	Accountant
290	Stanslaus L. Sasita	Manyara	Babati	TFS	DFM
291	Paul S. Izungo	Manyara	Babati	TFS	Beekeeping Officer
292	Paulina Hussein	Manyara	Babati	TFS	Forest Officer
293	Alex G. Bazubike	Manyara	Babati	DC	DFO
294	Bariki Mringa	Manyara	Babati	TFS	Forest Assistant
295	Ayubu S. Sabuni	Manyara	Babati	TFS	Forest Assistant

SN	Consulted people	Region	District	Institution	Capacity
296	Michael Gwandu	Manyara	Babati	Regional Secretariat	Forest Officer
297	Eliasi Bombo	Manyara	Babati	VG	Chairperson
298	Dickson John	Manyara	Babati	VG	Village Executive Officer
299	Onesmo Bombo	Manyara	Babati	VNRC	VNRC member
300	Ama Qambeshi	Manyara	Babati	VNRC	VNRC member
301	Yona Lagweni	Manyara	Babati	VNRC	VNRC member
302	Joseph E. Bura	Manyara	Babati	VG	Chairperson
303	Rehema Rashid	Manyara	Babati	VG	Village Executive Officer
304	Hamisi Juma	Manyara	Babati	VNRC	VNRC member
305	Theofila Ferdinand	Manyara	Babati	VNRC	VNRC member
306	Hamisi J. Majengo	Manyara	Babati	VNRC	VNRC member
307	Wiliam Kaaya	Manyara	Mbulu	TFS	DFM
308	Evaristus Aloyce	Manyara	Mbulu	TFS	Forest Officer
309	Enos Samamba	Manyara	Mbulu	TFS	Forest Officer
310	Peter Maro	Manyara	Mbulu	TFS	Forest Officer
311	Halifa Nyella	Manyara	Simanjiro	DC	DFO
312	aloyce Mwana	Manyara	Simanjiro	DC	District Game Officer (DGO)
313	Albert Masao	Manyara	Simanjiro	TFS	DFM
314	Reginald Hallu	Arusha	Karatu	DC	DFO
315	Elipenda Wavii	Arusha	Karatu	TFS	DFM
316	Islael J. Lulu	Arusha	Karatu	VG	Chairperson
317	Herman I Sulle	Arusha	Karatu	VNRC	VNRC member
318	Izack John	Arusha	Karatu	VNRC	VNRC member
319	Sixbert Qambo	Arusha	Karatu	VNRC	VNRC member
320	Festo Bernado	Arusha	Karatu	VNRC	VNRC member
321	Emmanuel Masaki	Arusha	Longido	TFS	DFM
322	Lilian Mollel	Arusha	Longido	DC	DFO
323	Lukumay L. Saiguran	Arusha	Longido	DC	District Game Officer (DGO)
324	Boaz H. Mtokoma	Arusha	Longido	DC	DFO
325	Consolatha Mtui	Arusha	Longido	DC	Game warden
326	Adili Mwanga	Arusha	Monduli	DC	District Natural Resource Officer
327	S.B. Mawanja	Arusha	Monduli	DC	District Game Officer (DGO)
328	N.D. Mawanja	Arusha	Monduli	DC	DFM
329	J.B. Maimu	Arusha	Monduli	TFS	DFO

SN	Consulted people	Region	District	Institution	Capacity
330	Amina Singaile	Arusha	Monduli	VG	Village Executive Officer
331	Gidion Mollel	Arusha	Monduli	VNRC	VNRC member
332	Joyce Justine	Arusha	Monduli	VG	Village Executive Officer
333	Leiyan Ng'aboli	Arusha	Monduli	VG	Chairperson
334	Endeso Nangufu	Arusha	Monduli	VNRC	VNRC member
335	Major Ngorenya	Arusha	Ngorongoro	TFS	DFM
336	David Maghembe	Arusha	Ngorongoro	DC	DFO
337	Joseph Masawe	Arusha	Arusha	DC	DFO
338	John Shirima	Arusha	Arusha	DC	District Game Officer (DGO)
339	Charles Munguri	Arusha	Arumeru	DC	District Natural Resource Officer
340	Peter Myonga	Arusha	Arumeru	TFS	DFM
341	Messia Paul	Kilimanjaro	Moshi	TFS	DFM
342	Emanuel J. Kiyengi	Kilimanjaro	Moshi	Regional Secretariat	Forest Officer
343	Andambike Mgogo	Kilimanjaro	Mwanga	TFS	DFM
344	Godlisten Mushi	Kilimanjaro	Mwanga	DC	DFO
345	Amos Mchome	Kilimanjaro	Mwanga	TFS	Forest Assistant
346	Bahati N John	Kilimanjaro	Mwanga	DC	Game Warden
347	Mr. Shilogile	Kilimanjaro	Same	TFS	Zonal Manager
348	John Nuko	Kilimanjaro	Same	DC	District Natural Resource Officer
349	Ally Mugwaya	Kilimanjaro	Same	DC	DFO
350	Thabiti H. Mwilenga	Kilimanjaro	Same	TFS	DFM
351	Sifael Yusuph	Kilimanjaro	Same	TFS	Forest Assistant
352	Sosthnes Rwamugira	Kilimanjaro	Same	TFS	Conservator
353	Prisca sima	Kilimanjaro	Same	DC	District Game Officer (DGO)
354	Zena Shabani	Kilimanjaro	Same	VG	Village Executive Officer
355	Hamisi Sungura	Kilimanjaro	Same	VNRC	VNRC member
356	Hamisi Seleman	Kilimanjaro	Same	VNRC	VNRC member
357	Mary Swai	Kilimanjaro	Same	Ward Development Committee	Ward Executive Officer
358	Hassan Sengerere	Tanga	Lushoto	TFS	Beekeeping Officer
359	Samiji E. Mlemba	Tanga	Lushoto	TFS	Assistant Conservator

SN	Consulted people	Region	District	Institution	Capacity
360	Mbelwa Kimweri	Tanga	Korogwe	TFS	Forest Officer
361	Mponie Mwaluseke	Tanga	Korogwe	TFS	DFM
362	Hadija B. Kihamia	Tanga	Korogwe	DC	Forest Assistant
363	Jackson F. Saria	Tanga	Muheza	TFS	DFM
364	Msumari I. S. Msumari	Tanga	Muheza	DC	DFO
365	Obadia R. Msemo	Tanga	Muheza	DC	Forest Officer
366	Andrea E. Abraham	Tanga	Muheza	VG	Village Executive Officer
367	David Mganga	Tanga	Muheza	VNRC	VNRC member
368	Mariamu Mkwema	Tanga	Muheza	VNRC	VNRC member
369	Juma Mdenya	Tanga	Muheza	VNRC	VNRC member
370	Ally Seleman	Tanga	Muheza	VNRC	VNRC member
371	Arcardo Ngumbala	Tanga	Mkinga	TFS	DFM
372	Francis Tunguli	Tanga	Mkinga	TFS	Forest Assistant
373	Yohana Daffa	Tanga	Mkinga	TFS	Forest Assistant
374	Joel Tarimo	Tanga	Mkinga	TFS	Beekeeping Officer
375	Erasto Kalist	Tanga	Mkinga	DC	District Game Officer (DGO)
376	Mwarabu Jumbe	Tanga	Mkinga	DC	DFO
377	Tyson J. Msigwa	Tanga	Mkinga	VG	Village Executive Officer
378	Majaliwa Chimatilo	Tanga	Mkinga	VG	Secretary
379	Jumanne Abdallah	Tanga	Mkinga	VNRC	VNRC member
380	Mwajuma Iddrisa	Tanga	Mkinga	VNRC	VNRC member
381	Joseph Peter	Tanga	Mkinga	VNRC	VNRC member
382	Twahiru Y. Mkongo	Tanga	Pangani	DC	DFO
383	Burhani H. Ngulungu	Tanga	Pangani	DC	District Game Officer (DGO)
384	Musa T. Sanga	Tanga	Pangani	TFS	Forest Officer
385	Lais Lukumay	Tanga	Pangani	TFS	DFM
386	Sekani Ridhiwani	Tanga	Pangani	VG	Chairperson
387	Maguru Sefu	Tanga	Pangani	VNRC	VNRC member
388	Rose Christopher	Tanga	Pangani	VG	Chairperson
389	Mohamedi Swalehe	Tanga	Pangani	VNRC	VNRC member
390	I.H. Mwinyi	Tanga	Pangani	VNRC	VNRC member
391	Majaliwa Maginga	Tanga	Handeni	TFS	DFM
392	Michael Mkomwa	Tanga	Handeni	TFS	Beekeeping Officer
393	Elinihaki Mdee	Tanga	Handeni	DC	DFO

Appendix 3: List of stakeholders interviewed through telephone call

SN	Consulted people	Region	District	Institution	Capacity
1	Mukama Kusaga	Pwani	Kibaha	TFS	DFM
2	Fortunate Senya	Pwani	Kibaha	TFS	Plantation Forest Manager
3	Mbwana Shabani	Pwani	Mafia	TFS	DFM
4	Wahida Salim	Morogoro	Morogoro	DC	DFO
5	FikiriMaiba	Morogoro	Gairo	TFS	DFM
6	Mohamed Msalu	Morogoro	Gairo	TFS	Plantation Forest Manager
7	Stanley Kweka	Morogoro	Kilombero	TFS	DFM
8	Kenedy Haule	Morogoro	Kilombero	Kilombero Valley Teak Company	Public Relations Officer
9	Peter Nguyeje	Mtwara	Mtwara	TFS	DFM
10	Lomboay Kiroka	Mtwara	Nanyumbu	TFS	DFM
11	Festo N. Chaula	Ruvuma	Mbinga	TFS	DFM
12	John Elisha	Ruvuma	Nyasa	TFS	DFM
13	Samuel Tamka	Lindi	Nachingea	TFS	DFM
14	Charles Kaselya	Iringa	Mufindi	TFS	DFM
15	Moses Ndowu	Njombe	Makete	TFS	DFM
16	Lulesu	Njombe	Makete	DC	DFO
17	Evance Mosha	Njombe	Wang'ing'ombe	TFS	DFM
18	James Wambura	Mbeya	Kyela	TFS	DFM
19	Mbilinyi Ueunice	Mbeya	Mbeya	TFS	DFM
20	Shida E. Mbwile	Songwe	Momba	TFS	DFM
21	Omar A. Ali	Songwe	Ileje	TFS	DFM
22	Williard Mwamlima	Tabora	Tabora	DC	District Natural Resource Officer
23	Jahulula Edward	Tabora	Igunga	DC	District Executive Officer (DEO)
24	Herry Mwangili	Tabora	Igunga	TFS	Forest Officer
25	Fadhili L. Maliki	Tabora	Urambo	TFS	DFM
26	Jacob Mbeshi	Tabora	Urambo	DC	DFO
27	Fransis Rugemalira	Tabora	Urambo	TFS	DFM

SN	Consulted people	Region	District	Institution	Capacity
28	Jonas M. Mwasyoke	Tabora	Nsimbo	TFS	DFM
29	William S. Siko	Kigoma	Buhigwe	TFS	DFM
30	Agnes E. Akida	Shinyanga	Kishapu	DC	DFO
31	Simon Peter	Shinyanga	Kishapu	TFS	DFM
32	Emanuel S. Buai	Geita	Mbongwe	DC	DFO
33	Yohana B. France	Geita	Mbongwe	TFS	DFM
34	Samson John	Kagera	Biharamulo	DC	DFO
35	Wilson Mgishagwe	Kagera	Muleba	DC	DFO
36	James Matekele	Kagera	Missenyi	DC	DFO
37	Braison P. Mkiwa	Kagera	Bukoba	TFS	DFM
38	Oscar Patson	Kagera	Ngara	TFS	DFM
39	James Alloyce	Kagera	Kyerwa	TFS	DFM
40	Thomas A. Mahenge	Kagera	Kyerwa	DC	DFO
41	Sunday Anut	Kagera	Karagwe	TFS	DFM
42	Anicet Hayaya	Mwanza	Misungwi	DC	DFO
43	Emmilian F. Alex	Mwanza	Misungwi	TFS	DFM
44	Renaltus Deus	Mwanza	Ukerewe	TFS	DFM
45	Zebedayo M. Timotheo	Mwanza	Ukerewe	DC	District Game Officer (DGO)
46	Paulo Pontian	Mwanza	Sengerema	DC	DFO
47	Vedasto M. Emay	Mwanza	Sengerema	TFS	DFM
48	Bruno Kawiti	Simiyu	Busega	TFS	DFM
49	Charles Majura	Simiyu	Busega	DC	DFO
50	Anthony Paul Maganga	Simiyu	Maswa	DC	DFO
51	John Kindia	Mara	Musoma	DC	DFO
52	Anthony Matiko	Mara	Musoma	TFS	DFM
53	Fidelis Bujiku	Mara	Musoma	DC	Beekeeping Officer
54	Hamadi A. Muhana	Mara	Rorya	DC	DFO
55	Johnstone Silvery	Mara	Rorya	TFS	DFM

SN	Consulted people	Region	District	Institution	Capacity
56	Godfrey Adriano Nyakunga	Mara	Serengeti	TFS	DFM
57	Aloyce Paschal	Mara	Serengeti	DC	DFO
58	Charless Masawe	Mara	Tarime	TFS	DFM
59	Hendris Lewis	Mara	Tarime	DC	DFO
60	Jen Maguo	Dodoma	Chamwino	DC	DFO
61	Mr. Hashimu	Dodoma	Kondoa	TFS	DFM
62	Sted John Kasekwa	Dodoma	Chemba	TFS	DFM
63	Zena Shomari	Dodoma	Chemba	DC	DFO
64	Samson Kabata	Dodoma	Bahi	DC	DFO
65	Yohanes Sanga	Dodoma	Bahi	TFS	DFM
66	Anatoli Paulo Masaka	Singida	Mkalama	TFS	DFM
67	Joseph Kimaro	Manyara	Mbulu	DC	DFO
68	Stanley Mruma	Arusha	Karatu	DC	DFO
69	Robart Faustine	Arusha	Arumeru	TFS	Plantation Forest Manager
70	Evalyn Mboya	Kilimanjaro	Hai	TFS	DFM
71	Magesa Mabeko	Kilimanjaro	Hai	TFS	Plantation Forest Manager
72	Innocent Chagenda	Kilimanjaro	Siha	TFS	DFM
73	Godson Ulomi	Kilimanjaro	Moshi	TFS	DFM
74	Anna Kilawe	Kilimanjaro	Rombo	TFS	DFM
75	Saidi Msemo	Kilimanjaro	Rombo	DC	DFO
76	Ernest Madata	Kilimanjaro	Rombo	TFS	Plantation Forest Manager
77	Mfaume Julius Mhonda	Tanga	Lushoto	DC	DFO
78	Noel Kombe	Tanga	Korogwe	DC	Forest Officer
79	Pergrin Mushi	Tanga	Korogwe	TFS	Plantation Forest Manager
80	Fabian Mukome	Tanga	Korogwe	TFS	Conservator
81	Rashid Shekifunge	Tanga	Muheza	TFS	DFM
82	Elineema S. Mwasalanga	Tanga	Muheza	TFS	Plantation Forest Manager
83	Isac bob Matunda	Tanga	Muheza	TFS	Assistant Conservator

SN	Consulted people	Region	District	Institution	Capacity
84	Rawrance Brighton	Tanga	Tanga	TFS	DFM
85	Aneny John Nyirenda	Tanga	Tanga	CC	District Natural Resource Officer
86	Bakari Mohamed	Tanga	Tanga	TFS	Mangrove forest manager
87	Peter Fitwangile	Tanga	Kilindi	TFS	DFM
88	Adam Silvester Enock	Tanga	Kilindi	DC	DFO

Appendix 4: Data collection tools

4.1 Checklist for in depth interview with NGOs/projects/institutions deals with facilitating the establishment of the WMAs

Section A: General information

SN	Item	Name/Number
1.	Date	
2.	Name of the NGO/project/institution	
3.	Name of interviewee	
4.	Mobile number of the interviewee	
5.	Name of the interviewer	

Section B: Questions

SN	Questions	Response
1.	Your organization/project/institution is working in which districts?	
2.	Which criteria did you use to select the aforementioned districts?	
3	How many villages is your organization/project/institution is working with?	
4.	Which criteria did you use to select those villages?	
5.	How many WMAs have already declared or gazetted? **(Make sure you collect shapefiles or coordinates of all VLFRs)**	
6.	What are the challenges facing villages in the management and utilization of the WMAs?	
7.	What kinds of support do villages need to address those challenges?	
8.	What is the best way of assisting villages in addressing those challenges?	
9.	What are your opinions about the capacity of the villages to manage WMAs?	
10.	What are your opinions about the contribution of the DC in the management of the WMAs?	
11.	Are there any unreserved forests with higher ecological potential in your project area?	
12.	Do you think how unreserved forests in your project areas can be secured?	
13.	What are your future plans about the establishment of the new WMAs?	

4.2 Checklist for in depth interview with NGOs/projects/institutions deals with facilitating the establishment of the VLFRs

Section A: General information

SN	Item	Name/ Number
1.	Date	
2.	Name of the NGO/project/institution	
3.	Name of interviewee	
4.	Mobile number of the interviewee	
5.	Name of the interviewer	

Section B: Questions

SN	Questions	Response
1.	Your organization/project/institution is working in which districts?	
2.	Which criteria did you use to select the aforementioned districts?	
3	How many villages is your organization/project/institution is working with?	
4.	Which criteria did you use to select those villages?	
5.	How many VLFRs have already declared or gazetted? **(Make sure you collect shape files or coordinates of all VLFRs)**	
6.	What are the challenges facing villages in the management and utilization of the VLFRs?	
7.	What kinds of support do villages need to address those challenges?	
8.	What is the best way of assisting villages in addressing those challenges?	
9.	What are your opinions about the capacity of the villages to manage VLFRs?	
10.	What are your opinions about the contribution of the DC in the management of the VLFRs?	
11.	Are there any unreserved forests with higher ecological potential in your project area?	
12.	Do you think how unreserved forests in your project areas can be secured?	
13.	What are your future plans about the establishment of the new VLFRs?	

4.3 Checklist for TFS

1. Are existing roles, responsibility and power of FBD and TFS in the forest management in conflict or overlapping?
2. If YES, mention conflicts or overlapping and how they affect the core functions of FBD or TFS? What should be done to rectify?
3. With examples, what revenue related conflicts exist between TFS and other forest owners/stakeholders?
4. With examples, what forest boundary related conflicts exist between TFS and other forest owners?
5. With examples, what land-use conflicts are escalated by increasing demand for land for other uses?
6. What is the advantages and disadvantages of agency and authority over each other?
7. Which forest types/ownership will be managed under a paramilitary approach?
8. What is the status of TFS opting paramilitary approach in forest management?
9. What is the status of implementing JFMAs?
10. How does TFS assist LGA and VG to protect forests under their jurisdiction?

Issues raised in the TFS strategic plan (July 2014 – June 2019) which needs clarification

1. Organization structure not harmonized; how is the organization structure a constraint (how is it and how is supposed to be?)
2. Inadequate community support programme; how community support programme is working now?
3. Conflicting interests of different stakeholders in forest management: Which interests of other stakeholders that differ from those of TFS and how should be done to resolve the challenge?
4. Difficult in land acquisition: How TFS has encountered these difficulties in acquiring land for expansion of the FRs and what was the basis of selecting those areas?

4.4 Checklist for FBD

1. What are the roles and responsibilities of FBD over management of the CGFR, LAFRs,and VLFRs?
2. What is the status of the NAFOBEDA?
3. Are existing roles, responsibility and power of FBD and TFS in the forest management in conflict or overlapping?
4. If there is any conflict or overlap, how these conflicts or overlap affect the core functions of FBD or TFS?
5. What should be done to rectify these conflicts/overlaps?
6. What are the key issues need to be considered for sustainable management and utilization of forest resources under different ownership?
7. How harvesting of the forest products in the reserved (including VLFRs, CGFRs,and LAFRs) and unreserved forests are regulated?
8. How forest harvesting plans are approved to allow its implementation to take off?
9. How the harvesting of trees in the WMA is regulated?
10. What are the best ways to assist LGA and VG to protect forests under their jurisdiction?

4.5 Checklist for WD

1. How the management of wildlife under different institutions (e.g. NPs under TANAPA, GCA,and GRs under TAWA, Ngororongo under NCAA, and WMA under villages) are coordinated?
2. Why did the sector decide to establish TAWA?
3. How the idea to establish paramilitary started?
4. Why was it started?
5. How paramilitary works with Authorized Association in the management of the WMAs?
6. What are the challenges of paramilitary in managing wildlife under different ownership?
7. How does WD support WMAs in protecting wildlife resources?

4.6 Checklist for TAWA

1. What are the roles of TAWA over management of the wildlife in open areas and WMA?
2. What is the advantages and disadvantages ofAuthority?
3. How the idea to establish paramilitary started?
4. How paramilitary works with Authorized Association in the management of the WMAs?
5. What are the challenges of paramilitary in managing wildlife under different ownership?
6. What is the existing plan of expanding wildlife protected areas?
7. How many wildlife corridors are under legal protection, and what are the plans for securing unprotected ones?
8. What are the best ways to assist WMAs to protect wildlife resources under their jurisdiction?

4.7 Checklist for academicians and researchers

1. What are your comments on existing forest tenure regimes – i.e. forest ownership and management in Tanzania?
2. What do you say about the capacity of the District and VGs in the management of LAFRs and VLFRs, respectively?
3. How should the VG and DC be assisted to effectively manage the VLFRs?
4. How should the unreserved forests on village lands with higher ecological potential (e.g. wildlife corridors, catchment values, endemic species,etc) be managed sustainably?
5. How should the forests under local and VGs be harvested on a sustainable basis (focus on harvesting plan – inventory and yield estimation methods, procedures issuing of harvesting license, and harvesting supervision?
6. Comment on the upgrading of the VLFRs and LAFRs toNationalFRs and its socio-economic and legal implications?
7. What is the implication of paramilitary arrangement in forest management across different forest tenure regimes?

8. What do you comment about the fragmentation of forest management (presence of multiple government sectors/ Department)?
9. What arethe best ways of managing forest resources in the country on a sustainable basis?

Status and ecological potential of forest resources and their sustainable management in Mainland Tanzania

Form 1: CBFM

Name of respondent:	
Name of organization/institution:	
Mobile:	
Position of respondent:	
Reporting Period:	

SN	Item	Responses
1	District (Name)	
2	Village (Name)	
3	Start of the CBFM process (Year)	
4	Funding Agency	
5	Village Land Use Plan conducted (Yes/No)	
6	Certificate of village Land (Yes/No)	
7	Size of VLFR (Ha.)	
8	Name of the VLFR	
9	Eastings (For any point of the VLFR - a center is most preferred)	
10	Northings (For any point in the VLFR - a center is most preferred)	
11	Forest Harvesting Plan Prepared (Yes/No)	
12	Harvesting Plan Prepared (Year)	
13	VLFR Declaration (Year)	
14	VLFR Gazetted by FBD (Yes/No)	
15	VLFR Gazettement (Year)	
16	Forest Boundary Marked by Beacons (Yes/No)	
17	Forest Boundary Cleared (Yes/No/Part)	

18	Management objective of VLFR (1=production, 2=protection, 3=Both)	
19	Forest Management Plan and Bylaws revised (Year)	
20	Harvesting in the VLFR started (Yes/No)	
21	Starting of Harvesting (Year)	
22	Farming in the VLFR (Yes/No)	
23	Settlement in the VLFR (Yes/No)	
24	Mining in the VLFR (Yes/No)	
25	Illegal tree cutting in the VLFR (Yes/No)	
26	Illegal Charcoal Production in the VLFR (Yes/No)	
27	Grazing in the VLFR (Yes/No)	
28	Livestock kraals/bomas in the VLFR (Yes/No)	
29	Forest Fires Incidences in the VLFR (Yes/No)	
30	Level of VLFR Degradation (1=Severe, 2=Moderate, 3=Low)	
31	Coverage of LAFR destruction (1=<25%, 2= 25-50%, 3=50-75%, 4=>75%)	
32	Existence of the Boundary Conflict (Yes/No)	
33	Existence of the resource use conflicts (Yes/No)	
34	Existence of Conflicts over forest ownership (Yes/No)	
35	Remarks (if any)	

Status and ecological potential of forest resources and their sustainable management in Mainland Tanzania

Form 2: WMA

Name of respondent:	
Name of organization/institution:	
Mobile:	
Position of respondent:	
Reporting Period:	

SN	Item	Response
1	District (Name)	
2	Name of WMA	
3	Name of Protected Area adjacent to WMA	
4	Start of the WMA process (Year)	

SN	Item	Response
5	Funding Agency	
6	Number of Villages forms WMA	
7	Name of Villages forms WMA	
8	Size of WMA (Ha.)	
9	Eastings (For any point of the WMA - a center is most preferred)	
10	Northings (For any point in the WMA - a center is most preferred)	
11	WMA Gazettement (Year)	
12	WMA Boundary Marked by Beacons (Yes/No)	
13	Tourism Hunting in the WMA started (Yes/No)	
14	Farming in the WMA (Yes/No)	
15	Settlement in the WMA (Yes/No)	
16	Mining in the WMA (Yes/No)	
17	Illegal tree cutting in the WMA (Yes/No)	
18	Illegal Charcoal Production in the WMA (Yes/No)	
19	Grazing in the WMA (Yes/No)	
20	Livestock kraals/bomas in the WMA (Yes/No)	
21	Forest Fires Incidences in the WMA (Yes/No)	
22	Level of VLFR Degradation (1=Severy, 2=Moderate, 3=Low)	
23	Coverage of WMA destruction (1=<25%, 2= 25-50%, 3=50-75%, 4=>75%)	
24	Existence of the Boundary Conflict (Yes/No)	
25	Existence of the resource use conflicts (Yes/No)	
26	Existence of Conflicts over WMA ownership (Yes/No)	
27	Remarks (if any)	

Status and ecological potential of forest resources and their sustainable management in Mainland Tanzania

Form 3: NFRs

Name of respondent:	
Name of organization/institution:	
Mobile:	
Position of respondent:	
Reporting Period:	

SN	Item	Responses
1	District (Name)	
2	NFR (Name)	
3	Eastings (For any point of the NFR - a center is most preferred)	
4	Northings (For any point in the NFR - a center is most preferred)	
5	Size (Ha)	
6	Gazettement (Year)	
7	Boundary Length	
8	Management Objectives (Production/Protection/Both)	
9	Forest Management Plan Prepared (Yes/No)	
10	Forest Management Plan Prepared (Year)	
11	Forest Harvesting Plan Prepared (Yes/No)	
12	Harvesting Plan Prepared (Year)	
13	Forest Harvesting Started (Yes/No)	
14	Starting of Harvesting (Year)	
15	Forest Boundary Marked by Beacons (Yes/No)	
16	Forest Boundary Cleared (Yes/No/Part)	
17	Forest Management Arrangement (JFM/Non JFM)	
18	For JFM Forest, when Started (Year)	
19	For JFM Forest, number of Adjacent Villages	
20	For JFM Forest, JFMA signed (Yes/No)	
21	Farming in the NFR (Yes/No)	
22	Settlement in the NFR (Yes/No)	
23	Mining in the NFR (Yes/No)	
24	Illegal tree cutting in the NFR (Yes/No)	
25	Illegal Charcoal Production in the NFR (Yes/No)	
26	Grazing in the NFR (Yes/No)	
27	Livestock kraals/bomas in the NFR (Yes/No)	
28	Forest Fires Incidences in the NFR (Yes/No)	
29	Level of Degradation in the NFR (Severe/Moderate/Low)	
30	Coverage of deforestation in NFR (<25%/25-50%/50-75%/>75%)	
31	Existence of the Boundary Conflict (Yes/No)	
32	Existence of the resource use conflicts (Yes/No)	

SN	Item	Responses
33	Existence of Conflicts over Resource Ownership (Yes/No)	
34	Remarks (if any)	

Status and ecological potential of forest resources and their sustainable management in Mainland Tanzania

Form 4: LAFRs

Name of respondent:	
Name of organization/institution:	
Mobile:	
Position of respondent:	
Reporting Period:	

SN	Item	Response
1	Region (Name)	
2	District (Name)	
3	LAFR (Name)	
4	Eastings (For any point of the LAFR - a center is most preferred)	
5	Northings (For any point in the LAFR - a center is most preferred)	
6	Size (Ha)	
7	Gazettement (Year)	
8	Boundary Length	
9	Management Objectives (Production/Protection/Both)	
10	Forest Management Plan Prepared (Yes/No)	
11	Forest Management Plan Prepared (Year)	
12	Forest Harvesting Plan Prepared (Yes/No)	
13	Harvesting Plan Prepared (Year)	
14	Forest Harvesting Started (Yes/No)	
15	Starting of Harvesting (Year)	
16	Forest Boundary Marked by Beacons (Yes/No)	
17	Forest Boundary Cleared (Yes/No/Part)	
18	Forest Management Arrangement (JFM/Non JFM)	
19	For JFM Forest, when Started (Year)	
20	For JFM Forest, number of Adjacent Villages	

SN	Item	Response
21	For JFM Forest, JFMA signed (Yes/No)	
22	Farming in the LAFR (Yes/No)	
23	Settlement in the LAFR (Yes/No)	
24	Mining in the LAFR (Yes/No)	
25	Illegal tree cutting in the LAFR (Yes/No)	
26	Illegal Charcoal Production in the LAFR (Yes/No)	
27	Grazing in the LAFR (Yes/No)	
28	Livestock kraals/bomas in the LAFR (Yes/No)	
29	Forest Fires Incidences in the LAFR (Yes/No)	
30	Level of Degradation in the LAFR (Severy/Moderate/Low)	
31	Coverage of deforestation in LAFR (<25%/25-50%/50-75%/>75%)	
32	Existence of the Boundary Conflict (Yes/No)	
33	Existence of the resource use conflicts (Yes/No)	
34	Existence of Conflicts over Resource Ownership (Yes/No)	
35	Remarks (if any)	

4.8 Checklist for Zonal Manager

Date:

Name of zone:

Name of enumerator:

Name of respondent:

Contact of respondent: Email: _____ Mobile: _____

Conduct a SWOC analysis (focusing on forest type, forest condition, management objectives, biodiversity and catchment values, ownership, PFM, law enforcement, forest management plan) for each forest you are managing in the zone:

Forest name	District	Strength	Weakness	Opportunity	Challenges

Forest name	District	Strength	Weakness	Opportunity	Challenges

Provide any existing conflict types in this zone (e.g. boundary, revenue collection) and involved actors (e.g. Magombera FR versus Mikumi NP).	Conflict type Involved actors	Possible solution
Mention and rank the criteria for changing forest management objectives, e.g. Protective to productive.	Criteria	Rank (1, 2, 3…..); 1 = most important
Mention and rank the criteria for changing management status, e.g. unreserved forest to reserved forest.	Criteria	Rank (1, 2, 3…..); 1 = most important
Mention and rank the criteria for changing forest ownership, e.g. LGA to CGFR.	Criteria	Rank (1, 2, 3…..); 1 = most important

Which forests need a change in ownership? Give reasons.	Name of forest Existing ownership	Proposed new ownership	Reasons
Which forests need a change in management objective? Give reasons.	Name of forest Existing management objective	Proposed new management objective	Reasons

Forest name	District	Strength	Weakness	Opportunity	Challenges
Which forests need a change in forest status (e.g. reserve to nature reserve etc.)? Give reasons.		Name of forest	Existing forest status	Proposed new forest status	Reasons

- What is your opinion on transforming TFS to an Authority?	Strength	Weakness	Opportunity	Challenge
SWOC of paramilitary	Strength	Weakness	Opportunity	Challenge
Devolution of power				
Is there a conflict between DFM and DFO? Specify	Conflict		Possible solution	
Is there a conflict between DFM- FBD management? Specify				

4.9 Genera Information Checklist (DFM, DFO, Wildlife offices)

Date:

Name of District:

Name of enumerator:

Name of respondent:

Contact of respondent: Email: _____ Mobile: _____

Provide the following information for each forest you are managing including

Item	Responses:								
Is there unreserved land in this District? In which village?									
Evaluation of unreserved lands	**Name of the Village (Tick appropriate)**								
Catchment value									
0 = Bareland: No water catchment value									
1 = Low: The area has vegetation but it is not aparticular source of water									

2 = Medium: Seasonal rivers providing water to lower land areas									
3 = High: Area contains lakes, ponds, rivers, or itis a forest land which collects/feeds water to lower land areas									
Biodiversity value:									
Presence of mammals, amphibians, reptiles, birds									
Is this a wildlife corridor?									

Wildlife corridors in this District and name the connected habitats (protected areas)	Corridor name	Connected habitats	Condition of the corridor

Outline practices of acquiring forest produce (e.g. Licence, harvesting, hammering, verification of harvested area and produce). Note: **This question is also applicable to traders of forest produce.**	

Mention and rank the criteria for changing forest management objectives, e.g. Protective to productive.	Criteria	Rank (1, 2, 3…..); 1 = most important
Mention and rank the criteria for changing management status, e.g. unreserved forest to reserved forest.	Criteria	Rank (1, 2, 3…..); 1 = most important
Mention and rank the criteria for changing forest ownership, e.g. LGA to CGFR.	Criteria	Rank (1, 2, 3…..); 1 = most important

What is your opinion on transforming TFS to an Authority?	Strength	Weakness	Opportunity	Challenge
SWOC of paramilitary	Strength	Weakness	Opportunity	Challenge
- Devolution of power				

Is there a conflict between DFM and DFO? Specify	Conflict	Possible solution
Is there a conflict between DFM- FBD management; Specify		

4.10 Checklist for DFM and DFO

Date:

Name of District:

Name of enumerator:

Name of respondent:

Contact of respondent: Email: _____ Mobile: _____

Provide the following information for each forest you are managing including

Item	Responses
Forest name	
Ownership	
Size	
Cover type	
GN number	
Year of gazettement/declaration	
Management regime (CBFM, JFM, none)	
If under PFM, list villages involved	
If JFM, year of the JFM	
For unreserved land, list the adjacent villages	
Catchment value (Tick appropriate)	
0 = Bareland: No water catchment value	
- 1 = Low: The area has vegetation but it is not aparticular source of water	
- 2 = Medium: Seasonal rivers providing water to lower land areas	
- 3 = High: Area contains lakes, ponds, rivers, or itis a forest land which collects/feeds water to lower land areas	
Biodiversity value:	
- Presence of mammals, amphibians, reptiles, birds	
o Is this a wildlife corridor?	

	Condition	Tick appropriate	Drivers	Underlying causes
The general condition of the forest (forest degradation and deforestation)	Good condition			
	Degraded			
	Deforested			

Presence of forest management plan (Current or outdated)			
Is the management plan based on forest inventory information?			
Management objectives (Productive or Protective or both (give proportions))			
If productive forest, is there a harvesting plan? How was it developed (procedures/steps)?			
If there is no management plan how is the forest managed?			
If there is no harvesting plan, how is the harvesting implemented?			
List Management Challenges and possible solutions			
Provide existing conflict types (e.g. boundary, revenue collection) and involved actors (e.g. Magombera FR versus Mikumi NP).	Conflict type	Involved actors	Possible solution
Do you think there is a need to change ownership of this forest? Give reasons for your response.			
Do you think there is a need to change the management objective of this forest? Give reasons for your response.			
Do you think there is a need to change the forest status of this forest? Give reasons for your response.			

4.11 Checklist for VG

Date:

Name of Village: _____ Ward_____ Division _____

Name of District: _____

Name of enumerator:

Name of respondent(s):

Contact Person: Mobile: _____

Provide the following information for each forest you are managing including

Item	Responses
Forest name	
Ownership	
Size	
Cover type	
GN number	
Year of gazettement/ declaration	

Item	Responses
Management regime (CBFM, JFM, none)	
If under PFM, list villages involved	
If JFM, year of the JFMA	
For unreserved land, list the adjacent villages	
Catchment value (Tick appropriate)	
o 0 = Bareland: No water catchment value	
- 1 = Low: The area has vegetation but it is not aparticular source of water	
- 2 = Medium: Seasonal rivers providing water to lower land areas	
- 3 = High: Area contains lakes, ponds, rivers, or itis a forest land which collects/ feeds water to lower land areas	
Biodiversity value:	
- Presence of mammals, amphibians, reptiles, birds	
o Is this a wildlife corridor?	

List other wildlife corridors in this District and name the connected habitats (protected area)	Corridor name	Connected habitats	Condition of the corridor

The general condition of the forest (forest degradation and deforestation)	Condition	Tick appropriate	Drivers	Underlying causes
	Good condition			
	Degraded			
	Deforested			

Presence of forest management plan (Current or outdated)	

Item	Responses			
Is the management plan based on forest inventory information?				
Management objectives (Productive or Protective or both (give proportions))				
If productive forest, is there a harvesting plan? How was it developed (procedures/steps)?				
If there is no management plan how is the forest managed?				
If there is no harvesting plan, how is the harvesting implemented?				
List Management Challenges and possible solutions				
Provide existing conflict types (e.g. boundary, revenue collection) and involved actors (e.g. Magombera FR versus Mikumi NP).	Conflict type	Involved actors	Possible solution	
Do you think there is a need to change ownership of this forest? Give reasons for your response.				
Do you think there is a need to change the management objective of this forest? Give reasons for your response.				
Do you think there is a need to change the forest status of this forest? Give reasons for your response.				
o SWOC of paramilitary -	Strength	Weakness	Opportunity	Challenge
- Where do you get forest extension from? Is it adequate?				

Appendix 5: List of National mangrove FRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Bagamoyo-mangrove	Eastern	Pwani	Bagamoyo (Bagamoyo)	5,636.0	Cap. 132	
2	Ilala-mangrove	Eastern	Dar es Salaam	Ilala	25.3	Cap. 132	
3	Kinondoni and Ubungo-mangrove	Eastern	Dar es Salaam	Kinondoni and Ubungo	325.6	Cap. 132	
4	Mafia-mangrove	Eastern	Pwani	Mafia	4,365.0	153	1930
5	Mkuranga-mangrove	Eastern	Pwani	Mkuranga	3,498.0	Cap. 132 p 1346	
6	Rufiji delta-mangrove	Eastern	Pwani	Kibiti	53,255.0	Cap. 132 p 1350	1928
7	Temeke and Kigamboni-angrove	Eastern	Dar es Salaam	Temeke and Kigamboni	2,051.7	Cap. 132	
8	Muheza-mangrove	Northern	Tanga	Tanga	56.0	132	1928
9	Mkinga-mangrove	Northern	Tanga	Mkinga	6,353.0	132	1928
10	Pangani-mangrove	Northern	Tanga	Pangani	1,700.0	132	1928
11	Tanga-mangrove	Northern	Tanga	Tanga	3,050.0	132	1928
12	Kilwa-mangrove	Southern	Lindi	Kilwa	36,737.0	21	1930
13	Lindi-mangrove	Southern	Lindi	Lindi	4,547.0	21	1930
14	Mtwara-mangrove	Southern	Mtwara	Mtwara	8,942.0	132	1928
Total					**130,541.6**		

Appendix 6: List of National nature FRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Mount Hanang	Central	Manyara	Hanang	5,871.0	299	2016
2	Magombera	Eastern	Morogoro	Kilombero	2,615.3	48	2019
3	Mkingu	Eastern	Morogoro	Mvomero	26,433.0	104	2016
4	Uluguru	Eastern	Morogoro	Morogoro	24,115.0	296	2008
5	Minziro	Lake	Kagera	Missenyi	25,717.0	105	2016
6	Amani	Northern	Tanga	Muheza	8,380.0	151/152	1997
7	Chome	Northern	Kilimanjaro	Same	14,283.0	105	2016
8	Magamba	Northern	Tanga	Lushoto	9,283.0	103	2016
9	Nilo	Northern	Tanga	Korogwe and Muheza and Mkinga	6,025.0	234	2007
10	Mwambesi	Southern	Ruvuma	Tunduru	112,901.0	128	2019
11	Pindiro	Southern	Lindi	Kilwa	12,249.0	126	2019
12	Rondo	Southern	Lindi	Lindi	11,742.0	2	2017
13	Kalambo	Southern Highlands	Rukwa	Kalambo	41,958.0	127	2019
14	Kilombero	Southern highlands	Iringa	Kilolo	134,511.0	182	2007
15	Rungwe	Southern Highlands	Mbeya	Rungwe	24,233.0	128	2019
16	Uzungwa scarp	Southern Highlands	Iringa	Mufindi	32,763.0	297	2016
17	Itulu Hill	Western	Tabora	Sikonge	388,512.4	124	2019
Total					**881,591.7**		

Appendix 7: List of National natural FRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Bereku	Central	Manyara	Babati	9,956.0	296	1941
2	Chemi chemi	Central	Dodoma	Kondoa	20.0	100	1987
3	Chenene East	Central	Dodoma	Chamwino	22,662.0	335	1953
4	Chenene West	Central	Dodoma	Bahi	1,989.0	382	1989
5	Dodoma reservior	Central	Dodoma	Dodoma	455.2	23	1938
6	Haraa	Central	Manyara	Babati	626.0	18	1940
7	Hasama Hill	Central	Manyara	Mbulu	4,856.0	12/8	1934
8	Ijogo	Central	Dodoma	Kongwa	327.0	189	1950
9	Irangi Scarp	Central	Dodoma	Kondoa	13,741.0	Not gazetted	
10	Kigongkwe	Central	Dodoma	Dodoma	4,522.8	257	1946
11	Mafwomero	Central	Dodoma	Mpwapwa	3,237.0	87	1954
12	Mang'aliza (Mangalisa)	Central	Dodoma	Mpwapwa	4,988.0	187	1951
13	Mlali	Central	Dodoma	Kongwa	7,812.6	311	1954
14	Mlimasimu	Central	Manyara	Kiteto	1,657.0	Not gazetted	
15	Njoge (Njogi)	Central	Manyara	Kiteto	1,165.0	393	1954
16	Nou	Central	Manyara	Babati	13,520.0	94	1933
17	Salanga	Central	Dodoma	Kondoa	8,336.6	294	1941
18	Ufiome	Central	Manyara	Babati	4,848.0	239	1970
19	Wotta	Central	Dodoma	Mpwapwa	2,530.0	124	1961
20	Dindili	Eastern	Morogoro	Morogoro	1,006.8	416	1964
21	Dunduma	Eastern	Morogoro	Mvomero	52.6	Not gazetted	
22	Gwami	Eastern	Pwani	Bagamoyo (Chalinze)	5,633.2	364	1958
23	Ikwaba	Eastern	Morogoro	Gairo	937.3	231/374	1962/1963
24	Iwonde	Eastern	Morogoro	Kilombero	14,748.4	555	1958
25	Kanga	Eastern	Morogoro	Mvomero	11,040.0	410	1954
26	Katundu	Eastern	Pwani	Rufiji	5,697.6	155	1966
27	Kazimzumbwi	Eastern	Pwani	Kisarawe	4,862.0	306	1954
28	Kihiriri	Eastern	Morogoro	Kilosa	208.0	373	1963
29	Kikale	Eastern	Pwani	Kibiti	999.6	Cap. 132 p 1351	1957
30	Kikoka	Eastern	Pwani	Bagamoyo (Bagamoyo)	1,654.8	399/1958	1958
31	Kimboza	Eastern	Morogoro	Morogoro	405.0	417	1964

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
32	Kinyerezi	Eastern	Dar es Salaam	Ilala	4.1	Not gazetted	
33	Kipo	Eastern	Pwani	Rufiji	1,749.0	150	1930
34	Kitulanghalo	Eastern	Morogoro	Morogoro	2,637.7	198	1955
35	Kiwengoma	Eastern	Pwani	Rufiji	3,561.0	Cap. 132	1930
36	Ligamba	Eastern	Morogoro	Malinyi	15.8	335	1955
37	Mafleta	Eastern	Morogoro	Mvomero	1,025.5	Cap. 132 p 1354	
38	Magoto	Eastern	Morogoro	Mvomero	709.0	Not gazetted	
39	Mahenge Scarp	Eastern	Morogoro	Ulanga	500.0	312	1954
40	Mamboto	Eastern	Morogoro	Kilosa	137.0	233	1962
41	Mamboya	Eastern	Morogoro	Kilosa	503.0	348	1961
42	Mamiwa Kisara North	Eastern	Morogoro	Gairo	8,203.0	Cap. 132 p 1360	
43	Mamiwa Kisara South	Eastern	Morogoro	Kilosa	6,266.0	250	1951
44	Masagati	Eastern	Morogoro	Kilombero	6,475.0	89	1955
45	Masangania	Eastern	Pwani	Mkuranga	2,599.0	Cap. 132 p 1349	
46	Mbogo	Eastern	Morogoro	Mvomero	216.5	577	1965
47	Mchungu	Eastern	Pwani	Kibiti	1,525.0	Cap. 132 p 1352	1912
48	Mhulu	Eastern	Morogoro	Ulanga	987.0	563	1964
49	Mindu	Eastern	Morogoro	Morogoro	2,285.3	115	1964
50	Mkelezange (Marenda)	Eastern	Pwani	Mkuranga	389.9	Not gazetted	
51	Mkulazi	Eastern	Morogoro	Morogoro	68,625.0	199	1955
52	Mkungwe	Eastern	Morogoro	Morogoro	1,966.8	52	1954
53	Mlola	Eastern	Pwani	Mafia	2,596.0	Not gazetted	
54	Mohoro	Eastern	Pwani	Rufiji	2,349.0	Cap. 132 p 1349	1966
55	Mohoro River	Eastern	Pwani	Rufiji	48.6	204	1966
56	Msakureile-Simbo	Eastern	Pwani	Bagamoyo (Chalinze)	597.0	365	1958
57	Mselezi	Eastern	Morogoro	Ulanga	770.5	216	1954
58	Mtanza	Eastern	Pwani	Rufiji	4,922.2	153	1930
59	Mvuha-Chamanyani	Eastern	Morogoro	Morogoro	1,647.8	Cap. 132	1950
60	Myoe	Eastern	Morogoro	Ulanga	93.1	314	1954
61	Namakutwa/ Namuete	Eastern	Pwani	Rufiji	4,705.0	Cap. 132	1930

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
62	Nambiga	Eastern	Morogoro	Ulanga	1,349.6	51	1954
63	Nawenge	Eastern	Morogoro	Ulanga	575.8	288	1961
64	Ngulakula	Eastern	Pwani	Kibiti	2,398.9	331	1960
65	Nyandiduma	Eastern	Morogoro	Mvomero	47.8	Cap. 132 p 1358	
66	Nyanganje	Eastern	Morogoro	Kilombero	14,895.6	555	1958
67	Pala Mountain	Eastern	Morogoro	Kilosa	10,610.0	218	1961
68	Pongwe	Eastern	Pwani	Bagamoyo (Chalinze)	875.3	389	1958
69	Pugu	Eastern	Pwani	Kisarawe	2,410.0	132	1947
70	Rupiage	Eastern	Pwani	Rufiji	4,118.1	132	1966
71	Ruvu	Eastern	Morogoro	Morogoro	3,093.4	200	1955
72	Ruvu South	Eastern	Pwani	Kisarawe	30,633.0	81	1979
73	Sali	Eastern	Morogoro	Ulanga	1,890.0	75	1963
74	Shikurufumi	Eastern	Morogoro	Mvomero	259.8	216	1948
75	Talagwe/ Italagwe	Eastern	Morogoro	Gairo	1,778.0	139	1963
76	Tamburu	Eastern	Pwani	Rufiji	5,997.0	Cap. 132 p 1351	1930
77	Ukwiva	Eastern	Morogoro	Kilosa	78,780.0	407	1954
78	Uponera	Eastern	Morogoro	Kilosa	291.8	372	1963
79	Utete	Eastern	Pwani	Rufiji	949.0	Cap. 132 p 1351	1957
80	Uzigua	Eastern	Pwani	Bagamoyo (Chalinze)	24,436.0	466/1958	1958
81	Vigoza	Eastern	Morogoro	Mvomero	9.3	Cap. 132 p 1356	
82	Vikindu	Eastern	Pwani	Mkuranga	1,710.0	Cap. 132 p 1347	
83	Geita	Lake	Geita	Geita	50,836.0	10/40	1953/1955
84	Igwata	Lake	Mwanza	Kwimba	132.0	324	1953
85	Kandale/ kantale	Lake	Kagera	Missenyi	70.3	4	1968
86	Kankuuma	Lake	Kagera	Missenyi	98.2	499	1965
87	Kikongoro	Lake	Kagera	Missenyi	18.0	4	1968
88	Kikuru	Lake	Kagera	Missenyi	7,296.1	Sch.	
89	Kome	Lake	Mwanza	Sengerema	2,487.1	Cap. 132 p 1399	1947
90	Kyamawa	Lake	Kagera	Bukoba	20.5	10	1924
91	Kyanyari	Lake	Mara	Butiama	2,752.0	7	1990
92	Kyarano	Lake	Mara	Butiama	175.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
93	Kyau	Lake	Kagera	Bukoba	15.6	497	1965
94	Maisome	Lake	Mwanza	Sengerema	12,890.0	Cap. 132 p1399	1955
95	Marya Farm	Lake	Mwanza	Kwimba	108.0	113	1956
96	Munene	Lake	Kagera	Missenyi and Bukoba	6,241.1	Cap. 132 p 1398	
97	Nyantakara	Lake	Kagera	Biharamulo	29,332.0	57	1957
98	Ruasina (Mlema-Kiga Ruasina)	Lake	Kagera	Missenyi and Bukoba	4,598.1	Not gazetted	
99	Ruchwezi	Lake	Kagera	Missenyi	649.3	Cap 132	1947
100	Ruiga River	Lake	Kagera	Muleba	105,931.0	490	1960
101	Rwamgasa	Lake	Geita	Geita	28,160.0	386	1955
102	Sayaka	Lake	Mwanza	Magu	5,421.0	90	1996
103	Usindakwe	Lake	Geita	Geita	450.0	6	1953
104	Baga - I (Mzinga)	Northern	Tanga	Lushoto (Bumbuli)	355.5	579	1963
105	Baga - II (Mzinga)	Northern	Tanga	Lushoto (Bumbuli)	2,998.6	532	1962
106	Balangai	Northern	Tanga	Lushoto (Bumbuli)	2,479.0	45	1962
107	Bamba Ridge	Northern	Tanga	Mkinga	1,109.0	409	1958
108	Bombo East I	Northern	Tanga	Mkinga	448.0	Not gazetted	
109	Bombo East II	Northern	Tanga	Korogwe	404.0	Sch.	
110	Bombo West	Northern	Tanga	Korogwe	3,524.0	1	1959
111	Bumba Mavumbi	Northern	Tanga	Lushoto (Bumbuli)	1,056.0	580	1963
112	Burko	Northern	Arusha	Monduli	2,254.2	90	1955
113	Chambogo	Northern	Kilimanjaro	Same	5,355.0	298	1958
114	Changandu	Northern	Tanga	Korogwe	6,746.0	295	1958
115	Derema	Northern	Tanga	Muheza	966.0	255	2010
116	Derema	Northern	Tanga	Kilindi	3,928.0	133	1937
117	Essimingor	Northern	Arusha	Monduli	6,070.0	187	1954
118	Gendagenda	Northern	Tanga	Handeni	2,808.9	24	1980
119	Handeni Hill	Northern	Tanga	Handeni	1,344.0	426	1960
120	Jungu	Northern	Tanga	Kilindi	261.0	259	1988
121	Kahe I	Northern	Kilimanjaro	Moshi	884.2	378	1961
122	Kahe II	Northern	Kilimanjaro	Moshi	191.8	378	1961
123	Kambai	Northern	Tanga	Muheza	1,050.0	310	1994
124	Kamwalla I	Northern	Kilimanjaro	Mwanga	119.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
125	Kamwalla II	Northern	Kilimanjaro	Mwanga	293.0	232	2004
126	Kamwenda	Northern	Kilimanjaro	Same	583.0	Not gazetted	
127	Kilindi	Northern	Tanga	Kilindi	5,128.0	45	1969
128	Kindoroko	Northern	Kilimanjaro	Mwanga	2,186.0	341	1961
129	Kiriguru	Northern	Tanga	Kilindi	203.0	24	1980
130	Kisima Gonja	Northern	Tanga	Lushoto (Bumbuli)	3,559.0	347	1961
131	Kitivo North	Northern	Tanga	Lushoto	63.0	118	1957
132	Kitivo South	Northern	Tanga	Lushoto	38.4	117	1957
133	Kiverenge	Northern	Kilimanjaro	Mwanga	1,578.0	41	2007
134	Koko Hill	Northern	Kilimanjaro	Same	78.1	7	1957
135	Korogwe Hill	Northern	Tanga	Korogwe	146.0	Not gazetted	
136	Kwama Rukanga	Northern	Tanga	Handeni	181.1	330	1957
137	Kwamarimba	Northern	Tanga	Muheza	1,032.0	341	1954
138	Kwamgumi	Northern	Tanga	Mkinga	1,148.9	195	1955
139	Kwani	Northern	Tanga	Muheza	2,545.1	248	1956
140	Kwasumba	Northern	Tanga	Handeni	2,933.3	346	1961
141	Kwediboma	Northern	Tanga	Kilindi	703.0	Cap. 132 p 1335/301	1960
142	Lake Duluti	Northern	Arusha	Arumeru	34.4	314	1965
143	Mafi Hill	Northern	Tanga	Korogwe	6,600.0	436	1964
144	Magambazi	Northern	Tanga	Handeni	749.5	133	1934
145	Mahezangulu	Northern	Tanga	Lushoto	325.8	234	1962
146	Manga	Northern	Tanga	Muheza	1,635.0	112	1955
147	Mbwegere	Northern	Tanga	Kilindi	372.0	392	1960
148	Mgambo	Northern	Tanga	Mkinga	1,346.0	546	1998
149	Migombani	Northern	Tanga	Lushoto (Bumbuli)	92.0	1	1959
150	Minja	Northern	Kilimanjaro	Mwanga	520.6	197	1955
151	Mkonga	Northern	Kilimanjaro	Same	520.0	444	1996
152	Mkongo	Northern	Tanga	Kilindi	2,433.0	Cap.389 p 33/187	1959/1964
153	Mkoro	Northern	Tanga	Kilindi	90.0	314	1961
154	Mkuri	Northern	Tanga	Kilindi	2,931.2	576	1963
155	Mkusu	Northern	Tanga	Lushoto	3,674.4	114	1964
156	Mlinga	Northern	Tanga	Muheza	840.0	443	1996
157	Mlungui	Northern	Tanga	Mkinga	200.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
158	Mombo	Northern	Tanga	Korogwe	51.0	110	1962
159	Mount Monduli	Northern	Arusha	Monduli	8,900.0	90	1954
160	Mramba	Northern	Kilimanjaro	Mwanga	3,355.0	352	1958
161	Msingeho Hill	Northern	Tanga	Kilindi	115.0	301	1960
162	Msumbugwe	Northern	Tanga	Pangani	4,410.0	Sch.	
163	Mtai	Northern	Tanga	Mkinga	3,182.0	25	1968
164	Mtunguru	Northern	Tanga	Handeni	5,696.0	314	1961
165	Mwalla	Northern	Kilimanjaro	Same	583.0	Not gazetted	
166	Mwenga	Northern	Tanga	Korogwe	1,159.0	297	1958
167	Ndasha Hill	Northern	Tanga	Lushoto	1,156.0	Not gazetted	
168	Ndelemai	Northern	Tanga	Lushoto	3,554.0	44	1963
169	Ndolwa	Northern	Tanga	Korogwe	1,173.8	301	1958
170	Nguru North	Northern	Tanga	Kilindi	14,041.5	133	1934
171	Nkoenankoli	Northern	Arusha	Arumeru	378.0	84	1967
172	Pumula	Northern	Tanga	Kilindi	1,062.0	346	1961
173	Rau	Northern	Kilimanjaro	Moshi	1,426.9	127	1951
174	Rudewa South	Northern	Tanga	Kilindi	555.6	341	1961
175	Segoma	Northern	Tanga	Mkinga	1,506.0	113	1955
176	Semdoe	Northern	Tanga	Muheza	980.0	547	1956
177	Shagayo	Northern	Tanga	Lushoto	7,830.0	Cap. 132 p 1332	
178	Shambalai	Northern	Tanga	Lushoto	21.0	Not gazetted	
179	Tongwe	Northern	Tanga	Muheza	1,201.0	249/288	1956
180	Usa Springs	Northern	Arusha	Arumeru	51.4	Not gazetted	
181	Vugiri	Northern	Tanga	Korogwe	40.5	226	1962
182	Amani Makolo	Southern	Ruvuma	Mbinga	5,548.8	450	1994
183	Chaburuma	Southern	Ruvuma	Songea	193.0	551	1998
184	Chitoa	Southern	Lindi	Lindi	770.9	327	1965
185	Chiwindi	Southern	Ruvuma	Nyasa	-	450	1994
186	Igawisenga	Southern	Ruvuma	Songea	36.0	552	1998
187	Kigonsera	Southern	Ruvuma	Mbinga	575.8	450	1994
188	Kipiki	Southern	Ruvuma	Namtumbo	63,850.0	Not gazetted	
189	Kitope	Southern	Lindi	Kilwa	36,737.0	312	1957
190	Lihanje	Southern	Ruvuma	Songea	10,565.0	333	2000

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
191	Lionja	Southern	Mtwara	Nachingwea	28,490.8	551	1958
192	Lipembe/ Uyole	Southern	Ruvuma	Mbinga	962.2	450	1994
193	Litenga	Southern	Ruvuma	Songea	4,795.0	Not gazetted	
194	Litipo	Southern	Lindi	Lindi	1,037.0	Not gazetted	
195	Liwili/kiteza	Southern	Ruvuma	Mbinga	1,020.0	129	1938
196	Lwekea	Southern	Ruvuma	Nyasa	1,699.2	Cap. 132 p 1362	
197	Machinjioni	Southern	Ruvuma	Songea	236.0	550	1998
198	Makonde Scarp I and II	Southern	Mtwara	Newala and Masasi	1,748.3	Not gazetted	
199	Makonde Scarp III	Southern	Mtwara	Tandahimba	3,140.7	Not gazetted	
200	Malehi	Southern	Lindi	Kilwa	38,850.0	175	1958
201	Masasi Hill	Southern	Mtwara	Masasi	1,628.0	271	1988
202	Matapwa	Southern	Lindi	Lindi	16,493.0	389	1958
203	Matogoro B	Southern	Ruvuma	Namtumbo	32,900.0	554	1998
204	Matogoro East	Southern	Ruvuma	Songea	7,457.2	260	1951
205	Matogoro West	Southern	Ruvuma	Songea	100.0	260	1951
206	Mbangala	Southern	Mtwara	Masasi and Nanyumbu	28,490.0	143	1958
207	Mbinga-kimaji	Southern	Lindi	Kilwa	1,874.0	103	1959
208	Mchonda	Southern	Mtwara	Nanyumbu	6,216.0	552	1958
209	Mitarule	Southern	Lindi	Kilwa	60,484.0	313	1957
210	Mitundumbeya	Southern	Lindi	Kilwa	8,547.0	376	1967
211	Muhuwesi	Southern	Ruvuma	Tunduru	194,000.0	552	1958
212	Naliendele	Southern	Mtwara	Mtwara	404.0	355	1955
213	Nampekeso	Southern	Lindi	Kilwa	20,287.0	Sch.	1959
214	Namswea hill	Southern	Ruvuma	Mbinga	285.0	Sch.	
215	Nandembo	Southern	Ruvuma	Tunduru	10,689.0	323	1988
216	Nangaule	Southern	Lindi	Lindi	650.0	Not gazetted	
217	Ndechela	Southern	Mtwara	Nanyumbu	6,216.0	551	1958
218	Ndimba	Southern	Lindi	Lindi	7,530.6	Cap. 132; p 1364	
219	Ngarama North	Southern	Lindi	Kilwa	39,629.0	400	1955
220	Ngarama South	Southern	Lindi	Kilwa	2,078.0	300	1957

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
221	Nyangedi	Southern	Lindi	Lindi	4,541.0	Not gazetted	
222	Nyera/ Kiperere	Southern	Lindi	Liwale	80,423.0	79	1956
223	Rondondo	Southern	Lindi	Kilwa	208,380.0	233	1957
224	Ruawa	Southern	Lindi	Lindi	858.8	Cap. 132; P.1363	
225	Ruhekei	Southern	Ruvuma	Nyasa	3,308.0	129	1938
226	Rungo	Southern	Lindi	Kilwa	22,586.0	319	1956
227	Sasawara	Southern	Ruvuma	Tunduru	39,424.0	332	1957
228	Songea fuel	Southern	Ruvuma	Songea	5,180.0	22	1956
229	South Matogoro	Southern	Ruvuma	Songea	6,755.7	Not gazetted	
230	Tong'omba	Southern	Lindi	Kilwa	20,558.9	250	1961
231	Undendeule North East	Southern	Ruvuma	Namtombo	134,325.0	552	1958
232	Ziwani	Southern	Mtwara	Mtwara	687.0	216	1961
233	Chabu	Southern Highlands	Mbeya	Ileje	425.0	555	1998
234	Chala River	Southern Highlands	Rukwa	Nkasi	3,295.0	129	1978
235	Chimala Scarp	Southern Highlands	Mbeya	Mbalali	17,576.8	305	1965
236	Chumwa range	Southern Highlands	Mbeya	Mbeya	12,747.7	356	1955
237	Chuvwi	Southern Highlands	Mbeya	Mbeya	485.6	Sch.	
238	Ibungu (Mboli)	Southern Highlands	Mbeya	Ileje and Rungwe	980.0	559	1998
239	Idewa	Southern Highlands	Iringa	Mufindi	291.0	294	1965
240	Iditima	Southern Highlands	Njombe	Njombe	500.0	347	1958
241	Ikoho/Ihoho	Southern Highlands	Mbeya	Mbeya	1,416.4	126	1935
242	Ileje Range	Southern Highlands	Mbeya	Ileje	7,090.0	549	1998
243	Ilembo Usafwa	Southern Highlands	Mbeya	Mbalali	18,778.0	Not gazetted	
244	Image	Southern Highlands	Iringa	Kilolo	8,616.0	392	1934
245	Irenga	Southern Highlands	Mbeya	Mbeya	635.4	126	1935
246	Isaka	Southern Highlands	Mbeya	Rungwe	341.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
247	Isalalo	Southern Highlands	Songwe	Mbozi	11,552.0	128	1957
248	Isalalolunga	Southern Highlands	Songwe	Momba	35,340.0	Not gazetted	
249	Isongele	Southern Highlands	Mbeya	Rungwe	56.0	54	1998
250	Itale	Southern Highlands	Mbeya	Ileje	2,577.0	Not gazetted	
251	Itengu	Southern Highlands	Songwe	Chunya	545.0	Not gazetted	
252	Itoni	Southern Highlands	Njombe	Njombe	200.0	250	1939
253	Ivumbwe-Nzovure	Southern Highlands	Mbeya	Mbeya	82.0	560	1998
254	Ivuna North	Southern Highlands	Songwe	Momba	7,690.7	343	1961
255	Ivuna South	Southern Highlands	Songwe	Momba	2,221.3	340	1961
256	Iyovwa	Southern Highlands	Mbeya	Ileje	840.0	Not gazetted	
257	Iyumba	Southern Highlands	Mbeya	Ileje	109.0	Not gazetted	
258	Kabulo	Southern Highlands	Mbeya	Ileje	3,918.0	548	1998
259	Kalangali	Southern Highlands	Songwe	Chunya	2,259.0	258	1941
260	Kasumulu	Southern Highlands	Mbeya	Kyela	115.0	543	1998
261	Kawemba	Southern Highlands	Iringa	Kilolo	69.0	Not gazetted	
262	Kigali	Southern Highlands	Mbeya	Kyela	2,752.0	541	1998
263	Kilanzi Kitungulu	Southern Highlands	Iringa	Kilolo	1,092.0	Cap. 132 p 1367	
264	Kipembawe	Southern Highlands	Songwe	Chunya	3,365.6	258	1941
265	Kising'a lugalo	Southern Highlands	Iringa	Kilolo	14,000.0	31	1934
266	Kitapilimwa	Southern Highlands	Iringa	Iringa	3,697.0	299	1952
267	Kitemele	Southern Highlands	Iringa	Kilolo	273.0	Not gazetted	
268	Kitweli	Southern Highlands	Mbeya	Rungwe	233.0	171	1952
269	Kyosa	Southern Highlands	Mbeya	Ileje	957.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
270	Livingstone	Southern Highlands	Mbeya	Kyela and Rungwe and Nyasa	26,365.0	48	1940
271	Logia	Southern Highlands	Songwe	Chunya	930.0	556	1998
272	Lufuna	Southern Highlands	Iringa	Mufindi	47.0	Not gazetted	
273	Lupa North	Southern Highlands	Songwe	Chunya	5,070.0	258	1951
274	Madenge	Southern Highlands	Njombe	Ludewa	1,146.0	3	1953
275	Maguli	Southern Highlands	Njombe	Makete	198.5	21	1931
276	Makombe	Southern Highlands	Iringa	Iringa	1,408.0	231	1957
277	Mapala	Southern Highlands	Njombe	Njombe	69.0	71	1953
278	Mbembe	Southern Highlands	Mbeya	Mbeya	625.0	775	1994
279	Mbeya Range	Southern Highlands	Mbeya	Mbeya	15,588.6	381	1957
280	Mbiwe	Southern Highlands	Songwe	Songwe and Chunya	49,147.0	519	1995
281	Mdando	Southern Highlands	Njombe	Ludewa	5,080.0	258	1941
282	Membe	Southern Highlands	Mbeya	Ileje	2,345.0	Not gazetted	
283	Msanga-Mwelu	Southern Highlands	Mbeya	Mbeya	3,226.0	557	1998
284	Mshora	Southern Highlands	Njombe	Ludewa	315.0	4	1953
285	Mtande	Southern Highlands	Songwe	Chunya	258.0	Not gazetted	
286	Mwambalizi	Southern Highlands	Mbeya	Mbalali	4,650.0	2	1959
287	New Dabaga Ulongambi	Southern Highlands	Iringa	Kilolo	3,700.0	204/210	1930 / 1932
288	Nguruka	Southern Highlands	Njombe	Njombe	143.0	250	1939
289	Njerera	Southern Highlands	Iringa	Mufindi	2,833.0	230	1957
290	Patamela	Southern Highlands	Songwe	Songwe	23,550.0	558	1998
291	Sakaranyumo	Southern Highlands	Njombe	Ludewa	840.0	4	1953
292	Shinji	Southern Highlands	Mbeya	Ileje	3,267.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
293	Umalima	Southern Highlands	Mbeya	Mbeya	3,796.0	30	1949
294	Usafya North	Southern Highlands	Mbeya	Mbeya	3,485.2	479	1987
295	Igombe Dam	Western	Tabora	Tabora Municipal	6,476.0	302	1962
296	Igombe River	Western	Tabora	Uyui, Kaliua and Nzega	247,344.0	32	1958
297	Ilomero Hill	Western	Tabora	Nzega	35,224.0	63	1956
298	Ilunde	Western	Kigoma	Uvinza	6,216.0	307	1954
299	Inyonga/ Nyonga	Western	Tabora	Sikonge	578,603.3	449	1954
300	Kabungu	Western	Katavi	Tanganyika	244.0	164	1951
301	Kagongho	Western	Tabora	Nzega	4,002.3	143	1952
302	Kungwe Bay	Western	Kigoma	Uvinza	5,928.0	308	1953
303	Lubaga	Western	Shinyanga	Shinyanga	48.9	274	1956
304	Lugufu	Western	Kigoma	Uvinza	8,960.0	308	1954
305	Masanza	Western	Kigoma	Uvinza	5,439.0	313	1954
306	Mkuti	Western	Kigoma	Uvinza	12,850.0	287	1956
307	Mkuti East	Western	Kigoma	Kasulu	57,498.0	287	1956
308	Mkweni	Western	Shinyanga	Kahama	15,744.0	7	1953
309	Mpanda Line	Western	Tabora	Kaliua	427,348.0	1	1955
310	Mpanda North East	Western	Katavi	Mpanda, Mlele and Nsimbo	502,458.0	296	1949
311	Msaginia	Western	Katavi	Mpanda and Nsimbo	85,210.6	447	1954
312	Mulele Hill	Western	Katavi	Mpanda, Mlele and Nsimbo	513,311.0	5	1953
313	Mwalye	Western	Kigoma	Kibondo	401,448.2	4	1957
314	Mwantini	Western	Shinyanga	Shinyanga	4,100.0	230	1951
315	Nindo	Western	Shinyanga	Shinyanga	27,446.0	10	1958
316	North Makere	Western	Kigoma	Kasulu	78,995.0	375	1955
317	Ntalikwa	Western	Tabora	Tabora Municipal	1,095.6	267	1951
318	Nyahua Mbuga	Western	Tabora	Sikonge	679,871.0	79	1954
319	Rungwa River	Western	Katavi	Mlele	401,448.2	282	1954
320	Simbo	Western	Tabora	Uyui	324.0	Not gazetted	
321	South Makere	Western	Kigoma	Kasulu	65,265.7	250/718	1956/2018
322	Swangala	Western	Tabora	Sikonge	268,800.0	448	1954
323	Ugalla River	Western	Katavi	Mlele	427,348.0	25	1950

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
324	Ugalla North	Western	Tabora	Urambo and Kaliua	163,482.4	Not gazetted	
325	Unyambiu South	Western	Tabora	Igunga	16,835.0	443	1958
326	Uruma	Western	Tabora	Uyui and Tabora Municipal	12,950.0	50	1953
327	Uvinza	Western	Kigoma	Uvinza	16,835.0	309	1954
328	Uyui Kigwa Rubuga	Western	Tabora	Uyui	135,197.0	509	1958
Total					***7,591,728.5***		

Appendix 8: List of BRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Kilinga	Central	Singida	Manyoni	11,562.6	131	2019
2	Aghondi	Central	Singida	Manyoni	2,162.2	130	2019
3	Lebba Jumbe	Central	Dodoma	Chemba	1,368.3	Not gazetted	
4	Maganze mzaree	Central	Dodoma	Chemba	1,275.3	Not gazetted	
5	Mialo kwamtoro	Central	Dodoma	Chemba	607.6	Not gazetted	
6	Songolo	Central	Dodoma	Chemba	1,056.0	Not gazetted	
7	Kang'ata	Northern	Tanga	Handeni	1,439.2	Not gazetted	
8	Kwamba	Northern	Tanga	Handeni	61.0	Not gazetted	
9	Kwedikwazu manzuki	Northern	Tanga	Handeni	25.7	Not gazetted	
10	Kwenyunga Magiri	Northern	Tanga	Handeni	138.5	Not gazetted	
11	Mheza	Northern	Tanga	Kilindi	2,014.0	Not gazetted	
12	Sambu	Northern	Tanga	Handeni	567.7	Not gazetted	
13	Kipembawe	Southern Highlands	Songwe	Chunya	21,791.7	Not gazetted	
Total					***44,069.8***		

Appendix 9: List of National plantation FRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Morogoro fuelwood	Eastern	Morogoro	Morogoro	12,950.0	204	1953
2	Mtibwa / Pagale Teak	Eastern	Morogoro	Mvomero	16,065.0	213/81	1944 / 1958
3	Ruvu North fuelwood	Eastern	Pwani	Kibaha	31,930.0	309	1959
4	Ukaguru	Eastern	Morogoro	Gairo	3,087.0	64	1956
5	Biharamulo-Kahama	Lake	Kagera and Geita	Biharamulo, Bukombe and Chato	134,680.0	311	1959
6	Buhindi	Lake	Mwanza	Sengerema	21,880.0	346	1955
7	Rubare / Nindo	Lake	Kagera	Bukoba	6,374.0	236	1971
8	Rubya	Lake	Mwanza	Ukerewe	24,887.0	230	1951
9	Meru USA	Northern	Arusha	Meru and Arumeru	8,170.0	232	1920
15	North Kilimanjaro	Northern	Kilimanjaro	Rombo	8,069.0	227	1940
10	Korogwe fuelwood	Northern	Tanga	Korogwe	10,227.0	383	1957
11	Longuza	Northern	Tanga	Muheza	3,511.0	151 / 152	1957
12	Shume	Northern	Tanga	Lushoto	4,303.0	103	2016
13	West Kilimanjaro	Northern	Kilimanjaro	Siha	7,632.0	227	1940
14	Mpepo	Southern	Ruvuma	Nyasa	3,905.0	Not gazetted	
16	Rondo	Southern	Lindi	Lindi	2,979.1	125	2019
17	Iyondo Mswima	Southern Highlands	Mbeya	Ileje	12,053.0	Not gazetted	
18	Kawetire / North Usafwa	Southern Highlands	Mbeya	Mbeya	5,288.0	381	1957
19	Kiwira	Southern Highlands	Mbeya	Rungwe	2,936.0	6	1964
20	Lupembe	Southern Highlands	Njombe	Njombe	387.0	223	1953
21	Matembwe	Southern Highlands	Njombe	Njombe	169.0	323	1953

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
22	Mbizi	Southern Highlands	Rukwa	Sumbawanga	23,427.0	132	1950
23	Sao Hill	Southern Highlands	Iringa	Mufindi	135,903.0	Multiple	
24	Wino	Southern Highlands	Rukwa	Sumbawanga	17,038.0	109	1989
25	Buhigwe (Munzeze)	Western	Kigoma	Buhigwe	426.0	Not gazetted	
				Total	***498,276.1***		

Appendix 10: List of LGA natural FRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Chinyami	Central	Dodoma	Chamwino	43,330.0	442	1989
2	Goima	Central	Dodoma	Bahi	139.2	444	1989
3	Ikowa (chamheme)	Central	Dodoma	Chamwino	3,785.0	444	Not known
4	Isabe	Central	Dodoma	Kondoa	4,249.0	124	1954
5	Sasajila Mount Humbi	Central	Dodoma	Chamwino	1,145.0	443	1989
6	Senkenke	Central	Singida	Iramba	30,365.0	Not gazetted	Not gazetted
7	Diwale	Eastern	Morogoro	Morogoro	30.0	378	1968
8	Ihanga	Eastern	Morogoro	Kilombero	3,466.9	556	1958
9	Kichi Hill	Eastern	Pwani	Rufiji	14,323.0	Not gazetted	Not gazetted
10	Kilengwe	Eastern	Morogoro	Morogoro	995.5	100	1964
11	Kwangola	Eastern	Morogoro	Morogoro	34.4	379	1968
12	Magubike North	Eastern	Morogoro	Kilosa	9,599.0	Not gazetted	Not gazetted
13	Magubike South	Eastern	Morogoro	Kilosa	15,055.0	Not gazetted	Not gazetted
14	Mtita	Eastern	Pwani	Kibiti	2,998.7	329	1960
15	Nguru ya ndege	Eastern	Morogoro	Morogoro	38,190.3	487	1962
16	Nyumburuni	Eastern	Pwani	Kibiti	2,998.7	Cap. 132 p 1348	1930
17	Pangawe East	Eastern	Morogoro	Morogoro	768.5	258	1963
18	Pangawe West	Eastern	Morogoro	Morogoro	184.1	253	1963
19	Ruhoi River	Eastern	Pwani	Rufiji	68,632.0	Cap. 132 p 1348	1965
20	Zingiziwa	Eastern	Dar es Salaam	Ilala	100.4	Not gazetted	Not gazetted

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
21	Bisumwa	Lake	Mara	Butiama	200.0	Not gazetted	Not gazetted
22	Bushenya	Lake	Kagera	Missenyi	6,475.0	Not known	1987
23	Gulung'washi	Lake	Simiyu	Maswa	50.0	Not known	1948
24	Kakora	Lake	Mwanza	Kwimba	4.0	107	1956
25	Kurwirwi	Lake	Mara	Bunda	1,580.0	39	1957
26	Magana	Lake	Mara	Butiama	1,448.0	Not gazetted	Not gazetted
27	Malambo	Lake	Simiyu	Bariadi	29.0	Not gazetted	Not gazetted
28	Mbogwe-Bukombe	Lake	Geita	Bukombe	9,324.0	42	1958
29	Mhalo	Lake	Mwanza	Kwimba	914.6	304	1958
30	Miyenze	Lake	Geita	Nyang'wale	8,988.0	104	1956
31	Mwamakelemu	Lake	Mwanza	Kwimba	50.2	110	1956
32	Mwamapalala	Lake	Simiyu	Itilima	68.0	103	1956
33	Nyachina	Lake	Mwanza	Sengerema	314.3	Not known	2009
34	Nyakabindi	Lake	Simiyu	Bariadi	45.0	Not known	1954
35	Old Sola Dam	Lake	Simiyu	Maswa	19.0	111	1956
36	Ruande	Lake	Geita	Geita	15,550.0	106	1956
37	Runzewe	Lake	Geita	Bukombe	32,375.0	41	1958
38	Sima	Lake	Mwanza	Sengerema	1,820.0	180	1956
39	Sola	Lake	Simiyu	Maswa	20.2	111	1956
40	Suguti	Lake	Mara	Musoma	281.9	Not gazetted	Not gazetted
41	Talaga	Lake	Mwanza	Kwimba	43.3	72	1958
42	Ushirombo	Lake	Geita	Bukombe	7,640.5	40	1950
43	Bagai	Northern	Tanga	Lushoto	578.0	347	1955

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
44	Bombo Makole	Northern	Tanga	Lushoto	420.0	343	1955
45	Chongweni	Northern	Kilimanjaro	Same	92.0	194	1957
46	Gelai	Northern	Arusha	Longido	2,448.0	354	1988
47	Gonja	Northern	Kilimanjaro	Same	115.0	394	1960
48	Kankoma	Northern	Kilimanjaro	Same	74.0	384	1957
49	Kibwezi	Northern	Arusha	Arusha	184.0	6	1958
50	Kileo	Northern	Kilimanjaro	Mwanga	191.0	153	1956
51	Kiranga Hangae	Northern	Kilimanjaro	Same	321.0	300	1958
52	Kisiwani	Northern	Kilimanjaro	Same	70.0	23	1981
53	Kitara Ridge	Northern	Tanga	Lushoto	388.0	110	1955
54	Kitumbeine	Northern	Arusha	Longido	6,331.0	306	1958
55	Kiutu	Northern	Arusha	Arusha	42.0	8	1958
56	Kiva Hill	Northern	Tanga	Handeni	391.0	Not known	
57	Kwasunga I	Northern	Tanga	Handeni	237.9	262	1988
58	Kwasunga II	Northern	Tanga	Handeni	1,627.0	261	1988
59	Kwebago	Northern	Tanga	Bumbuli	1,500.0	329	1957
60	Kwenyashu	Northern	Tanga	Bumbuli	1,620.0	Not gazetted	
61	Kwizu	Northern	Kilimanjaro	Same	661.1	19	1953
62	Lendikinya	Northern	Arusha	Monduli	3,689.0	Not known	1971
63	Loliondo I	Northern	Arusha	Ngorongoro	3,427.0	307	1957
64	Longido	Northern	Arusha	Longido	2,015.0	372	1958
65	Luhanga	Northern	Tanga	Handeni	628.7	260	1988
66	Lukoka	Northern	Tanga	Korogwe	236.0	302/305	1958/1961

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
67	Maganda	Northern	Kilimanjaro	Same	28.0	195	1957
68	Mbalu	Northern	Tanga	Kilindi	498.0	Not gazetted	Not gazetted
69	Mduguyu	Northern	Tanga	Kilindi	425.0	Not gazetted	Not gazetted
70	Mount Gitu	Northern	Tanga	Kilindi	280.0	Not gazetted	Not gazetted
71	Mount Vuju	Northern	Tanga	Kilindi	550.6	Not gazetted	Not gazetted
72	Mtumbi	Northern	Tanga	Lushoto	261.0	349	1955
73	Mwenigombelo	Northern	Tanga	Bumbuli	1,030.0	Not gazetted	
74	Sambasha	Northern	Arusha	Arusha	5.5	3	1958
75	Sangeni	Northern	Tanga	Kilindi	1,250.0	Not gazetted	Not gazetted
76	Vumari	Northern	Kilimanjaro	Same	1,574.0	24	81
77	Chandamali	Southern	Ruvuma	Songea	70.0	Not gazetted	not gazetted
78	Chilangala	Southern	Mtwara	Newala	600.0	137	1963
79	Gumbiro	Southern	Ruvuma	Songea	17.4	Not known	1956
80	Kwalikucha	Southern	Ruvuma	Songea	33.0	Not gazetted	not gazetted
81	Litehu	Southern	Mtwara	Tandahimba	1,384.0	225	1962
82	Liumbu	Southern	Ruvuma	Songea	66.8	Not gazetted	not gazetted
83	Makaranga	Southern	Lindi	Lindi	1,052.0	554	1958
84	Maposeni	Southern	Ruvuma	Songea	173.6	553	1958
85	Mbamba bay	Southern	Ruvuma	Nyasa	400.0	450	1994
86	Mtama	Southern	Lindi	Lindi	1,026.7	554	1958
87	Nagaga	Southern	Mtwara	Masasi	1,651.0	78	1956
88	Namanyigu	Southern	Ruvuma	Songea	12.4	Not gazetted	not gazetted
89	Namikupa	Southern	Mtwara	Tandahimba	1,038.0	512	1962

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
90	Ndengele	Southern	Ruvuma	Nyasa	2,466.0	Not gazetted	Not gazetted
91	Nyangamara	Southern	Lindi	Lindi	9,200.0	Not gazetted	Not gazetted
92	Unangwa	Southern	Ruvuma	Songea	50.0	Not gazetted	not gazetted
93	Buba	Southern Highlands	Mbeya	Ileje	1,116.0	Not gazetted	Not gazetted
94	Busale	Southern Highlands	Mbeya	Kyela	1,000.0	Not gazetted	1992
95	Fonera	Southern Highlands	Songwe	Mbozi	45.3	246	1956
96	Haraka	Southern Highlands	Mbeya	Ileje	18.0	Not gazetted	
97	Ikomelo	Southern Highlands	Mbeya	Kyela	2,100.0	Not gazetted	1992
98	Ilemba	Southern Highlands	Rukwa	Sumbawanga	4,923.0	363	1961
99	Ilima	Southern Highlands	Mbeya	Rungwe	65.0	Not gazetted	Not gazetted
100	Induku	Southern Highlands	Njombe	Makete	3,539.0	Not gazetted	not gazetted
101	Ipuji	Southern highlands	Njombe	Makete	739.0	Not gazetted	not gazetted
102	Ishenta	Southern Highlands	Mbeya	Ileje	21.0	Not gazetted	
103	Itinginya	Southern Highlands	Mbeya	Ileje	286.0	Not gazetted	
104	Iyuli	Southern Highlands	Mbeya	Ileje	192.0	Not gazetted	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
105	Kalembo/Halembo	Southern Highlands	Mbeya	Ileje	264.0	Not gazetted	
106	Katulyange	Southern Highlands	Rukwa	Nkasi	515.4	Not gazetted	Not gazetted
107	Kisesa	Southern Highlands	Iringa	Iringa	220.0	37	2002
108	Kitonga Kihulula	Southern Highlands	Iringa	Kilolo	9,670.0	Not gazetted	not gazetted
109	Kyejo	Southern Highlands	Mbeya	Rungwe	696.4	Not gazetted	Not gazetted
110	Long'osont	Southern Highlands	Songwe	Mbozi	421.5	345	1958
111	Lugela	Southern Highlands	Mbeya	Kyela	550.0	Not gazetted	1992
112	Lyambalyambamfipa	Southern Highlands	Rukwa	Sumbawanga	24,000.0	Not gazetted	Not gazetted
113	Mapogoro	Southern Highlands	Mbeya	Ileje	99.0	Not gazetted	
114	Masukulu	Southern Highlands	Mbeya	Kyela	750.0	Not gazetted	1992
115	Masukulu	Southern Highlands	Mbeya	Rungwe	589.5	Not gazetted	Not gazetted
116	Mbuzi	Southern Highlands	Rukwa	Nkasi	2,969.2	Not gazetted	Not gazetted
117	Mfili	Southern Highlands	Rukwa	Nkasi	2,525.7	Not gazetted	Not gazetted

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
118	Nakaba	Southern Highlands	Mbeya	Kyela	683.0	Not gazetted	1993
119	Nakalulu	Southern Highlands	Mbeya	Ileje	112.0	Not gazetted	Not gazetted
120	Nalupembe	Southern Highlands	Mbeya	Ileje	126.0	Not gazetted	Not gazetted
121	Namkumbukwa	Southern Highlands	Mbeya	Ileje	150.0	Not gazetted	Not gazetted
122	Ndoka	Southern Highlands	Mbeya	Ileje	3,106.0	Not gazetted	
123	Ntazu	Southern Highlands	Songwe	Mbozi	627.9	2	1958
124	Pimbi	Southern Highlands	Mbeya	Ileje	785.0	Not gazetted	
125	Ubungu	Southern Highlands	Mbeya	Ileje	240.0	559	1998
126	Buyange	Western	Shinyanga	Shinyanga	346.8	67	1958
127	Buyoga Hill	Western	Shinyanga	Shinyanga	27.2	272	1956
128	Goweko	Western	Tabora	Sikonge	41,600.0	252	1963
129	Karitu	Western	Tabora	Nzega	37,556.0	442	1958
130	Makingi hill	Western	Kigoma	Kasulu	207.2	510	1958
131	Manongho	Western	Shinyanga	Shinyanga	409.2	64	1958
132	Masito	Western	Kigoma	Ivinza	156,493.6	730	2018
133	Mpembampazi	Western	Tabora	Sikonge	134,679.0	345	1955
134	Mpunze	Western	Shinyanga	Kahama (Ushetu)	3,800.0	54	1958

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
135	Mwakarundi	Western	Tabora	Nzega	13,209.0	442	1958
136	Mwangilye Hill	Western	Shinyanga	Shinyanga	39.4	104	1953
137	Mwanhala	Western	Tabora	Nzega	2,849.0	442	1958
138	Mwatunge Hill	Western	Shinyanga	Shinyanga	38.4	273	1956
139	Ngukumo	Western	Tabora	Nzega	2,590.0	62	1956
140	Nkamba	Western	Katavi	Mpanda	99,264.5	553	1958
141	Nyamilanga Hill	Western	Shinyanga	Shinyanga	43.2	271	1956
142	Puge North	Western	Tabora	Nzega	3,108.0	61	1956
143	Puge South	Western	Tabora	Nzega	2,590.0	60	1956
144	Rukunda-Kachambi	Western	Kigoma	Uvinza	3,525.0	Not known	2000
145	Sikonge	Western	Tabora	Sikonge	56,979.7	265	1954
146	Tongwe Magharibi Proposed	Western	Katavi	Mpanda	365.0	Not known	2019
147	Tongwe Mashariki	Western	Katavi	Mpanda	168,415.2	196	1963
148	Ugunda	Western	Tabora	Sikonge	129,499.4	384	1954
149	Ulyankulu	Western	Tabora	Kaliua	239,833.0	54	1962
150	Unyambiu North	Western	Tabora	Igunga	9,842.0	442	1958
151	Ushetu/Ubagwe	Western	Shinyanga	Kahama (Ushetu)	52,000.0	442	1958
152	Usumbwa	Western	Shinyanga	Kahama (Ushetu)	36,000.0	442	1958
153	Walla river	Western	Tabora	Sikonge	160,579.3	251	1956
Total					***1,799,093.2***		

Appendix 11: List of LGA plantation FRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted	Management objectives
1	Bujingwa	Lake	Mwanza	Kwimba	25.2	107	1956	Production
2	Ibindo	Lake	Mwanza	Kwimba	24.3	9	1958	Production
3	Half mile strip	Northern	Kilimanjaro	Rombo	1,180.0	Not gazetted		Production
4	Langoni	Northern	Tanga	Pangani	70.0	Not gazetted		Production
5	Mleni	Northern	Tanga	Tanga	65.5	Not gazetted		Production
Total					***1,365.0***			

Appendix 12: List of VLFRs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
1	Aata	Central	Manyara	Hanang	167.3	Not gazetted	2010	No data
2	Ayasanda	Central	Manyara	Babati	550.0	Not gazetted	1995	No data
3	Bambay Mountain	Central	Manyara	Babati	600.0	Not gazetted	2009	No data
4	Bashanet	Central	Manyara	Babati	316.4	Not gazetted	2010	No data
5	Bermi	Central	Manyara	Babati	122.5	Not gazetted	2009	No data
6	Bonga mountain	Central	Manyara	Babati	500.0	Not gazetted	2009	No data
7	Bubu	Central	Manyara	Babati	1,300.0	Not gazetted	1995	No data
8	Bulu	Central	Dodoma	Mpwapwa	807.0	Not gazetted	2012	No data
9	Chase	Central	Dodoma	Chemba	1,805.0	Not gazetted	2011	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
10	Chemichem	Central	Dodoma	Mpwapwa	1,202.0	Not gazetted	2012	No data
11	Chura	Central	Dodoma	Mpwapwa	23.0	Not gazetted	2012	No data
12	Difir	Central	Manyara	Babati	60.0	Not gazetted	2009	No data
13	Dirma	Central	Manyara	Hanang	6,360.0	Not gazetted	1996	Protection
14	Dohom	Central	Manyara	Babati	754.0	Not gazetted	2009	No data
15	Domanga	Central	Manyara	Mbulu	4,000.0	Not gazetted	2014	No data
16	Duru	Central	Manyara	Babati	800.0	Not gazetted	1995	No data
17	Endaberg	Central	Manyara	Babati	405.9	Not gazetted	2009	No data
18	Endadimet	Central	Manyara	Babati	640.0	Not gazetted	1995	No data
19	Endadu	Central	Manyara	Hanang	138.6	Not gazetted	2010	No data
20	Endagwe	Central	Manyara	Babati	550.0	Not gazetted	1995	No data
21	Endamaghay	Central	Manyara	Babati	950.0	Not gazetted	1995	No data
22	Endanachan	Central	Manyara	Babati	400.0	Not gazetted	1995	No data
23	Endaw	Central	Manyara	Babati	475.0	Not gazetted	2010	No data
24	Erri	Central	Manyara	Babati	1,252.3	Not gazetted	2009	No data
25	Eshkesh	Central	Manyara	Mbulu	3,000.0	Not gazetted	2014	No data
26	Galigali	Central	Dodoma	Mpwapwa	4,803.0	Not gazetted	2012	No data
27	Ganana Hill	Central	Manyara	Hanang	20.0	Not gazetted	2002	No data
28	Gesbert	Central	Manyara	Babati	500.0	Not gazetted	1995	No data
29	Gidabaghar	Central	Manyara	Babati	380.0	Not gazetted	1995	No data
30	Gidamulod	Central	Manyara	Hanang	728.9	Not gazetted	2010	No data
31	Gidas	Central	Manyara	Babati	300.0	Not gazetted	1995	No data
32	Gwandi	Central	Dodoma	Chemba	3,000.0	Not gazetted	2010	No data
33	Haysali	Central	Manyara	Mbulu	2,900.0	Not gazetted	2014	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
34	Haysam	Central	Manyara	Babati	148.5	Not gazetted	2009	No data
35	Hewas	Central	Manyara	Babati	215.0	Not gazetted	2009	No data
36	Himit Mountain forest	Central	Manyara	Babati	500.0	Not gazetted	2009	No data
37	Hoshan	Central	Manyara	Babati	400.0	Not gazetted	1995	No data
38	Ipondelo	Central	Dodoma	Mpwapwa	916.0	Not gazetted	2012	No data
39	Isoliwaya	Central	Dodoma	Mpwapwa	1,160.0	Not gazetted	2012	No data
40	Kiegea	Central	Dodoma	Mpwapwa	3,080.0	Not gazetted	2012	No data
41	Kikore	Central	Dodoma	Kondoa	41.0	Not gazetted	2010	Protection
42	Kisese sauna	Central	Dodoma	Kondoa	944.0	Not gazetted	2010	No data
43	Kizi	Central	Dodoma	Mpwapwa	2,227.0	Not gazetted	2012	No data
44	Kwaona	Central	Manyara	Hanang	43.3	Not gazetted	2010	No data
45	Long	Central	Manyara	Babati	235.6	Not gazetted	2010	No data
46	Lugala	Central	Dodoma	Mpwapwa	630.0	Not gazetted	2012	No data
47	Luxumanda	Central	Manyara	Babati	171.0	Not gazetted	2009	No data
48	Madege	Central	Dodoma	Kondoa	68.8	Not gazetted	2010	No data
49	Maganjwa/Dabil	Central	Manyara	Babati	475.0	Not gazetted	2009	No data
50	Magasai	Central	Singida	Manyoni	627.1	Not gazetted	2018	No data
51	Majengo	Central	Manyara	Babati	320.2	Not gazetted	2009	No data
52	Makanda	Central	Singida	Manyoni	554.7	Not gazetted	2018	No data
53	Makorongo	Central	Dodoma	Chemba	1,055.0	Not gazetted	2011	No data
54	Mbikimkiwa	Central	Dodoma	Mpwapwa	40.0	Not gazetted	2012	No data
55	Mbuga	Central	Dodoma	Mpwapwa	804.0	Not gazetted	2012	No data
56	Merr	Central	Manyara	Babati	100.0	Not gazetted	2009	No data
57	Mgori	Central	Singida	Singida	39,361.0	Not gazetted	1995	Protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
58	Milambe (Madaha)	Central	Dodoma	Chemba	408.0	Not gazetted	2010	No data
59	Mima	Central	Dodoma	Mpwapwa	589.0	Not gazetted	2012	No data
60	Mitati	Central	Dodoma	Kondoa	1,103.0	Not gazetted	2010	No data
61	Mkurumuzi	Central	Dodoma	Kondoa	538.0	Not gazetted	2010	No data
62	Mlilii	Central	Singida	Ikungi	5,700.0	Not gazetted	1995	No data
63	Mongowamono	Central	Manyara	Mbulu	2,500.0	Not gazetted	2014	No data
64	Mpola	Central	Singida	Manyoni	591.2	Not gazetted	2018	Protection
65	Ndege	Central	Dodoma	Mpwapwa	131.0	Not gazetted	2012	No data
66	Nonko	Central	Singida	Manyoni	900.0	Not gazetted	2018	No data
67	Qameyu	Central	Manyara	Babati	239.0	Not gazetted	2010	No data
68	Qash	Central	Manyara	Babati	80.0	Not gazetted	2009	No data
69	Riroda	Central	Manyara	Babati	850.0	Not gazetted	1995	No data
70	Sangandunghu	Central	Dodoma	Mpwapwa	150.0	Not gazetted	2012	Production
71	Sangara	Central	Manyara	Babati	950.0	Not gazetted	1995	No data
72	Sarame	Central	Manyara	Babati	1,480.0	Not gazetted	2009	Protection
73	Sasilo	Central	Singida	Manyoni	820.8	Not gazetted	2018	No data
74	Seloto	Central	Manyara	Babati	165.8	Not gazetted	2009	No data
75	Senga	Central	Manyara	Hanang	8,220.0	Not gazetted	2010	No data
76	Sharmo	Central	Manyara	Babati	300.0	Not gazetted	2009	No data
77	Sinyenge	Central	Manyara	Hanang	2,959.0	Not gazetted	2010	No data
78	Sitim	Central	Manyara	Hanang	256.6	Not gazetted	2010	No data
79	Sora	Central	Manyara	Hanang	50.0	Not gazetted	2002	No data
80	SULEDO	Central	Manyara	Kiteto	167,400.0	2/12/01/2007	2007	Both production and protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
81	Ufana	Central	Manyara	Babati	304.0	Not gazetted	2009	No data
82	Warang	Central	Manyara	Hanang	1,704.2	Not gazetted	2010	No data
83	Yorotonik	Central	Manyara	Babati	500.0	Not gazetted	1995	No data
84	Bebe	Eastern	Morogoro	Morogoro	1,422.0	Not gazetted	2005	No data
85	Bogobogo	Eastern	Pwani	Mkuranga	197.1	Not gazetted	2011	Protection
86	Bwage	Eastern	Morogoro	Mvomero	102.9	Not gazetted	2018	Production
87	Chabima	Eastern	Morogoro	Kilosa	10,243.3	Not gazetted	2017	Both production and protection
88	Chakenge	Eastern	Pwani	Kisarawe	316.0	Not gazetted	2015	Protection
89	Chakomni	Eastern	Pwani	Mkuranga	95.9	Not gazetted	2011	Protection
90	Chamga-vinyaga	Eastern	Pwani	Mkuranga	1,206.6	Not gazetted	2011	Protection
91	Chokoachoko	Eastern	Morogoro	Ulanga	8,298.0	Not gazetted	2017	Production
92	Diburuma	Eastern	Morogoro	Mvomero	1,488.0	Not gazetted	2018	Production
93	Difinga	Eastern	Morogoro	Mvomero	1,708.4	Not gazetted	2018	Production
94	Dodoma	Eastern	Morogoro	Kilombero	1,300.0	Not gazetted	2004	No data
95	Dodoma Isanga	Eastern	Morogoro	Kilosa	2,464.0	Not gazetted	2011	Production
96	Gogo	Eastern	Morogoro	Morogoro	368.0	Not gazetted	2005	No data
97	Gongwe	Eastern	Morogoro	Kilosa	2,987.8	Not gazetted	2018	Production
98	Gonja	Eastern	Morogoro	Mvomero	799.0	Not gazetted	2018	Production
99	Ibiki	Eastern	Morogoro	Kilombero	1,189.3	Not gazetted	2009	No data
100	Ibiki	Eastern	Morogoro	Kilombero	489.3	Not gazetted	2009	No data
101	Ibingu	Eastern	Morogoro	Kilosa	3,248.0	Not gazetted	2011	Production
102	Idete	Eastern	Morogoro	Kilosa	1,408.0	Not gazetted	2012	Production
103	Ihombwe	Eastern	Morogoro	Kilosa	13,790.4	Not gazetted	2012	Production

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
104	Ilembe	Eastern	Morogoro	Kilombero	1.0	Not gazetted	2004	No data
105	Ilonga	Eastern	Morogoro	Kilosa	795.0	Not gazetted	2012	Production
106	Itongowa kipuga	Eastern	Morogoro	Kilombero	2,563.0	Not gazetted	2004	No data
107	Itumbati	Eastern	Pwani	Mkuranga	146.3	Not gazetted	2011	Protection
108	Iwungi	Eastern	Morogoro	Kilombero	581.1	Not gazetted	2005	No data
109	Kabogwa	Eastern	Morogoro	Morogoro	1,653.0	Not gazetted	2005	No data
110	Katurukila	Eastern	Morogoro	Kilombero	72.0	Not gazetted	2005	No data
111	Kibasila	Eastern	Morogoro	Kilombero	783.1	Not gazetted	2009	No data
112	Kibatula	Eastern	Morogoro	Mvomero	332.2	Not gazetted	2018	Production
113	Kibupuni	Eastern	Pwani	Mkuranga	44.7	Not gazetted	2011	Protection
114	Kidugalo	Eastern	Pwani	Kisarawe	105.0	Not gazetted	2015	Protection
115	Kidunda	Eastern	Morogoro	Morogoro	2,888.0	Not gazetted	2005	No data
116	Kigunga	Eastern	Morogoro	Kilosa	1,155.5	Not gazetted	2013	Production
117	Kihondo	Eastern	Morogoro	Mvomero	2,093.0	Not gazetted	2019	Production
118	Kila	Eastern	Morogoro	Morogoro	295.0	Not gazetted	2005	No data
119	Kimbiru	Eastern	Morogoro	Ulanga	4,344.0	Not gazetted	2017	Production
120	King'ulung'ulu	Eastern	Morogoro	Kilombero	76.4	Not gazetted	2009	No data
121	Kisanga	Eastern	Pwani	Kisarawe	101.0	Not gazetted	2015	Protection
122	Kisanga	Eastern	Morogoro	Kilosa	12,740.0	Not gazetted	2011	Production
123	Kisangire	Eastern	Pwani	Kisarawe	633.3	Not gazetted	2015	Protection
124	Kisongwe	Eastern	Morogoro	Kilosa	5,378.7	Not gazetted	2018	Production
125	Kitunduweta	Eastern	Morogoro	Kilosa	3,249.0	Not gazetted	2015	Production
126	Kongo	Eastern	Pwani	Mkuranga	102.0	Not gazetted	2011	Protection
127	Lunenzi	Eastern	Morogoro	Kilosa	2,175.0	Not gazetted	2011	Production

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
128	Lusoma/Ijia	Eastern	Morogoro	Kilombero	474.3	Not gazetted	2009	No data
129	Luwuya	Eastern	Morogoro	Ulanga	331.0	Not gazetted	2017	Production
130	Madizini	Eastern	Morogoro	Kilosa	851.4	Not gazetted	2018	Production
131	Mafumbi	Eastern	Pwani	Kisarawe	1,182.8	Not gazetted	2015	Protection
132	Magoma	Eastern	Pwani	Mkuranga	97.3	Not gazetted	2011	Protection
133	Magunga	Eastern	Morogoro	Mvomero	1,277.2	Not gazetted	2018	No data
134	Maharage Gwata	Eastern	Pwani	Kisarawe	2,670.0	Not gazetted	2015	Protection
135	Maharaka	Eastern	Morogoro	Mvomero	5,282.6	Not gazetted	2018	Production
136	Makuyu	Eastern	Morogoro	Mvomero	574.1	Not gazetted	2018	Production
137	Malolo A	Eastern	Morogoro	Kilosa	27,828.0	Not gazetted	2012	Production
138	Masimba	Eastern	Morogoro	Mvomero	3,780.0	Not gazetted	2018	Production
139	Matuli	Eastern	Morogoro	Morogoro	272.0	Not gazetted	2005	No data
140	Mbamba	Eastern	Morogoro	Kilosa	1,583.4	Not gazetted	2017	Production
141	Mbwara	Eastern	Pwani	Rufiji	2,454.3	Not gazetted	2005	No data
142	Mfuluni	Eastern	Morogoro	Kilosa	2,243.0	Not gazetted	2012	Production
143	Mhenda	Eastern	Morogoro	Kilosa	7,735.9	Not gazetted	2013	Production
144	Mibonha	Eastern	Morogoro	Morogoro	3,924.0	Not gazetted	2005	No data
145	Misengele	Eastern	Morogoro	Mvomero	4,312.1	Not gazetted	2019	Production
146	Mkiu	Eastern	Pwani	Mkuranga	180.1	Not gazetted	2011	Protection
147	Mkwala	Eastern	Pwani	Mkuranga	22.7	Not gazetted	2011	Protection
148	Mng'eng'esi	Eastern	Morogoro	Kilombero	295.0	Not gazetted	2009	No data
149	Msalabani	Eastern	Morogoro	Kilosa	3,540.0	Not gazetted	2012	Both production and protection
150	Msanga Sokoni	Eastern	Pwani	Kisarawe	238.7	Not gazetted	2015	Protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
151	Msimba	Eastern	Morogoro	Kilosa	27,524.0	Not gazetted	2011	Both production and protection
152	Msolokelo	Eastern	Morogoro	Mvomero	1,574.2	Not gazetted	2018	No data
153	Msongozi	Eastern	Morogoro	Mvomero	5,037.0	Not gazetted	2019	Production
154	Mvumi	Eastern	Morogoro	Kilosa	837.1	Not gazetted	2017	Production
155	Mwokovu	Eastern	Morogoro	Kilombero	747.8	Not gazetted	2009	No data
156	Myale	Eastern	Morogoro	Kilombero	43.1	Not gazetted	2009	No data
157	Mziha	Eastern	Morogoro	Mvomero	308.4	Not gazetted	2018	Production
158	Nambunju	Eastern	Pwani	Rufiji	1,966.0	Not gazetted	2005	No data
159	Ndefi	Eastern	Morogoro	Kilombero	1,500.0	Not gazetted	2005	No data
160	Ndole	Eastern	Morogoro	Mvomero	1,422.0	Not gazetted	2018	Production
161	Ngong'olo	Eastern	Morogoro	Morogoro	77.0	Not gazetted	2005	No data
162	Ngowo	Eastern	Morogoro	Kilombero	268.0	Not gazetted	2009	No data
163	Ngwelengala	Eastern	Morogoro	Morogoro	50.0	Not gazetted	2005	No data
164	Nyali	Eastern	Morogoro	Kilosa	5,626.0	Not gazetted	2011	Production
165	Nyamambi	Eastern	Pwani	Mkuranga	251.3	Not gazetted	2011	Both production and protection
166	Nyamkongo	Eastern	Pwani	Rufiji	1,294.4	Not gazetted	2006	Production
167	Nyangolombe	Eastern	Pwani	Mkuranga	227.5	Not gazetted	2011	Protection
168	Nyani	Eastern	Pwani	Kisarawe	1,006.5	Not gazetted	2015	Protection
169	Rudewa gongoni	Eastern	Morogoro	Kilosa	2,310.4	Not gazetted	2017	Production
170	Salanga	Eastern	Morogoro	Kilombero	1,400.0	Not gazetted	2005	No data
171	Sewe Kipera	Eastern	Morogoro	Mvomero	8,618.6	Not gazetted	2018	No data
172	Sofu	Eastern	Pwani	Kisarawe	815.8	Not gazetted	2015	Protection
173	Tawi	Eastern	Pwani	Rufiji	2,787.0	Not gazetted	2005	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
174	Ugulo	Eastern	Morogoro	Morogoro	1.4	Not gazetted	2005	No data
175	Uhanila	Eastern	Morogoro	Kilombero	7,573.0	Not gazetted	2009	No data
176	Ulaya Kibaoni	Eastern	Morogoro	Kilosa	1,196.1	Not gazetted	2013	Production
177	Unone	Eastern	Morogoro	Kilosa	3,040.5	Not gazetted	2016	Production
178	Unumbi	Eastern	Morogoro	Kilombero	311.2	Not gazetted	2009	No data
179	Vianzi	Eastern	Pwani	Mkuranga	838.7	Not gazetted	2011	Protection
180	Vinanze	Eastern	Morogoro	Morogoro	150.0	Not gazetted	2005	No data
181	Yangeyange	Eastern	Morogoro	Morogoro	100.0	Not gazetted	2005	No data
182	Yelya	Eastern	Pwani	Rufiji	1,136.8	Not gazetted	2006	Production
183	Zombo Lumbo	Eastern	Morogoro	Kilosa	1,192.2	Not gazetted	2018	Production
184	Ilekanilo	Lake	Mwanza	Sengerema	58.0	Not gazetted	2009	No data
185	Kashagwe	Lake	Kagera	Muleba	23.8	Not gazetted	2014	No data
186	Kasomeko	Lake	Mwanza	Sengerema	88.3	Not gazetted	2008	No data
187	Mutagata	Lake	Kagera	Kyerwa	92.0	Not gazetted	2019	No data
188	Nyambugwe	Lake	Kagera	Muleba	70.2	Not gazetted	2014	No data
189	Nyamishemele	Lake	Kagera	Muleba	886.0	Not gazetted	2014	No data
190	Nyankurukulu	Lake	Mwanza	Sengerema	71.9	Not gazetted	2009	No data
191	Rwamahungu	Lake	Kagera	Muleba	68.4	Not gazetted	2014	No data
192	Mungere	Northern	Arusha	Monduli	361.0	Not gazetted	2004	No data
193	Kwedijela	Northern	Tanga	Handeni	21.6	Not gazetted	2019	No data
194	Kwedilomba	Northern	Tanga	Handeni	6.9	Not gazetted	2019	No data
195	Mzungu wa Saba	Northern	Tanga	Handeni	288.3	Not gazetted	2019	No data
196	Zaila	Northern	Tanga	Handeni	27.7	Not gazetted	2019	No data
197	Zikilo	Northern	Tanga	Handeni	6.5	Not gazetted	2019	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
198	Amani	Northern	Tanga	Handeni	101.2	Not gazetted	2019	No data
199	Bagamoyo	Northern	Tanga	Handeni	1,366.4	Not gazetted	2019	No data
200	Baloki	Northern	Tanga	Muheza	10.0		Unknown	No data
201	Beho	Northern	Tanga	Pangani	3,578.0	Not gazetted	2006	No data
202	Bojo	Northern	Tanga	Pangani	3,411.0	Not gazetted	2006	No data
203	Bomani	Northern	Tanga	Muheza	10.0		Unknown	No data
204	Chambogho	Northern	Tanga	Lushoto	6,050.0	Not gazetted	2007	No data
205	Cheliguru	Northern	Tanga	Handeni	15.8	Not gazetted	2019	No data
206	Chihomonto	Northern	Tanga	Handeni	207.3	Not gazetted	2019	No data
207	Chogawali	Northern	Tanga	Handeni	36.4	Not gazetted	2019	No data
208	Deai	Northern	Tanga	Lushoto	50.0	Not gazetted	2007	No data
209	Emau	Northern	Tanga	Muheza	6.0		Unknown	No data
210	Enguserosambu (Loliondo II)	Northern	Arusha	Ngorongoro	777.8	Not gazetted	Unknown	No data
211	Esilalei	Northern	Arusha	Monduli	1,375.0	Not gazetted	2004	No data
212	Gole A	Northern	Tanga	Handeni	6,342.0	Not gazetted	2019	No data
213	Gole B	Northern	Tanga	Handeni	66.0	Not gazetted	2019	No data
214	Handei	Northern	Tanga	Bumbuli	200.0	Not gazetted	1990s	No data
215	Horohoro	Northern	Tanga	Mkinga	145.3	Not gazetted	2014	No data
216	Kabagomchuzi	Northern	Tanga	Handeni	270.1	Not gazetted	2019	No data
217	Kagari	Northern	Tanga	Kilindi	781.0	Not gazetted	2007	No data
218	Kambai	Northern	Tanga	Muheza	53.0		Unknown	No data
219	Kanyarika	Northern	Tanga	Muheza	8.0		Unknown	No data
220	Kaziwa mdogo	Northern	Tanga	Muheza	453.0		Unknown	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
221	Kenei	Northern	Tanga	Kilindi	442.1	Not gazetted	2010	No data
222	Kibua	Northern	Tanga	Kilindi	203.5	Not gazetted	2010	No data
223	Kibubu	Northern	Tanga	Pangani	3,266.0	Not gazetted	2013	No data
224	Kichangani	Northern	Tanga	Mkinga	391.0	Not gazetted	2011	No data
225	Kidimbwi Nguo	Northern	Tanga	Mkinga	452.9	Not gazetted	2014	No data
226	Kiguha	Northern	Tanga	Bumbuli	150.0	Not gazetted	1990s	No data
227	Kikuyuni	Northern	Tanga	Handeni	34.0	Not gazetted	2019	No data
228	Kingo	Northern	Tanga	Mkinga	752.0	Not gazetted	2011	No data
229	Kingubi/Mahefulo	Northern	Tanga	Handeni	17.7	Not gazetted	2019	No data
230	Kisima wanga	Northern	Tanga	Muheza	3.5		Unknown	No data
231	Kitulwe	Northern	Tanga	Muheza	500.0		Unknown	No data
232	Kitumbi	Northern	Tanga	Handeni	7,827.7	Not gazetted	2019	No data
233	Kizee/Kizere	Northern	Tanga	Muheza	39.4		Unknown	Protection
234	Kizingata	Northern	Tanga	Muheza	30.0		Unknown	No data
235	Koluhombwa	Northern	Tanga	Handeni	4.5	Not gazetted	2019	No data
236	Koluwe	Northern	Tanga	Handeni	8.7	Not gazetted	2019	No data
237	Komdala	Northern	Tanga	Handeni	17.1	Not gazetted	2019	No data
238	Komfeno	Northern	Tanga	Handeni	370.1	Not gazetted	2019	No data
239	Komkora	Northern	Tanga	Handeni	29.7	Not gazetted	2019	No data
240	Kungui	Northern	Tanga	Muheza	6.0		Unknown	No data
241	Kwachilungu	Northern	Tanga	Handeni	29.0	Not gazetted	2019	No data
242	Kwachogongo	Northern	Tanga	Handeni	45.6	Not gazetted	2019	No data
243	Kwachundo	Northern	Tanga	Handeni	30.8	Not gazetted	2019	No data
244	Kwahatibu	Northern	Tanga	Handeni	100.1	Not gazetted	2019	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
245	Kwakirunga	Northern	Tanga	Handeni	227.2	Not gazetted	2019	No data
246	Kwamahede	Northern	Tanga	Handeni	12.6	Not gazetted	2019	No data
247	Kwamajali	Northern	Tanga	Kilindi	172.8	Not gazetted	2007	No data
248	Kwamangwengwe	Northern	Tanga	Handeni	468.2	Not gazetted	2019	No data
249	Kwamawia	Northern	Tanga	Handeni	8.7	Not gazetted	2019	No data
250	Kwamgodi	Northern	Tanga	Handeni	3.5	Not gazetted	2019	No data
251	Kwamgono	Northern	Tanga	Handeni	21.3	Not gazetted	2019	No data
252	Kwamlishi / Msagavile	Northern	Tanga	Handeni	632.0	Not gazetted	2019	No data
253	Kwamnana	Northern	Tanga	Handeni	14.6	Not gazetted	2019	No data
254	Kwamndiba	Northern	Tanga	Handeni	278.5	Not gazetted	2019	No data
255	Kwamsangule	Northern	Tanga	Handeni	28.0	Not gazetted	2019	No data
256	Kwamsenga	Northern	Tanga	Handeni	760.6	Not gazetted	2019	No data
257	Kwamungwe	Northern	Tanga	Handeni	234.2	Not gazetted	2019	No data
258	Kwandege	Northern	Tanga	Handeni	10.8	Not gazetted	2019	No data
259	Kwani/Tongwe	Northern	Tanga	Muheza	3,746.0		Unknown	No data
260	Kwanjebe	Northern	Tanga	Handeni	39.7	Not gazetted	2019	No data
261	Kwasamhika	Northern	Tanga	Handeni	32.6	Not gazetted	2019	No data
262	Kwatango	Northern	Tanga	Pangani	1,092.0	Not gazetted	2006	No data
263	Kwavinonde	Northern	Tanga	Pangani	83.0	Not gazetted	2006	No data
264	Kwdibirika	Northern	Tanga	Handeni	4.7	Not gazetted	2019	No data
265	Kwechede	Northern	Tanga	Handeni	79.7	Not gazetted	2019	No data
266	Kwedibane	Northern	Tanga	Handeni	5.6	Not gazetted	2019	No data
267	Kwedibwigu	Northern	Tanga	Handeni	1,680.1	Not gazetted	2019	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
268	Kwedifingo	Northern	Tanga	Handeni	221.4	Not gazetted	2019	No data
269	Kwedilamamitoho	Northern	Tanga	Handeni	126.5	Not gazetted	2019	No data
270	Kwedipanga	Northern	Tanga	Handeni	317.3	Not gazetted	2019	No data
271	Kwedizandu	Northern	Tanga	Handeni	50.0	Not gazetted	2019	No data
272	Kwedolome	Northern	Tanga	Handeni	15.0	Not gazetted	2019	No data
273	Kwegogwe	Northern	Tanga	Lushoto	32.0	Not gazetted	2007	No data
274	Kwehuzi	Northern	Tanga	Handeni	38.6	Not gazetted	2019	No data
275	Kweichofu	Northern	Tanga	Handeni	1.4	Not gazetted	2019	No data
276	Kweingombe	Northern	Tanga	Kilindi	516.6	Not gazetted	2010	No data
277	Kweisonga	Northern	Tanga	Handeni	69.5	Not gazetted	2019	No data
278	Kwekilatu	Northern	Tanga	Kilindi	596.0	Not gazetted	2010	No data
279	Kwekilingo	Northern	Tanga	Handeni	326.5	Not gazetted	2019	No data
280	Kwekipelelo	Northern	Tanga	Handeni	45.8	Not gazetted	2019	No data
281	Kwekisanga	Northern	Tanga	Handeni	107.4	Not gazetted	2019	No data
282	Kwemazagati	Northern	Tanga	Muheza	25.0		Unknown	No data
283	Kwemchungwa	Northern	Tanga	Muheza	14.0		Unknown	No data
284	Kwendelema	Northern	Tanga	Muheza	6.7		Unknown	No data
285	Kwendizi	Northern	Tanga	Handeni	17.3	Not gazetted	2019	No data
286	Kweng`ombe	Northern	Tanga	Handeni	76.6	Not gazetted	2019	No data
287	Kwenjeze	Northern	Tanga	Handeni	8.4	Not gazetted	2019	No data
288	Kwesinge	Northern	Tanga	Pangani	331.0	Not gazetted	2006	No data
289	Kwevumo	Northern	Tanga	Muheza	29.0		Unknown	No data
290	Kwewina	Northern	Tanga	Muheza	96.7		Unknown	No data
291	Kwezitu	Northern	Tanga	Muheza	36.0		Unknown	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
292	Kwezizumi	Northern	Tanga	Kilindi	287.6	Not gazetted	2018	No data
293	Kwizu	Northern	Tanga	Handeni	27.2	Not gazetted	2019	No data
294	Lewa	Northern	Tanga	Handeni	6.3	Not gazetted	2019	No data
295	Lolkisale	Northern	Arusha	Monduli	960.0	Not gazetted	2004	No data
296	Lufuvi	Northern	Tanga	Handeni	40.5	Not gazetted	2019	No data
297	Luhombwa	Northern	Tanga	Handeni	6.2	Not gazetted	2019	No data
298	Lukwela	Northern	Tanga	Handeni	255.8	Not gazetted	2019	No data
299	Lumpi	Northern	Tanga	Kilindi	852.0	Not gazetted	2010	No data
300	Lungwana	Northern	Kilimanjaro	Same	457.7	Not gazetted	2018	No data
301	Lusaka lutale	Northern	Tanga	Handeni	13.8	Not gazetted	2019	No data
302	Luye	Northern	Tanga	Kilindi	185.9	Not gazetted	2010	No data
303	Lwelojang`oma	Northern	Tanga	Handeni	8.9	Not gazetted	2019	No data
304	Mafyeyu Mavagiro	Northern	Tanga	Kilindi	373.5	Not gazetted	2007	No data
305	Majari mkurumiro	Northern	Tanga	Handeni	1,385.7	Not gazetted	2019	No data
306	Makole	Northern	Tanga	Handeni	955.2	Not gazetted	2019	No data
307	Mampotwe	Northern	Tanga	Muheza	3.5		Unknown	No data
308	Mangarangara	Northern	Tanga	Handeni	3.4	Not gazetted	2019	No data
309	Mantidi	Northern	Tanga	Handeni	13.8	Not gazetted	2019	No data
310	Masenya	Northern	Tanga	Kilindi	154.0	Not gazetted	2010	No data
311	Matugusa	Northern	Tanga	Kilindi	1,072.5	Not gazetted	2007	No data
312	Mavuga	Northern	Tanga	Handeni	782.0	Not gazetted	2019	No data
313	Mawanda	Northern	Tanga	Handeni	15.7	Not gazetted	2019	No data
314	Mawata	Northern	Tanga	Pangani	4,953.0	Not gazetted	2006	Both production and protection
315	Mayuyu	Northern	Tanga	Handeni	84.4	Not gazetted	2019	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
316	Mazashai	Northern	Tanga	Lushoto	22.0	Not gazetted	2007	No data
317	Maziwa	Northern	Tanga	Handeni	60.7	Not gazetted	2019	No data
318	Mbago ya Mapande	Northern	Tanga	Handeni	9.6	Not gazetted	2019	No data
319	Mbwego	Northern	Tanga	Kilindi	1,095.0	Not gazetted	2010	No data
320	Mbwewe	Northern	Tanga	Handeni	31.8	Not gazetted	2019	No data
321	Mgana	Northern	Tanga	Handeni	143.2	Not gazetted	2019	No data
322	Milangantembo	Northern	Tanga	Handeni	567.4	Not gazetted	2019	No data
323	Minenge	Northern	Tanga	Handeni	24.4	Not gazetted	2019	No data
324	Mkumbara	Northern	Tanga	Handeni	185.5	Not gazetted	2019	No data
325	Mliakwenzi	Northern	Tanga	Mkinga	76.0	Not gazetted	2014	No data
326	Mlima Kolimba	Northern	Tanga	Handeni	282.6	Not gazetted	2019	No data
327	Mlima Mbuta	Northern	Tanga	Mkinga	2,224.0	Not gazetted	2012	No data
328	Mlima Mongo	Northern	Tanga	Handeni	26.7	Not gazetted	2019	No data
329	Mnahoza	Northern	Tanga	Handeni	21.1	Not gazetted	2019	No data
330	Mnindo	Northern	Tanga	Handeni	8.5	Not gazetted	2019	No data
331	Mount Bombo	Northern	Tanga	Lushoto	1,600.0	Not gazetted	2007	No data
332	Mpangala	Northern	Tanga	Handeni	148.0	Not gazetted	2019	No data
333	Mpembeni	Northern	Tanga	Handeni	30.3	Not gazetted	2019	No data
334	Mtonga	Northern	Tanga	Pangani	1,188.0	Not gazetted	2006	No data
335	Mwakikonge	Northern	Tanga	Mkinga	372.0	Not gazetted	2012	No data
336	Mwega	Northern	Tanga	Kilindi	521.0	Not gazetted	2010	No data
337	Mzoghoti	Northern	Tanga	Lushoto	154.0	Not gazetted	2007	No data
338	Mzungui	Northern	Tanga	Muheza	57.0		Unknown	No data
339	Ndeme	Northern	Tanga	Lushoto	100.0	Not gazetted	2007	No data
340	Ngala	Northern	Tanga	Lushoto	17.0	Not gazetted	2007	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
341	Ngarani	Northern	Tanga	Muheza	5.0		Unknown	No data
342	Ngereko	Northern	Tanga	Muheza	106.0		Unknown	No data
343	Ngulu	Northern	Tanga	Lushoto	150.0	Not gazetted	2007	No data
344	Nguruweni	Northern	Tanga	Mkinga	127.0	Not gazetted	2012	No data
345	Nimwega	Northern	Tanga	Mkinga	2,017.0	Not gazetted	2014	No data
346	Nivumba	Northern	Tanga	Mkinga	1,620.0	Not gazetted	2014	No data
347	Njudi	Northern	Tanga	Handeni	196.7	Not gazetted	2019	No data
348	Nkonjeni	Northern	Tanga	Handeni	28.1	Not gazetted	2019	No data
349	Npehoni	Northern	Tanga	Handeni	23.0	Not gazetted	2019	No data
350	Ntumbili Hill	Northern	Tanga	Handeni	125.0	Not gazetted	2019	No data
351	Ormkoko	Northern	Arusha	Monduli	1,208.0	Not gazetted	2004	No data
352	Ormoti Lengai	Northern	Kilimanjaro	Same	1,830.8	Not gazetted	2018	No data
353	Panga manyoka	Northern	Tanga	Muheza	105.0		Unknown	No data
354	Pinguli	Northern	Tanga	Kilindi	404.7	Not gazetted	2007	No data
355	Sarian	Northern	Arusha	Ngorongoro	168.3	Not gazetted	2019	No data
356	Sekighoto	Northern	Tanga	Lushoto	60.0	Not gazetted	2007	No data
357	Selewa	Northern	Tanga	Handeni	19.8	Not gazetted	2019	No data
358	Shambangeda	Northern	Tanga	Muheza	18.0		Unknown	No data
359	Shukilai	Northern	Tanga	Lushoto	50.0	Not gazetted	2007	No data
360	Tanda	Northern	Tanga	Lushoto	62.0	Not gazetted	2007	No data
361	Tawale	Northern	Tanga	Handeni	90.0	Not gazetted	2019	No data
362	Ugonamzungu	Northern	Tanga	Handeni	21.6	Not gazetted	2019	No data
363	Ula	Northern	Tanga	Bumbuli	800.0	Not gazetted	2012	No data
364	Vikomba/Kombale	Northern	Tanga	Handeni	144.5	Not gazetted	2019	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
365	Vugiri	Northern	Tanga	Lushoto	400.0	Not gazetted	2007	No data
366	Vumo	Northern	Tanga	Handeni	2.5	Not gazetted	2019	No data
367	Zimeme	Northern	Tanga	Kilindi	502.0	Not gazetted	2010	No data
368	Zumbe Ntale	Northern	Tanga	Handeni	94.4	Not gazetted	2019	No data
369	Bara	Southern highlands	Songwe	Mbozi	1,012.6	Not gazetted	2004	No data
370	Bhasukulu	Southern highlands	Songwe	Mbozi	185.6	Not gazetted	2004	No data
371	Chamwaua	Southern	Songwe	Songwe	1,315.8	Not gazetted	2011	Both production and protection
372	Chamwene	Southern	Rukwa	Sumbawanga	26.0	Not gazetted	Unknown	Both production and protection
373	Chapula	Southern	Rukwa	Sumbawanga	46.0	Not gazetted	2010	Both production
374	Chifua	Southern highlands	Songwe	Mbozi	86.7	Not gazetted	2004	No data
375	Chihuruka	Southern	Ruvuma	Tunduru	21,966.0	Not gazetted	2015	Both production and protection
376	Chilangala	Southern	Mtwara	Newala	59.0	Not gazetted	2010	Both production and protection
377	Chiumbe	Southern	Ruvuma	Tunduru	4,612.0	Not gazetted	2015	Both production and protection
378	Gunza	Southern highlands	Songwe	Mbozi	150.7	Not gazetted	2004	No data
379	Halambo	Southern highlands	Songwe	Mbozi	70.1	Not gazetted	2004	No data
380	Hamwelu	Southern highlands	Songwe	Mbozi	105.0	Not gazetted	2004	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
381	Hanolo	Southern highlands	Songwe	Mbozi	85.4	Not gazetted	2004	No data
382	Hazelu	Southern highlands	Songwe	Mbozi	110.5	Not gazetted	2004	No data
383	Ibembwa	Southern highlands	Songwe	Mbozi	80.8	Not gazetted	2004	No data
384	Idibila	Southern highlands	Songwe	Mbozi	40.7	Not gazetted	2004	No data
385	Idunda	Southern highlands	Songwe	Mbozi	101.7	Not gazetted	2004	No data
386	Ikonongo	Southern highlands	Songwe	Mbozi	40.8	Not gazetted	2004	No data
387	Ilembo	Southern highlands	Songwe	Mbozi	170.3	Not gazetted	2004	No data
388	Ilemi	Southern highlands	Songwe	Mbozi	398.7	Not gazetted	2004	No data
389	Ipapa	Southern	Ruvuma	Tunduru	4,491.0	Not gazetted	2016	Both production and protection
390	Iporoto	Southern highlands	Songwe	Mbozi	260.5	Not gazetted	2004	No data
391	Ipyana	Southern	Ruvuma	Songea	3,073.2	Not gazetted	1992	Both production and protection
392	Isela	Southern highlands	Songwe	Mbozi	190.1	Not gazetted	2004	No data
393	Isingano	Southern highlands	Songwe	Mbozi	754.5	Not gazetted	2004	No data
394	Itaka JKT	Southern highlands	Songwe	Mbozi	190.1	Not gazetted	2004	No data
395	Ivugula	Southern highlands	Songwe	Mbozi	340.0	Not gazetted	2004	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
396	Ivwilisi	Southern highlands	Songwe	Mbozi	170.4	Not gazetted	2004	No data
397	Iwamba	Southern	Songwe	Songwe	1,973.7	Not gazetted	2008	Production
398	Iwuma	Southern highlands	Songwe	Mbozi	204.0	Not gazetted	2004	No data
399	Iyula B	Southern highlands	Songwe	Mbozi	40.8	Not gazetted	2004	No data
400	Izumu	Southern highlands	Songwe	Mbozi	50.6	Not gazetted	2004	No data
401	Kafrantuka	Southern	Rukwa	Sumbawanga	100.0	Not gazetted	Unknown	Both production and protection
402	Kajola	Southern highlands	Mbeya	Ileje	134.0	Not gazetted	Unknown	Protection
403	Kakole	Southern	Rukwa	Sumbawanga	120.0	Not gazetted	Unknown	Both production and protection
404	Kalambo	Southern	Songwe	Songwe	9,306.0	Not gazetted	2008	Both production and protection
405	Kamaro Farm 11	Southern highlands	Songwe	Mbozi	77.8	Not gazetted	2004	No data
406	Kazi	Southern	Rukwa	Sumbawanga	121.0	Not gazetted	Unknown	Both production and protection
407	Kihuga	Southern	Ruvuma	Songea	354.4	Not gazetted	2011	Both production and protection
408	Kijawa A & B	Southern	Lindi	Kilwa	8,502.0	Not gazetted	2010	Both production and protection
409	Kilimampimbi	Southern highlands	Songwe	Mbozi	196.6	Not gazetted	2004	No data
410	Kindumbachajike	Southern	Lindi	Liwale	828.7	Not gazetted	2015	Both production and protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
411	Kinyololo	Southern	Lindi	Liwale	5,654.0	Not gazetted	2017	Both production and protection
412	Kinyope	Southern	Lindi	Lindi	2,662.2	Not gazetted	2014	Protection
413	Kiomanyilo	Southern	Lindi	Liwale	266.0	Not gazetted	2017	Both production and protection
414	Kiwawa	Southern	Lindi	Lindi	8,896.0	Not gazetted	2013	Both production and protection
415	Kiwiga	Southern	Lindi	Liwale	6,488.0	Not gazetted	2017	Both production and protection
416	Kokoliko	Southern	Lindi	Liwale	20,905.0	Not gazetted	2014	Both production and protection
417	Liboya	Southern	Lindi	Liwale	17,903.0	Not gazetted	2014	Both production and protection
418	Lichwachwa	Southern	Lindi	Ruangwa	3,187.0	Not gazetted	2000	Production
419	Lihanga	Southern	Mtwara	Newala	150.0	Not gazetted	2011	Both production and protection
420	Lihiga	Southern	Ruvuma	Songea	4,940.6	Not gazetted	2011	Both production and protection
421	Lihovayai	Southern	Ruvuma	Songea	12,690.1	Not gazetted	1992	Both production and protection
422	Likonde	Southern	Lindi	Kilwa	3,329.0	Not gazetted	2014	Both production and protection
423	Likwaya	Southern	Lindi	Lindi	400.0	Not gazetted	2014	Both production and protection
424	Lochimu	Southern	Mtwara	Newala	89.0	Not gazetted	2010	Both production and protection
425	Lumbabuli	Southern	Lindi	Liwale	11,006.0	Not gazetted	2017	Both production and protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
426	Lumbila	Southern highlands	Songwe	Mbozi	70.0	Not gazetted	2004	No data
427	Lupagalo	Southern	Ruvuma	Songea	5,262.0	Not gazetted	2011	Both production and protection
428	Lyautambo	Southern	Rukwa	Sumbawanga	48.0	Not gazetted	2010	Both production and protection
429	Mabisi Mwazembe	Southern highlands	Mbeya	Ileje	15.7	Not gazetted	Unknown	Protection
430	Machemakele	Southern	Lindi	Liwale	8,691.1	Not gazetted	2017	Both production and protection
431	Magongo	Southern	Lindi	Kilwa	6,656.0	Not gazetted	2017	Both production and protection
432	Malilima	Southern	Ruvuma	Tunduru	6,431.0	Not gazetted	2017	Both production and protection
433	Malowalowa	Southern	Lindi	Liwale	641.0	Not gazetted	2014	Both production and protection
434	Maninga	Southern highlands	Songwe	Mbozi	120.4	Not gazetted	2004	No data
435	Mbalale	Southern	Lindi	Kilwa	3,359.0	Not gazetted	2017	Both production and protection
436	Mbila	Southern	Lindi	Liwale	12,391.0	Not gazetted	2014	Both production and protection
437	Mbiro	Southern	Ruvuma	Songea	243.5	Not gazetted	2011	Protection
438	Mbiwe	Southern	Songwe	Songwe	49,147.0	Not gazetted	1995	Protection
439	Mbumbila A & B	Southern	Lindi	Kilwa	64,551.0	Not gazetted	2016	Both production and protection
440	Mbwambwa	Southern	Ruvuma	Songea	859.4	Not gazetted	2011	Both production and protection
441	Mchichili	Southern	Lindi	Ruangwa	2,130.0	Not gazetted	2000	Production

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
442	Mgalugalu	Southern	Ruvuma	Tunduru	3,713.0	Not gazetted	2017	Both production and protection
443	Mgombezi	Southern highlands	Songwe	Mbozi	73.0	Not gazetted	2004	No data
444	Mikumbi	Southern	Mtwara	Newala	23.0	Not gazetted	2008	Both production and protection
445	Mitumbati	Southern	Ruvuma	Songea	7,697.8	Not gazetted	2011	Both production and protection
446	Miwagiro	Southern	Lindi	Liwale	1,387.0	Not gazetted	2017	Both production and protection
447	Miyuyu	Southern	Mtwara	Newala	80.0	Not gazetted	2008	Both production and protection
448	Mkanga moja	Southern	Lindi	Lindi	854.0	Not gazetted	2014	Both production and protection
449	Mkoma II	Southern	Mtwara	Newala	107.0	Not gazetted	2011	Both production and protection
450	Mkombamosi	Southern	Lindi	Lindi	3,843.3	Not gazetted	2014	Both production and protection
451	Mkongi	Southern	Mtwara	Newala	54.0	Not gazetted	2008	Both production and protection
452	Mkudumba	Southern	Mtwara	Newala	42.0	Not gazetted	2008	Both production and protection
453	Mkumbukwa	Southern highlands	Songwe	Mbozi	360.8	Not gazetted	2004	No data
454	Mkungunda	Southern	Lindi	Liwale	11,643.7	Not gazetted	2017	Both production and protection
455	Mlenje	Southern highlands	Songwe	Mbozi	87.1	Not gazetted	2004	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
456	Mlima Vumba	Southern	Rukwa	Sumbawanga	2,800.0	Not gazetted	Unknown	Both production and protection
457	Mpalamawe	Southern highlands	Songwe	Mbozi	90.7	Not gazetted	2004	No data
458	Mpande	Southern highlands	Songwe	Mbozi	154.2	Not gazetted	2004	No data
459	Mpito	Southern highlands	Songwe	Mbozi	80.2	Not gazetted	2004	No data
460	Mpunguluma	Southern highlands	Songwe	Mbozi	60.6	Not gazetted	2004	No data
461	Msukulu	Southern highlands	Songwe	Mbozi	84.2	Not gazetted	2004	No data
462	Mtakata	Southern highlands	Mbeya	Ileje	132.2	Not gazetted	Unknown	Protection
463	Mtamba	Southern	Lindi	Liwale	1,808.0	Not gazetted	2014	Both production and protection
464	Mtaungana	Southern	Ruvuma	Namtumbo	11,930.0	Not gazetted	2016	Both production and protection
465	Mtunduru	Southern highlands	Songwe	Mbozi	120.8	Not gazetted	2004	No data
466	Muungano	Southern	Lindi	Lindi	8,127.5	Not gazetted	2014	Both production and protection
467	Mvava	Southern highlands	Njombe	Ludewa	795.0	Not gazetted	Unknown	Protection
468	Mwahi	Southern	Ruvuma	Namtumbo	8,859.0	Not gazetted	2016	Both production and protection
469	Mwanona	Southern	Mtwara	Newala	50.0	Not gazetted	2010	Both production and protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
470	Mwembendawile	Southern	Lindi	Kilwa	1,966.0	Not gazetted	2007	Both production and protection
471	Nabete	Southern	Lindi	Liwale	18,992.0	Not gazetted	2014	Both production and protection
472	Nachipasi	Southern highlands	Mbeya	Ileje	183.1	Not gazetted	Unknown	Protection
473	Nahanga	Southern	Lindi	Ruangwa	4,897.0	Not gazetted	2000	Production
474	Nakambonda	Southern highlands	Songwe	Mbozi	75.8	Not gazetted	2004	No data
475	Nakawale	Southern	Lindi	Liwale	6,554.7	Not gazetted	2017	Both production and protection
476	Nakipome	Southern	Lindi	Liwale	8,275.0	Not gazetted	2014	Both production and protection
477	Namai	Southern	Lindi	Liwale	1,028.0	Not gazetted	2014	Both production and protection
478	Namajongoo	Southern	Lindi	Kilwa	916.0	Not gazetted	2006	Both production and protection
479	Namatuli	Southern	Lindi	Kilwa	9,306.0	Not gazetted	2010	Both production and protection
480	Nambawala	Southern	Lindi	Kilwa	929.0	Not gazetted	2018	Both production and protection
481	Nambikwi	Southern	Lindi	Liwale	9,086.4	Not gazetted	2017	Both production and protection
482	Namdimba	Southern	Mtwara	Newala	39.0	Not gazetted	2008	Both production and protection
483	Namfipa	Southern highlands	Songwe	Mbozi	130.6	Not gazetted	2004	No data
484	Namkopo	Southern	Lindi	Liwale	2,698.0	Not gazetted	2014	Both production and protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
485	Nandeje	Southern	Lindi	Ruangwa	5,025.0	Not gazetted	2000	Production
486	Nandeka	Southern	Rukwa	Sumbawanga	320.0	Not gazetted	Unknown	Both production and protection
487	Nangala	Southern	Lindi	Liwale	483.0	Not gazetted	2015	Both production and protection
488	Nanjirinji	Southern	Lindi	Kilwa	597.0	Not gazetted	2016	Both production and protection
489	Nansama	Southern highlands	Songwe	Mbozi	105.3	Not gazetted	2004	No data
490	Nanyala	Southern highlands	Songwe	Mbozi	370.6	Not gazetted	2004	No data
491	Nashiozya	Southern highlands	Songwe	Mbozi	73.0	Not gazetted	2004	No data
492	Navanga	Southern	Mtwara	Newala	96.0	Not gazetted	2010	Both production and protection
493	Ndelule	Southern highlands	Songwe	Mbozi	50.2	Not gazetted	2004	No data
494	Ndungutu	Southern	Lindi	Liwale	5,471.0	Not gazetted	2017	Both production and protection
495	Ng'amba	Southern highlands	Songwe	Mbozi	268.7	Not gazetted	2004	No data
496	Ng'au	Southern	Lindi	Ruangwa	4,050.0	Not gazetted	2000	Production
497	Nhanha	Southern highlands	Songwe	Mbozi	82.7	Not gazetted	2004	No data
498	Njanje	Southern	Lindi	Liwale	1,386.7	Not gazetted	2015	Both production and protection
499	Njeha	Southern highlands	Mbeya	Ileje	109.8	Not gazetted	Unknown	Protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
500	Nkuta	Southern	Songwe	Songwe	635.0	Not gazetted	2009	Both production and protection
501	Nsongole	Southern highlands	Songwe	Mbozi	87.7	Not gazetted	2004	No data
502	Nsuti	Southern highlands	Songwe	Mbozi	60.7	Not gazetted	2004	No data
503	Ntenji	Southern highlands	Songwe	Mbozi	180.0	Not gazetted	2004	No data
504	Nyelya	Southern highlands	Songwe	Mbozi	143.1	Not gazetted	2004	No data
505	Pamiru	Southern	Rukwa	Sumbawanga	73.7	Not gazetted	Unknown	Both production and protection
506	Patamela	Southern	Songwe	Songwe	1,161.9	Not gazetted	2008	Both production and protection
507	Pima	Southern highlands	Songwe	Mbozi	101.6	Not gazetted	2004	No data
508	Ruhoma	Southern	Lindi	Lindi	2,486.7	Not gazetted	2014	Both production and protection
509	Sambandole	Southern highlands	Songwe	Mbozi	23.2	Not gazetted	2004	No data
510	Saparago	Southern highlands	Songwe	Mbozi	61.0	Not gazetted	2004	No data
511	Shidunda	Southern highlands	Songwe	Mbozi	50.4	Not gazetted	2004	No data
512	Shigombola	Southern highlands	Mbeya	Ileje	93.9	Not gazetted	Unknown	Protection
513	Shikula	Southern highlands	Songwe	Mbozi	230.5	Not gazetted	2004	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
514	Shikula 2	Southern highlands	Songwe	Mbozi	150.0	Not gazetted	2004	No data
515	Shilonji	Southern highlands	Songwe	Mbozi	80.4	Not gazetted	2004	No data
516	Songolewa	Southern	Ruvuma	Tunduru	10,217.0	Not gazetted	2016	Both production and protection
517	Tukumbi	Southern highlands	Songwe	Mbozi	179.8	Not gazetted	2004	No data
518	Uchungwa	Southern	Lindi	Kilwa	5,639.0	Not gazetted	2014	Both production and protection
519	Unguungu	Southern	Lindi	Liwale	8,823.0	Not gazetted	2014	Both production and protection
520	Bulenje	Southern highlands	Mbeya	Ileje	31.3		Unknown	Protection
521	Iborero	Southern highlands	Mbeya	Ileje	0.9		Unknown	Protection
522	Ikungulu	Southern highlands	Mbeya	Ileje	33.0		Unknown	Protection
523	Itema	Southern highlands	Mbeya	Ileje	7.4		Unknown	Protection
524	Kabombo	Southern highlands	Mbeya	Ileje	86.3		Unknown	Protection
525	Kalengo	Southern highlands	Mbeya	Ileje	11.9		Unknown	Protection
526	Kalongo	Southern highlands	Mbeya	Ileje	12.0		Unknown	Protection
527	Kanyenye	Southern highlands	Mbeya	Ileje	152.2		Unknown	Protection

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
528	Kasungilo	Southern highlands	Mbeya	Ileje	27.9		Unknown	Protection
529	Lusa	Southern highlands	Mbeya	Ileje	27.4		Unknown	Protection
530	M/Mwazembe	Southern highlands	Mbeya	Ileje	15.7		Unknown	Protection
531	Makusa	Southern highlands	Mbeya	Ileje	5.2		Unknown	Protection
532	Mbutilo	Southern highlands	Mbeya	Ileje	164.6		Unknown	Protection
533	Mwanjalisya	Southern highlands	Mbeya	Ileje	54.4		Unknown	Protection
534	Ndululu	Southern highlands	Mbeya	Ileje	11.5		Unknown	Protection
535	Ndusu	Southern highlands	Mbeya	Ileje	40.2		Unknown	Protection
536	Ng'enge	Southern highlands	Mbeya	Ileje	8.2		Unknown	Protection
537	Njeje	Southern highlands	Mbeya	Ileje	122.1		Unknown	Protection
538	Visenti	Southern highlands	Mbeya	Ileje	44.1		Unknown	Protection
539	Winyagwe	Southern highlands	Mbeya	Ileje	26.8		Unknown	Protection
540	Basanza	Western	Kigoma	Uvinza	344.0	Not gazetted	2010	No data
541	Buhingu	Western	Kigoma	Uvinza	727.1	Not gazetted	2010	No data
542	Herembe	Western	Kigoma	Uvinza	8,750.0	Not gazetted	2010	No data
543	Igalula	Western	Tabora	Tabora	4,000.0	Not gazetted	2004	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
544	Igalula	Western	Kigoma	Uvinza	1,256.8	Not gazetted	2011	No data
545	Imalakaseko	Western	Tabora	Tabora	534.0	Not gazetted	2004	No data
546	Isanga	Western	Katavi	Mpanda	8,843.0	Not gazetted	2010	No data
547	Isenga	Western	Tabora	Tabora	778.0	Not gazetted	2016	No data
548	Kahongoro	Western	Kigoma	Buhigwe	378.0	Not gazetted	2017	No data
549	Kalangasi	Western	Tabora	Tabora	8,500.0	Not gazetted	2004	No data
550	Kalenge	Western	Kigoma	Uvinza	55.4	Not gazetted	2018	No data
551	Kalya	Western	Kigoma	Uvinza	756.5	Not gazetted	2010	No data
552	Kamilala	Western	Katavi	Mpanda	2,363.0	Not gazetted	2016	No data
553	Kamnyage	Western	Katavi	Mpanda	5,906.0	Not gazetted	2017	No data
554	Kamwendwe	Western	Katavi	Mpanda	4,520.9	Not gazetted	2010	No data
555	Kandaga	Western	Kigoma	Uvinza	115.0	Not gazetted	2010	No data
556	Kankosha	Western	Katavi	Mpanda	5,859.0	Not gazetted	2016	No data
557	Kanyomvyi	Western	Kigoma	Buhigwe	456.0	Not gazetted	2017	No data
558	Kapalamsenga	Western	Kigoma	Uvinza	5,487.0	Not gazetted	Unknown	No data
559	Karago	Western	Kigoma	Uvinza	314.0	Not gazetted	2010	No data
560	Kasembe	Western	Katavi	Mpanda	5,465.0	Not gazetted	2018	No data
561	Kashagulu	Western	Kigoma	Uvinza	38,000.0	Not gazetted	2010	No data
562	Kasisi	Western	Kigoma	Uvinza	280.0	Not gazetted	2018	No data
563	Kazuramimba	Western	Kigoma	Uvinza	5,049.0	Not gazetted	2018	No data
564	Lubalisi	Western	Kigoma	Uvinza	12,700.0	Not gazetted	Unknown	No data
565	Luhita	Western	Katavi	Mpanda	509.8	Not gazetted	2016	No data
566	Makola	Western	Kigoma	Uvinza	161.7	Not gazetted	2010	No data
567	Malongwe	Western	Tabora	Tabora	6,072.8	Not gazetted	2004	No data

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted/ declared	Management objective
568	Mbyala	Western	Katavi	Mpanda	2,587.0	Not gazetted	2017	No data
569	Mgambazi	Western	Kigoma	Uvinza	2,098.5	Not gazetted	Unknown	No data
570	Mgambazi - Ntakata	Western	Kigoma	Uvinza	3,098.0	Not gazetted	Unknown	No data
571	Mgoboji Hill	Western	Kigoma	Uvinza	939.1	Not gazetted	2010	No data
572	Mgondogondo	Western	Kigoma	Kibondo	542.0	Not gazetted	2018	No data
573	Mnimba	Western	Katavi	Mpanda	16,933.0	Not gazetted	2016	No data
574	Mpembe	Western	Katavi	Mpanda	11,581.7	Not gazetted	2012	No data
575	Mtego wa noti	Western	Kigoma	Uvinza	919.0	Not gazetted	2018	No data
576	Muramba	Western	Kigoma	Kibondo	184.0	Not gazetted	2015	No data
577	Mwamila	Western	Kigoma	Uvinza	1,839.0	Not gazetted	2010	No data
578	Nkonkwa	Western	Kigoma	Uvinza	435.9	Not gazetted	2010	No data
579	Nkulati	Western	Katavi	Mpanda	1,652.0	Not gazetted	2015	No data
580	Ntakata	Western	Katavi	Mpanda	37,465.0	Not gazetted	2018	No data
581	Nyagwijima	Western	Kigoma	Kibondo	554.8	Not gazetted	2018	No data
582	Nyamabhuye	Western	Kigoma	Kibondo	106.9	Not gazetted	2018	No data
583	Rukoma	Western	Kigoma	Uvinza	3,100.0	Not gazetted	Unknown	No data
584	Sitwe	Western	Katavi	Mpanda	104.4	Not gazetted	2010	No data
585	Sunuka	Western	Kigoma	Uvinza	678.0	Not gazetted	Unknown	No data
586	Tura	Western	Tabora	Tabora	8,818.0	Not gazetted	2004	No data
587	Uvinza	Western	Kigoma	Uvinza	4,400.2	Not gazetted	2018	No data
588	Zibabatembo	Western	Katavi	Mpanda	1,427.0	Not gazetted	2017	No data
589	Zilakula-Nakayigi	Western	Kigoma	Kibondo	54.0	Not gazetted	2013	No data
				Total	***1,356,759.4***			

Appendix 13: List of Nationl parks (NPs)

SN	Name	Region	Size (ha)	GNN	Year gazetted
1	Arusha	Arusha	55,200.0	237/280	1960/2005
2	Burigi-Chato	Kagera, Geita	470,700.0	-	
3	Gombe	Kigoma	7,100.0	234/228	1968/2013
4	Ibanda-Kyerwa	Kagera	29,600.0	-	
5	Katavi	Katavi	447,100.0	01/13	1974/1997
6	Kilimanjaro	Kilimanjaro	166,800.0	56/258	1974/2005
7	Kitulo	Njombe, Mbeya	46,500.0	271	2005
8	Mahale	Kigoma	161,300.0	262	1985
9	Manyara	Arusha, Manyara	64,870.0	505/105	1960/2009
10	Mikumi	Morogoro	324,500.0	465	1964
11	Mkomazi	Kilimanjaro, Tanga	324,500.0	27	2008
12	Ruaha	Iringa, Dodoma, Mbeya	2,030,000.0	464/28	1964/2008
13	Rubondo	Geita, Mwanza, Kagera	45,700.0	21	1977
14	Rumanyika-Karagwe	Kagera	24,700.0	-	
15	Saadani	Pwani, Tanga	110,000.0	281	2005
16	Saanane	Mwanza	218.0	227	2013
17	Serengeti	Mara, Arusha, Simiyu	1,476,300.0	235	1968
18	Tarangire	Arusha, Dodoma, Manyara	260,000.0	160	1970
19	Udzungwa	Morogoro, Iringa	199,000.0	39	1992
		Total	***6,244,088.0***		

Appendix 14: List of GRs

SN	Name	Region	Size (ha)	GNN	Year gazetted
1	Grumeti	Mara	200,000.0	214	1994
2	Ikorongo	Mara	300,000.0	214	1994
3	Kigosi	Shinyanga, Tabora	700,000.0	68	1983
4	Kijereshi	Mwanza	30,000.0	215	1994
5	Kizigo	Singida	400,000.0	275	1974
6	Liparamba	Ruvuma	57,100.0	289	2000
7	Lukwati	Rukwa	314,600.0	459	1997
8	Lukwika-Lumesule	Mtwara	44,400.0	7	1996
9	Lwafi	Rukwa	222,800.0	284	1993
10	Maswa	Shinyanga	220,000.0	482	2002
11	Mkungunero	Dodoma, Manyara	70,000.0	307	1996
12	Moyowosi	Kigoma	600,000.0	1	1981
13	Mpanga-Kipengele	Iringa	157,400.0	483	2002
14	Msanjesi	Mtwara	21,000.0	7	1996
15	Muhesi	Singida	200,000.0	531	1991
16	Pande	Dar Es Salaam	1,200.0	216	1994
17	Piti	Songwe	297,290.0	75	2013
18	Rukwa	Katavi	400,000.0	700	1995
19	Rungwa	Singida, Tabora	900,000.0	275	1974
20	Selous	Pwani, Morogoro, Lindi	5,000,000.0	275	1974
21	Swagaswaga	Dodoma, Singida	87,100.0	72	1997
22	Ugalla	Tabora	500,000.0	281/282	1965
23	Uwanda	Rukwa	500,000.0	275	1974
		Total	***11,222,890.0***		

Appendix 15: GCAs

SN	Name	Region	Size (ha)	GNN	Year gazetted
1	Burunge	Burunge	40,000.0	269	1974
2	Chabula Marsh	Mwanza	10,000.0	269	1974
3	Gombe	Tabora	300,000.0	269	1974
4	Handeni	Tanga	350,000.0	269	1974
5	Igombe Dam	Tabora	10,000.0	269	1974
6	Inchwa – Nkima	Kagera	5,000.0	269	1974
7	Inyonga	Katavi, Tabora	350,000.0	269	1974
8	Kalimawe	Tanga	30,000.0	269	1974
9	Kihurumira Pool	Lindi	10,000.0	269	1974
10	Kilombero	Morogoro	650,000.0	269	1974
11	Kitwai	Manyara	350,000.0	269	1974
12	Kongwa	Dodoma	150,000.0	269	1974
13	Lake Daramatai	Dodoma	2.0	269	1974
14	Lake Kwela	Rukwa	7,000.0	269	1974
15	Lake Manka	Tanga	2,000.0	269	1974
16	Lake Natron	Arusha	300,000.0	269	1974
17	Lihogosa	Iringa	3,000.0	269	1974
18	Loliondo	Arusha	400,000.0	269	1974
19	Lolkisale	Arusha	150,000.0	269	1974
20	Longido	Arusha	150,000.0	269	1974
21	Luganzo	Tabora	250,000.0	269	1974
22	Lunda Mkwambi	Iringa	100,000.0	269	1985
23	Masasi River	Kagera	18,000.0	269	1974
24	Meserani Dam	Arusha	7,500.0	269	1974
25	Mlele	Katavi	300,000.0	269	1974
26	Msima	Katavi	200,000.0	269	1974
27	Mto-wa-Mbu	Arusha	150,000.0	269	1974
28	Muhuwesi	Ruvuma	150,000.0	269	1974
29	Mwadui Diamond	Shinyanga	1,000.0	269	1974
30	Mwambesi	Ruvuma	100,000.0	269	1974
31	Ngeju - Nijro Dam	Arusha	3,000.0	269	1974
32	Rau Forest	Kilimanjaro	10,000.0	269	1974
33	Rungwa River	Katavi	150,000.0	269	1974
34	Ruvu Masai	Manyara	150,000.0	269	1974
35	Ruvu Same	Manyara	100,000.0	269	1974
36	Sanya – Lelatema	Manyara	80,000.0	269	1974
37	Simanjiro	Manyara	200,000.0	269	1974
38	Speke Gulf	Mara	30,000.0	269	1974
39	Ugunda	Tabora	150,000.0	269	1974

SN	Name	Region	Size (ha)	GNN	Year gazetted
40	Umba River	Tanga	30,000.0	269	1974
41	Utengule Swamps	Mbeya	50,000.0	269	1974
42	Wembere	Tabora, Singida	878,400.0	269	1974
		Total	***6,374,902.0***		

Appendix 16: WMAs

SN	Name	Region	Size (ha)	GNN	Year gazetted
1	Burunge (JUHIBU)	Babati	61,700.0	37	2006
2	Chingoli	Tunduru	93,810.0	64	2012
3	Enduimeti	Longido	75,100.0	57	2007
4	Ikona (JUHIWAIKO)	Serengeti, Tarime	24,200.0	57	2007
5	ILUMA	Kilombero, Mahenge	50,900.0	102	2013
6	Ipole (JUHIWAI)	Sikonge	240,600.0	37	2006
7	JUHIWANGUMWA	Rufuji	49,650.0	204	2016
8	JUKUMU (Ukutu)	Morogoro	63,900.0	261	2010
9	Kimbanda	Namtumbo	215,000.0	63	2012
10	Kisungule	Namtumbo	134,500.0	62	2012
11	Magingo	Liwale	451,500.0	103	2009
12	Makame (INDEMA)	Kiteto	537,200.0	385	2009
13	Makao	Meatu	76,890.0	369	2009
14	Mbarang'andu	Namtumbo	247,100.0	37	2006
15	MBOMIPA (Pawaga-Idodi)	Iringa	77,700.0	57	2007
16	Nalika	Tunduru	139,100.0	217	2007
17	Ngarambe/Tapika (MUNGATA)	Rufiji	76,700.0	37	2006
18	Randilen (Lolkisale)	Monduli	31,200.0	21	2013
19	UMEMARUWA	Mbarali, Njombe	60,092.0	185	2015
20	Uyumbu (UWIMA)	Urambo	83,900.0	37	2006
21	WAGA	Mbarali	31,527.0	184	2015
22	Wami Mbiki	Morogoro, Bagamoyo, Mvomero	240,000.0	86	2006
		Total	***3,062,269.0***		

Appendix 17: List of MPs and MRs

SN	Name	Region	Size (ha)	GNN	Year gazetted
1	Mnazi Bay Ruvuma Estuary	Mtwara	65,000.0	-	2000
2	Tanga Coelacanth	Tanga	55,400.0	-	1975
3	Mafia Island	Pwani	82,200.0	-	1995
		Total	***202,600.0***		

Appendix 18: List of NFRs in TFS establishment order not reported by DFMs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Berabera Spring	Central	Dodoma	Kondoa	1,300.0	Not gazetted	
2	Nou Extension	Central	Manyara	Mbulu	850.0	Not gazetted	
3	Songa	Central	Dodoma	Kondoa	34,966.1	231	1954
4	Hundogo	Eastern	Pwani	Kisarawe	1,012.0	162	1950
5	Disalasala	Eastern	Morogoro	Morogoro	6.0	281	1968
6	Kasanga	Eastern	Morogoro	Morogoro	70.0	Sch. 1907	
7	Kilombero River	Eastern	Morogoro	Kilombero	158,365.2	Not gazetted	
8	Luhombero-Luwengu River	Eastern	Morogoro	Ulanga	99,519.9	81	1959
9	Lusunguru	Eastern	Morogoro	Morogoro	2,273.9	154	1966
10	Lyondo	Eastern	Morogoro	Kilombero	27,974.5	557	1998
11	Magadu/ Ruggles	Eastern	Morogoro	Morogoro	20.3	241	1954
12	Mhangala	Eastern	Morogoro	Morogoro	34.8	Sch.	
13	Milindo	Eastern	Morogoro	Gairo	540.6	64/370	1950/ 1963
14	Milindo extension	Eastern	Morogoro	Gairo	414.8	25	1968
15	Milonge	Eastern	Morogoro	Morogoro	17.4	382	1968
16	Mkangala	Eastern	Morogoro	Morogoro	7.0	377	1968
17	Mlalivira	Eastern	Morogoro	Morogoro	12.8	Cap. 132 p 1356	
18	Mpanga	Eastern	Pwani	Rufiji	900.0	Cap. 132 p 1352	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
19	Tongeni River	Eastern	Morogoro	Morogoro	231.5	84	1963
20	Vigoregore	Eastern	Morogoro	Morogoro	920.7	123	1961
21	Kasongeye	Lake	Kagera	Biharamulo	48,781.0	55	1966
22	Balangai East	Northern	Tanga	Lushoto	325.8	234	1962
23	Bassi	Northern	Tanga	Muheza	1,197.5	Cap.132 p. 1947	
24	Bwiko	Northern	Tanga	Lushoto	14.2	Sch.	
25	Garafuno	Northern	Tanga	Pangani	195.0	Sch.	Cap. 132 p. 131
26	Kihuhwi	Nothern	Tanga	Muheza	488.5	105	1941
27	Lushoto	Northern	Tanga	Lushoto	23.0	213	1950
28	Mkuli Exten.	Northern	Tanga	Handeni	2,931.2	576	1963
29	Mleni	Northern	Tanga	Muheza	95.0	Not gazetted	
30	Pangani	Northern	Kilimanjaro	Same	10.9	Vol.VI. P.1333	
31	Shume Landa	Nothern	Tanga	Lushoto	731.0	254	1957
32	Shume Magamba extension	Northern	Tanga	Lushoto	48.9	377	1961
33	Sigi knee	Northen	Tanga	Muheza	779.4	Sch.	
34	Luluzi	Southern highlands	Iringa	Iringa	155.0		1910
35	Magoye	Southern highlands	Iringa	Ludewa	149.7	21	1930
36	Muhaya	Southern highlands	Iringa	Kilolo	25.0	Cap. 132p. 1366	
37	Nguluka	Southern highlands	Iringa	Ludewa	55.0	250	1939
38	Ukwama	Southern highlands	Iringa	Iringa	25,900.8	21	1930
39	Upinda hill	Southern highlands	Iringa	Iringa	305.0	Cap. 132	1950
40	Dundumula	Western	Tabora	Tabora	1,993.9		
41	Isaka New	Western	Shinyanga	Kahama	1,061.9		
42	Itobo Dam	Western	Tabora	Nzega	76.0	215	1961
43	Kasima	Western	Tabora	Tabora	1,799.3	Sch.	
44	Kasisi	Western	Tabora	Tabora	2,020.7	Sch.	
45	Kwakasiga	Western	Tabora	Tabora	2,688.0	Sch.	
46	Makola	Western	Tabora	Tabora	897.2	Sch.	
47	Matintila	Western	Tabora	Tabora	1,387.3	Sch.	

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
48	Mondo	Western	Shinyanga	Shinyanga	1,675.0		
49	Mtakwa	Western	Tabora	Tabora	3,398.7	Sch.	
50	Mwakulu	Western	Tabora	Nzega	11.7	259	1962
51	Mwalugulu	Western	Shinyanga	Kahama	2,434.7		
52	Mwanakaloli	Western	Tabora	Tabora	1,506.5	Sch.	
53	Mwanakatwa	Western	Tabora	Tabora	3,980.2	Sch.	
54	Ngogwa	Western	Tabora	Tabora	3,598.6		
55	Nikonga River	Western	Shinyanga	Kahama	492,100.5	310	19991
56	Simbili	Western	Tabora	Tabora	2,998.8	Sch.	
57	Simbo	Western	Tabora	Tabora	1,744.2	Sch.	
58	Usagali	Western	Tabora	Tabora	1,285.3	Sch.	
59	Ziba	Western	Tabora	Igunga	15.8	214	1961
				Total	***938,323.7***		

Appendix 19: List of NFRs in other sources not reported (absent) by DFMs

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Kalunga	Eastern	Morogoro	Kilombero	761.4	350	1967
2	Kola	Eastern	Pwani	Kisarawe	3,108.0	159	1958
3	Mkundi	Eastern	Morogoro	Morogoro	4.5	Sch.	
4	Ng'aronga	Eastern	Morogoro	Morogoro	34.4	380	1968
5	Pagale	Eastern	Morogoro	Ulanga	12,849.9	81	1959
6	Lukaranga	Lake	Geita	Geita	1,023.5	6	1953
7	Ruamagazi	Lake	Geita	Geita	15,540.0	386	1955
8	Magogoni Msimbazi	Northern	Tanga	Muheza	3,396.2	146	1961
9	Kisangi	Southern	Lindi	Kilwa	310.0	251	1961
10	Liwengula	Southern	Lindi	Lindi	2,983.1	287	1960
11	Nandimba	Southern	Lindi	Lindi	1,250.5	554	1958
12	Nangaule	Southern	Lindi	Lindi	650.6	not gazetted	not gazetted
13	Steinbruch	Northern	Tanga	Pangani	353.3	155	1956
14	Bulongwa madehasi	Southern highlands	Njombe	Makete	185.3	277	1953
15	Idunda	Southern highlands	Njombe	Makete	39.0	441	1958
16	Igoma	Southern highlands	Mbeya	Mbeya	108.0	2	1959
17	Iringa	Southern highlands	Iringa	Iringa	223.0	109	1953
18	Iringa scarpe	Southern highlands	Iringa	Iringa	26.3	215	1964
19	Karola	Southern highlands	Mbeya	Rungwe	159,937.0	167	1960
20	Kilimatembo	Southern highlands	Iringa	Iringa		not gazetted	not gazetted
21	Lufunu/Utengo	Southern highlands	Iringa	Iringa		not gazetted	not gazetted
22	Lumakarya	Southern highlands	Njombe	Njombe	99.6	109	1964

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
23	Maganga Matitu	Southern highlands	Njombe	Ludewa	30.0	125	1964
24	Magoye	Southern highlands	Njombe	Ludewa	149.7	21	1930
25	Mapogoro	Southern highlands	Iringa	Iringa	1,062.0	125	1961
26	Mepanga	Southern highlands	Iringa	Iringa	11.3	441	1958
27	Muvaha	Southern highlands	Iringa	Iringa	25.0	Cap. 132. p.1366	
28	Nduli	Southern highlands	Iringa	Iringa	119.7	232	1961
29	Nyumbanito	Southern highlands	Iringa	Iringa	6,216.0	247	1957
30	Ukwama	Southern highlands	Iringa	Iringa	25,900.3	156	1957
31	Ulagambi	Southern highlands	Iringa	Iringa	2,057.0	204	1957
32	Upinda hill	Southern highlands	Iringa	Iringa	305.0	Cap.132	1930
33	Walonga	Southern highlands	Iringa	Iringa	139.6	312	1958
				Total	***238,899.2***		

Appendix 20: List of NFR taken and managed by other authorities

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted	Description	GNN of other Authority
1	Mkungunero	Central	Dodoma	Kondoa	74,395.0	Not gazetted		Currently Mkungunero GR under TAWA	307 of 1996
2	Rungwa	Central	Singida	Manyoni	785,840.0	217	1961	Currently Rungwa GR under TAWA	275 of 1974
3	Swangaswanga	Central	Dodoma	Kondoa	87,100.0	Not gazetted		Currently Swagaswaga GR under TAWA	72 of 1997
4	Mwanihana	Eastern	Morogoro	Kilombero	18,230.0	73	1958	Currently part of Udzungwa NP under TANAPA	
5	Ngindo	Eastern	Morogoro	Ulanga	185,241.2	81	1959	Currently part of Selous GR under TAWA	
6	Nyakabindi	Lake	Simiyu	Bariadi	45.0	Nill	Nill	Currently under by LGA	
7	Gelai	Northern	Arusha	Longido	3,190.0	354	1988	Currently under by LGA	
8	Kilimanjaro	Northern	Kilimanjaro	Hai	47,028.6	Not gazetted		Currently Kilimanjaro NP under TANAPA	56 of 1974; and 258 and 2005
9	Kilimanjaro	Northern	Kilimanjaro	Moshi	20,916.0	59	1973	Currently Kilimanjaro NP under TANAPA	57 of 1974; and 258 and 2005
10	Kilimanjaro	Northern	Kilimanjaro	Rombo	39,883.4	Not gazetted		Currently Kilimanjaro NP under TANAPA	58 of 1974; and 258 and 2005

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted	Description	GNN of other Authority
11	Marang	Northern	Arusha	Karatu	35,399.0	89	1938	Currently Manyara NP under TAWA	505 of 1960 and105, of 2009
12	Meru	Northern	Arusha	Arumeru	26,443.4	84	1967	Currently Arusha NP under TANAPA	237 of 1960, and 280 of 2005
13	Northern Highlands	Northern	Arusha	Ngorongoro	89,152.0	Cap.132 p.1346		NCA	
14	Lungonya	Southern	Lindi	Liwale	208,380.0	233	1957	Currently part of Selous GR under TAWA	
15	Kipengele Range	Southern highlands	Njombe	Makete	34,146.7	346	1958	Currently part of Kipanga Kipengele GR under TAWA	
16	Lukwati	Southern highlands	Songwe	Chunya	199,430.2	343	1958	Currently part of Lukwati GR under TAWA	
17	Ndumbi Valley	Southern highlands	Njombe	Makete	2,620.0	18	1956	Currently part of Kitulo GR under TAWA	
18	Manongho	Western	Shinyanga	Shinyanga	409.2	377	64	Currently under by LGA	
19	Mwangilye Hill	Western	Shinyanga	Shinyanga	39.4	142	104	Currently under by LGA	
20	Mwatunge Hill	Western	Shinyanga	Shinyanga	38.4	275	273	Currently under by LGA	
21	Puge South	Western	Tabora	Nzega	2,590.0	249	60	Currently under by LGA	
				Total	***1,860,517.5***				

Appendix 21: List of NFRs managed by other authorities

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted	Authority
1	Iwawa forest	Southern Highlands	Njombe	Makete	101.0	269	2010	Makete LGA
2	Lolkisale	Northern	Arusha	Monduli	960.0	Not gazetted		Lolkisale Village
3	Loliondo II	Northern	Arusha	Ngorongoro	7,197.0	307	1958	Enguserosambu, Naan, Ng'arwa and Olkiu villages
				Total	***8,258.0***			

Appendix 22: List of documented LAFRs not reported by District Forest Officers

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
1	Aicho	Central	Manyara	Mbulu	125.0	Not gazetted	
2	Bokoto	Central	Dodoma	Kondoa	2,584.0	Not gazetted	
3	Ibungule	Central	Dodoma	Dodoma/ Chamwino	356.0	Not gazetted	
4	Kome	Central	Dodoma	Kondoa	4,047.0	Sch.	
5	Manyoni Eucalyptus	Central	Singida	Manyoni	72.0	Not gazetted	
6	Sidai	Central	Manyara	Mbulu	114.0	Not gazetted	
7	Vikonje	Central	Dodoma	Dodoma	198.0	Not gazetted	
8	Bwiregi	Lake	Mara	Tarime	87.4	142	1958
9	Ilongafipa	Lake	Mwanza	Kwimba	1,337.3	65	1958
10	Malenga	Lake	Mwanza	Kwimba	226.4	68	1958
11	Mamani	Lake	Mwanza	Kwimba	757.6	70	1958
12	Mugaberi	Lake	Mara	Tarime	6.1	142	1958
13	Mwamapalala Farm	Lake	Simiyu	Bariadi	46.6	105	1956
14	Mwamapuli	Lake	Simiyu	Bariadi	56.7	112	1956
15	Mwanzoge-Sengi	Lake	Simiyu	Bariadi	64.8	103	1956
16	Nshinde Hill	Lake	Geita	Geita	150.5	109	1956
17	Nyabasi	Lake	Mara	Tarime	17.0	142	1958
18	Sisu	Lake	Mwanza	Kwimba	926.7	71	1958
19	Tarime	Lake	Mara	Tarime	41.7	305	1958
20	Hebangwe	Northern	Tanga	Lushoto	33.6	Not gazetted	
21	Bondo	Northern	Tanga	Handeni	328.0	262	1988
22	Kikongoloi	Northern	Tanga	Lushoto	245.2	102	1969

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
23	Kwembogo	Northern	Tanga	Lushoto	3.2	329	1957
24	Maasi	Northern	Arusha	Arumeru	51.0	5	1958
25	Makumba	Northern	Tanga	Korogwe	668.5	Not gazetted	
26	Mpalalu	Northern	Tanga	Korogwe	8.5	410	1958
27	Mpanga	Northern	Tanga	Muheza	24.0	542	1998
28	Mzashai	Northern	Tanga	Lushoto	49.0	Not gazetted	
29	Ngarusambu	Northern	Arusha	Arumeru	6.0	4	1958
30	Nilo	Northern	Tanga	Muheza	1,698.0	547	1998
31	Sakila	Northern	Arusha	Arumeru	30.0	7	1958
32	Zinge	Northern	Tanga	Lushoto	113.2	299	1958
33	Kambona	Southern	Mtwara	Masasi	29.9	143	1958
34	Mahuta	Southern	Mtwara	Newala	1,489.3	379	1961
35	Idamba	Southern highlands	Njombe	Ludewa	53.4	441	1958
36	Igeli	Southern highlands	Njombe	Njombe	84.2	6	1962
37	Igoma Logala	Southern highlands	Njombe	Ludewa	108.9	Not gazetted	Not gazetted
38	Ikonde	Southern highlands	Njombe	Ludewa	297.0	Not gazetted	Not gazetted
39	Ilonganjaula	Southern highlands	Njombe	Njombe	47.8	Not gazetted	Not gazetted
40	Ilugu	Southern highlands	Mbeya	Mbeya	1,849.4	145	1958
41	Injilikwa	Southern highlands	Njombe	Njombe	838.5	441	1958

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
42	Ipongoro	Southern highlands	Njombe	Njombe	54.0	Not gazetted	Not gazetted
43	Isililo	Southern highlands	Njombe	Ludewa	59.0	Not gazetted	Not gazetted
44	Kyejo	Southern highlands	Mbeya	Rungwe	692,8	247	1956
45	Mafifi	Southern highlands	Njombe	Njombe	45.3	441	1958
46	Maheney	Southern highlands	Njombe	Ludewa	47.0	441	1958
47	Mayefuya	Southern highlands	Njombe	Ludewa	63.1	Not gazetted	not gazetted
48	Mfulikilo	Southern highlands	Njombe	Njombe	31.2	441	1958
49	Mpara	Southern highlands	Mbeya	Mbeya	1,048.1	144	1958
50	Muipa	Southern highlands	Songwe	Chunta	75,110.1	344	1958
51	Ndugumia	Southern highlands	Mbeya	Mbeya	130.0	382	1957
52	Ndukunduku	Southern highlands	Njombe	Njombe	3,265.8	342	1958
53	Ndumbi Valley	Southern highlands	Njombe	Makete	2,738.5	18	1956
54	Ngalijembe	Southern highlands	Mbeya	Mbeya	259.0	245	1956
55	Silupali	Southern highlands	Njombe	Njombe	796.0	Not gazetted	Not gazetted
56	Bangwe	Western	Kigoma	Kigoma	77.4	86	1959

SN	Forest name	Zone	Region	District	Size (ha)	GNN	Year gazetted
57	Buyungu	Western	Kigoma	Kibondo	113,183.1	442	1958
58	Iguna	Western	Tabora	Tabora	1,292.2	Sch.	Nill
59	Igunga	Western	Tabora	Igunga	9,842.0	442	1958
60	Kabungu	Western	Katavi	Mpanda	343.6	164	1951
61	Kahama Dam	Western	Shinyanga	Kahama	58.7	74	1963
62	Lwiche	Western	Kigoma	Kigoma	5,439.0	510	1958
63	Mlela	Western	Kigoma	Kigoma	2,816.6	509	1958
64	Mwanga	Western	Kigoma	Kigoma	292.6	510	1958
65	Ngogwa Busangi	Western	Shinyanga	Kahama	28,438.2	553	1958
66	Old Shinyanga	Western	Shinyanga	Shinyanga	1,486.0	68	1958
67	Uduka	Western	Tabora	Nzega	15.4	284	1961
68	Ukamba	Western	Shinyanga	Kahama	484.2	553	1958
69	Ukune	Western	Shinyanga	Kahama	11,914.4	510	1958
70	Uyovu	Western	Shinyanga	Kahama	16,899.6	442	1958
				Total	***295,501.5***		

Appendix 23: List of NFRs in good condition

SN	Forest name	Category	Zone	Region	District
1	Aghondi	BR	Central	Singida	Manyoni
2	Kang'ata	BR	Northern	Tanga	Handeni
3	Kilinga	BR	Central	Singida	Manyoni
4	Kwamba	BR	Northern	Tanga	Handeni
5	Kwenyunga Magiri	BR	Northern	Tanga	Handeni
6	Lebba Jumbe	BR	Central	Dodoma	Chemba
7	Maganze mzaree	BR	Central	Dodoma	Chemba
8	Mialo kwamtoro	BR	Central	Dodoma	Chemba
9	Sambu	BR	Northern	Tanga	Handeni
10	Songolo	BR	Central	Dodoma	Chemba
11	Ilala-mangrove	Mangrove FR	Eastern	Dar es Salaam	Ilala
12	Lindi-mangrove	Mangrove FR	Southern	Lindi	Lindi
13	Mafia-mangrove	Mangrove FR	Eastern	Pwani	Mafia
14	Balangai	Natural FR	Northern	Tanga	Lushoto (Bumbuli)
15	Bamba Ridge	Natural FR	Northern	Tanga	Mkinga
16	Bombo East I	Natural FR	Northern	Tanga	Mkinga
17	Burko	Natural FR	Northern	Arusha	Monduli
18	Chemi chemi	Natural FR	Central	Dodoma	Kondoa
19	Chumwa range	Natural FR	Southern Highlands	Mbeya	Mbeya
20	Derema	Natural FR	Northern	Tanga	Muheza
21	Derema	Natural FR	Northern	Tanga	Kilindi
22	Dunduma	Natural FR	Eastern	Morogoro	Mvomero
23	Essimingor	Natural FR	Northern	Arusha	Monduli
24	Hasama Hill	Natural FR	Central	Manyara	Mbulu
25	Ibungu (Mboli)	Natural FR	Southern Highlands	Mbeya	Ileje and Rungwe
26	Idewa	Natural FR	Southern Highlands	Iringa	Mufindi
27	Ikoho/Ihoho	Natural FR	Southern Highlands	Mbeya	Mbeya
28	Ikwaba	Natural FR	Eastern	Morogoro	Gairo

SN	Forest name	Category	Zone	Region	District
29	Inyonga/ Nyonga	Natural FR	Western	Tabora	Sikonge
30	Irenga	Natural FR	Southern Highlands	Mbeya	Mbeya
31	Isaka	Natural FR	Southern Highlands	Mbeya	Rungwe
32	Isongele	Natural FR	Southern Highlands	Mbeya	Rungwe
33	Itoni	Natural FR	Southern Highlands	Njombe	Njombe
34	Ivuna North	Natural FR	Southern Highlands	Songwe	Momba
35	Ivuna South	Natural FR	Southern Highlands	Songwe	Momba
36	Iwonde	Natural FR	Eastern	Morogoro	Kilombero
37	Kambai	Natural FR	Northern	Tanga	Muheza
38	Kamwenda	Natural FR	Northern	Kilimanjaro	Same
39	Kandale/ kantale	Natural FR	Lake	Kagera	Missenyi
40	Kanga	Natural FR	Eastern	Morogoro	Mvomero
41	Kihiriri	Natural FR	Eastern	Morogoro	Kilosa
42	Kikoka	Natural FR	Eastern	Pwani	Bagamoyo (Bagamoyo)
43	Kilindi	Natural FR	Northern	Tanga	Kilindi
44	Kimboza	Natural FR	Eastern	Morogoro	Morogoro
45	Kindoroko	Natural FR	Northern	Kilimanjaro	Mwanga
46	Kinyerezi	Natural FR	Eastern	Dar es Salaam	Ilala
47	Kisima Gonja	Natural FR	Northern	Tanga	Lushoto (Bumbuli)
48	Kitivo South	Natural FR	Northern	Tanga	Lushoto
49	Kitweli	Natural FR	Southern Highlands	Mbeya	Rungwe
50	Kiverenge	Natural FR	Northern	Kilimanjaro	Mwanga
51	Koko Hill	Natural FR	Northern	Kilimanjaro	Same
52	Kwama Rukanga	Natural FR	Northern	Tanga	Handeni
53	Kwamarimba	Natural FR	Northern	Tanga	Muheza
54	Kwamgumi	Natural FR	Northern	Tanga	Mkinga
55	Lake Duluti	Natural FR	Northern	Arusha	Arumeru
56	Ligamba	Natural FR	Eastern	Morogoro	Malinyi
57	Litipo	Natural FR	Southern	Lindi	Lindi

SN	Forest name	Category	Zone	Region	District
58	Lubaga	Natural FR	Western	Shinyanga	Shinyanga
59	Lufuna	Natural FR	Southern Highlands	Iringa	Mufindi
60	Lwekea	Natural FR	Southern	Ruvuma	Nyasa
61	Madenge	Natural FR	Southern Highlands	Njombe	Ludewa
62	Mafwomero	Natural FR	Central	Dodoma	Mpwapwa
63	Magambazi	Natural FR	Northern	Tanga	Handeni
64	Maguli	Natural FR	Southern Highlands	Njombe	Makete
65	Mahenge Scarp	Natural FR	Eastern	Morogoro	Ulanga
66	Mahezangulu	Natural FR	Northern	Tanga	Lushoto
67	Mamboto	Natural FR	Eastern	Morogoro	Kilosa
68	Mamboya	Natural FR	Eastern	Morogoro	Kilosa
69	Mamiwa Kisara North	Natural FR	Eastern	Morogoro	Gairo
70	Mamiwa Kisara South	Natural FR	Eastern	Morogoro	Kilosa
71	Manga	Natural FR	Northern	Tanga	Muheza
72	Mang'aliza (Mangalisa)	Natural FR	Central	Dodoma	Mpwapwa
73	Masagati	Natural FR	Eastern	Morogoro	Kilombero
74	Matapwa	Natural FR	Southern	Lindi	Lindi
75	Mbwegere	Natural FR	Northern	Tanga	Kilindi
76	Mchungu	Natural FR	Eastern	Pwani	Kibiti
77	Mdando	Natural FR	Southern Highlands	Njombe	Ludewa
78	Mgambo	Natural FR	Northern	Tanga	Mkinga
79	Mhulu	Natural FR	Eastern	Morogoro	Ulanga
80	Minja	Natural FR	Northern	Kilimanjaro	Mwanga
81	Mkonga	Natural FR	Northern	Kilimanjaro	Same
82	Mkuri	Natural FR	Northern	Tanga	Kilindi
83	Mlali	Natural FR	Central	Dodoma	Kongwa
84	Mlimasimu	Natural FR	Central	Manyara	Kiteto
85	Mlinga	Natural FR	Northern	Tanga	Muheza
86	Mlola	Natural FR	Eastern	Pwani	Mafia
87	Mlungui	Natural FR	Northern	Tanga	Mkinga
88	Mount Monduli	Natural FR	Northern	Arusha	Monduli
89	Mramba	Natural FR	Northern	Kilimanjaro	Mwanga

SN	Forest name	Category	Zone	Region	District
90	Msanga-Mwelu	Natural FR	Southern Highlands	Mbeya	Mbeya
91	Mselezi	Natural FR	Eastern	Morogoro	Ulanga
92	Mshora	Natural FR	Southern Highlands	Njombe	Ludewa
93	Mtai	Natural FR	Northern	Tanga	Mkinga
94	Mtande	Natural FR	Southern Highlands	Songwe	Chunya
95	Mtunguru	Natural FR	Northern	Tanga	Handeni
96	Mulele Hill	Natural FR	Western	Katavi	Mpanda, Mlele and Nsimbo
97	Mwalla	Natural FR	Northern	Kilimanjaro	Same
98	Mwalye	Natural FR	Western	Kigoma	Kibondo
99	Myoe	Natural FR	Eastern	Morogoro	Ulanga
100	Ndasha Hill	Natural FR	Northern	Tanga	Lushoto
101	Ndelemai	Natural FR	Northern	Tanga	Lushoto
102	Nguru North	Natural FR	Northern	Tanga	Kilindi
103	Nguruka	Natural FR	Southern Highlands	Njombe	Njombe
104	Njoge (Njogi)	Natural FR	Central	Manyara	Kiteto
105	Nou	Natural FR	Central	Manyara	Babati
106	Nyanganje	Natural FR	Eastern	Morogoro	Kilombero
107	Nyantakara	Natural FR	Lake	Kagera	Biharamulo
108	Pala Mountain	Natural FR	Eastern	Morogoro	Kilosa
109	Pugu	Natural FR	Eastern	Pwani	Kisarawe
110	Pumula	Natural FR	Northern	Tanga	Kilindi
111	Rau	Natural FR	Northern	Kilimanjaro	Moshi
112	Ruvu	Natural FR	Eastern	Morogoro	Morogoro
113	Sakaranyumo	Natural FR	Southern Highlands	Njombe	Ludewa
114	Salanga	Natural FR	Central	Dodoma	Kondoa
115	Sali	Natural FR	Eastern	Morogoro	Ulanga
116	Segoma	Natural FR	Northern	Tanga	Mkinga
117	Semdoe	Natural FR	Northern	Tanga	Muheza
118	Shagayo	Natural FR	Northern	Tanga	Lushoto
119	Shambalai	Natural FR	Northern	Tanga	Lushoto
120	Simbo	Natural FR	Western	Tabora	Uyui
121	Swangala	Natural FR	Western	Tabora	Sikonge
122	Talagwe/ Italagwe	Natural FR	Eastern	Morogoro	Gairo

SN	Forest name	Category	Zone	Region	District
123	Tongwe	Natural FR	Northern	Tanga	Muheza
124	Ufiome	Natural FR	Central	Manyara	Babati
125	Ukwiva	Natural FR	Eastern	Morogoro	Kilosa
126	Umalima	Natural FR	Southern Highlands	Mbeya	Mbeya
127	Undendeule North East	Natural FR	Southern	Ruvuma	Namtombo
128	Uponera	Natural FR	Eastern	Morogoro	Kilosa
129	Usafya North	Natural FR	Southern Highlands	Mbeya	Mbeya
130	Uvinza	Natural FR	Western	Kigoma	Uvinza
131	Vigoza	Natural FR	Eastern	Morogoro	Mvomero
132	Vugiri	Natural FR	Northern	Tanga	Korogwe
133	Amani	Nature FR	Northern	Tanga	Muheza
134	Chome	Nature FR	Northern	Kilimanjaro	Same
135	Itulu Hill	Nature FR	Western	Tabora	Sikonge
136	Kalambo	Nature FR	Southern Highlands	Rukwa	Kalambo
137	Kilombero	Nature FR	Southern highlands	Iringa	Kilolo
138	Magamba	Nature FR	Northern	Tanga	Lushoto
139	Magombera	Nature FR	Eastern	Morogoro	Kilombero
140	Minziro	Nature FR	Lake	Kagera	Missenyi
141	Mkingu	Nature FR	Eastern	Morogoro	Mvomero
142	Mount Hanang	Nature FR	Central	Manyara	Hanang
143	Nilo	Nature FR	Northern	Tanga	Korogwe and Muheza and Mkinga
144	Rondo	Nature FR	Southern	Lindi	Lindi
145	Rungwe	Nature FR	Southern Highlands	Mbeya	Rungwe
146	Uluruguru	Nature FR	Eastern	Morogoro	Morogoro
147	Uzungwa scarp	Nature FR	Southern Highlands	Iringa	Mufindi
148	Buhigwe (Munzeze)	Plantation FR	Western	Kigoma	Buhigwe
149	Buhindi	Plantation FR	Lake	Mwanza	Sengerema
150	Iyondo Mswima	Plantation FR	Southern Highlands	Mbeya	Ileje

SN	Forest name	Category	Zone	Region	District
151	Kawetire/North Usafwa	Plantation FR	Southern Highlands	Mbeya	Mbeya
152	Kiwira	Plantation FR	Southern Highlands	Mbeya	Rungwe
153	Korogwe fuelwood	Plantation FR	Northern	Tanga	Korogwe
154	Longuza	Plantation FR	Northern	Tanga	Muheza
155	Lupembe	Plantation FR	Southern Highlands	Njombe	Njombe
156	Matembwe	Plantation FR	Southern Highlands	Njombe	Njombe
157	Mbizi	Plantation FR	Southern Highlands	Rukwa	Sumbawanga
158	Meru USA	Plantation FR	Northern	Arusha	Meru and Arumeru
159	Morogoro fuelwood	Plantation FR	Eastern	Morogoro	Morogoro
160	Mpepo	Plantation FR	Southern	Ruvuma	Nyasa
161	Mtibwa/Pagale Teak	Plantation FR	Eastern	Morogoro	Mvomero
162	North Kilimanjaro	Plantation FR	Northern	Kilimanjaro	Rombo
163	Rondo	Plantation FR	Southern	Lindi	Lindi
164	Rubare/Nindo	Plantation FR	Lake	Kagera	Bukoba
165	Rubya	Plantation FR	Lake	Mwanza	Ukerewe
166	Ruvu North fuelwood	Plantation FR	Eastern	Pwani	Kibaha
167	Sao Hill	Plantation FR	Southern Highlands	Iringa	Mufindi
168	Shume	Plantation FR	Northern	Tanga	Lushoto
169	Ukaguru	Plantation FR	Eastern	Morogoro	Gairo
170	West Kilimanjaro	Plantation FR	Northern	Kilimanjaro	Siha
171	Wino	Plantation FR	Southern Highlands	Rukwa	Sumbawanga

Appendix 24: List of degraded NFRs

SN	Forest name	Category	Zone	Region	District
1	Kipembawe	BR	Southern Highlands	Songwe	Chunya
2	Kwedikwazu manzuki	BR	Northern	Tanga	Handeni
3	Mheza	BR	Northern	Tanga	Kilindi
4	Bagamoyo-mangrove	Mangrove FR	Eastern	Pwani	Bagamoyo (Bagamoyo)
5	Kilwa-mangrove	Mangrove FR	Southern	Lindi	Kilwa
6	Kinondoni and Ubungo-mangrove	Mangrove FR	Eastern	Dar es Salaam	Kinondoni and Ubungo
7	Mkinga-mangrove	Mangrove FR	Northern	Tanga	Mkinga
8	Mkuranga-mangrove	Mangrove FR	Eastern	Pwani	Mkuranga
9	Muheza-mangrove	Mangrove FR	Northern	Tanga	Tanga
10	Pangani-mangrove	Mangrove FR	Northern	Tanga	Pangani
11	Rufiji delta-mangrove	Mangrove FR	Eastern	Pwani	Kibiti
12	Tanga-mangrove	Mangrove FR	Northern	Tanga	Tanga
13	Temeke and Kigamboni-angrove	Mangrove FR	Eastern	Dar es Salaam	Temeke and Kigamboni
14	Amani Makolo	Natural FR	Southern	Ruvuma	Mbinga
15	Baga - I (Mzinga)	Natural FR	Northern	Tanga	Lushoto (Bumbuli)
16	Baga - II (Mzinga)	Natural FR	Northern	Tanga	Lushoto (Bumbuli)
17	Bereku	Natural FR	Central	Manyara	Babati
18	Bumba Mavumbi	Natural FR	Northern	Tanga	Lushoto (Bumbuli)
19	Chaburuma	Natural FR	Southern	Ruvuma	Songea
20	Chala River	Natural FR	Southern Highlands	Rukwa	Nkasi
21	Chambogo	Natural FR	Northern	Kilimanjaro	Same
22	Chenene West	Natural FR	Central	Dodoma	Bahi
23	Chimala Scarp	Natural FR	Southern Highlands	Mbeya	Mbalali
24	Chuvwi	Natural FR	Southern Highlands	Mbeya	Mbeya
25	Dindili	Natural FR	Eastern	Morogoro	Morogoro
26	Handeni Hill	Natural FR	Northern	Tanga	Handeni

SN	Forest name	Category	Zone	Region	District
27	Haraa	Natural FR	Central	Manyara	Babati
28	Iditima	Natural FR	Southern Highlands	Njombe	Njombe
29	Igawisenga	Natural FR	Southern	Ruvuma	Songea
30	Igwata	Natural FR	Lake	Mwanza	Kwimba
31	Ijogo	Natural FR	Central	Dodoma	Kongwa
32	Ilunde	Natural FR	Western	Kigoma	Uvinza
33	Image	Natural FR	Southern Highlands	Iringa	Kilolo
34	Itengu	Natural FR	Southern Highlands	Songwe	Chunya
35	Jungu	Natural FR	Northern	Tanga	Kilindi
36	Kabungu	Natural FR	Western	Katavi	Tanganyika
37	Kalangali	Natural FR	Southern Highlands	Songwe	Chunya
38	Kamwalla I	Natural FR	Northern	Kilimanjaro	Mwanga
39	Kamwalla II	Natural FR	Northern	Kilimanjaro	Mwanga
40	Kankuuma	Natural FR	Lake	Kagera	Missenyi
41	Katundu	Natural FR	Eastern	Pwani	Rufiji
42	Kawemba	Natural FR	Southern Highlands	Iringa	Kilolo
43	Kazimzumbwi	Natural FR	Eastern	Pwani	Kisarawe
44	Kigonsera	Natural FR	Southern	Ruvuma	Mbinga
45	Kikale	Natural FR	Eastern	Pwani	Kibiti
46	Kikongoro	Natural FR	Lake	Kagera	Missenyi
47	Kikuru	Natural FR	Lake	Kagera	Missenyi
48	Kilanzi Kitungulu	Natural FR	Southern Highlands	Iringa	Kilolo
49	Kipembawe	Natural FR	Southern Highlands	Songwe	Chunya
50	Kipo	Natural FR	Eastern	Pwani	Rufiji
51	Kiriguru	Natural FR	Northern	Tanga	Kilindi
52	Kising'a lugalo	Natural FR	Southern Highlands	Iringa	Kilolo
53	Kitapilimwa	Natural FR	Southern Highlands	Iringa	Iringa
54	Kitemele	Natural FR	Southern Highlands	Iringa	Kilolo
55	Kitulanghalo	Natural FR	Eastern	Morogoro	Morogoro
56	Kiwengoma	Natural FR	Eastern	Pwani	Rufiji
57	Kome	Natural FR	Lake	Mwanza	Sengerema

SN	Forest name	Category	Zone	Region	District
58	Kwani	Natural FR	Northern	Tanga	Muheza
59	Kwasumba	Natural FR	Northern	Tanga	Handeni
60	Kwediboma	Natural FR	Northern	Tanga	Kilindi
61	Kyamawa	Natural FR	Lake	Kagera	Bukoba
62	Kyanyari	Natural FR	Lake	Mara	Butiama
63	Kyau	Natural FR	Lake	Kagera	Bukoba
64	Lihanje	Natural FR	Southern	Ruvuma	Songea
65	Lionja	Natural FR	Southern	Mtwara	Nachingwea
66	Lipembe/Uyole	Natural FR	Southern	Ruvuma	Mbinga
67	Litenga	Natural FR	Southern	Ruvuma	Songea
68	Liwili/kiteza	Natural FR	Southern	Ruvuma	Mbinga
69	Logia	Natural FR	Southern Highlands	Songwe	Chunya
70	Machinjioni	Natural FR	Southern	Ruvuma	Songea
71	Mafi Hill	Natural FR	Northern	Tanga	Korogwe
72	Maisome	Natural FR	Lake	Mwanza	Sengerema
73	Makombe	Natural FR	Southern Highlands	Iringa	Iringa
74	Mapala	Natural FR	Southern Highlands	Njombe	Njombe
75	Masangania	Natural FR	Eastern	Pwani	Mkuranga
76	Masasi Hill	Natural FR	Southern	Mtwara	Masasi
77	Matogoro West	Natural FR	Southern	Ruvuma	Songea
78	Mbangala	Natural FR	Southern	Mtwara	Masasi and Nanyumbu
79	Mbiwe	Natural FR	Southern Highlands	Songwe	Songwe and Chunya
80	Mchonda	Natural FR	Southern	Mtwara	Nanyumbu
81	Migombani	Natural FR	Northern	Tanga	Lushoto (Bumbuli)
82	Mindu	Natural FR	Eastern	Morogoro	Morogoro
83	Mitarule	Natural FR	Southern	Lindi	Kilwa
84	Mkelezange (Marenda)	Natural FR	Eastern	Pwani	Mkuranga
85	Mkongo	Natural FR	Northern	Tanga	Kilindi
86	Mkoro	Natural FR	Northern	Tanga	Kilindi
87	Mkulazi	Natural FR	Eastern	Morogoro	Morogoro
88	Mkungwe	Natural FR	Eastern	Morogoro	Morogoro
89	Mkusu	Natural FR	Northern	Tanga	Lushoto
90	Mohoro River	Natural FR	Eastern	Pwani	Rufiji

SN	Forest name	Category	Zone	Region	District
91	Mpanda Line	Natural FR	Western	Tabora	Kaliua
92	Mpanda North East	Natural FR	Western	Katavi	Mpanda, Mlele and Nsimbo
93	Msaginia	Natural FR	Western	Katavi	Mpanda and Nsimbo
94	Msakureile-Simbo	Natural FR	Eastern	Pwani	Bagamoyo (Chalinze)
95	Msingeho Hill	Natural FR	Northern	Tanga	Kilindi
96	Msumbugwe	Natural FR	Northern	Tanga	Pangani
97	Mtanza	Natural FR	Eastern	Pwani	Rufiji
98	Muhuwesi	Natural FR	Southern	Ruvuma	Tunduru
99	Munene	Natural FR	Lake	Kagera	Missenyi and Bukoba
100	Mvuha-Chamanyani	Natural FR	Eastern	Morogoro	Morogoro
101	Mwambalizi	Natural FR	Southern Highlands	Mbeya	Mbalali
102	Mwambesi	Nature FR	Southern	Ruvuma	Tunduru
103	Naliendele	Natural FR	Southern	Mtwara	Mtwara
104	Namakutwa/ Namuete	Natural FR	Eastern	Pwani	Rufiji
105	Nambiga	Natural FR	Eastern	Morogoro	Ulanga
106	Namswea hill	Natural FR	Southern	Ruvuma	Mbinga
107	Nandembo	Natural FR	Southern	Ruvuma	Tunduru
108	Nangaule	Natural FR	Southern	Lindi	Lindi
109	Nawenge	Natural FR	Eastern	Morogoro	Ulanga
110	Ndechela	Natural FR	Southern	Mtwara	Nanyumbu
111	New Dabaga Ulongambi	Natural FR	Southern Highlands	Iringa	Kilolo
112	Ngarama North	Natural FR	Southern	Lindi	Kilwa
113	Ngulakula	Natural FR	Eastern	Pwani	Kibiti
114	Nindo	Natural FR	Western	Shinyanga	Shinyanga
115	Njerera	Natural FR	Southern Highlands	Iringa	Mufindi
116	Nkoenankoli	Natural FR	Northern	Arusha	Arumeru
117	Nyandiduma	Natural FR	Eastern	Morogoro	Mvomero
118	Nyera/Kiperere	Natural FR	Southern	Lindi	Liwale
119	Patamela	Natural FR	Southern Highlands	Songwe	Songwe
120	Pindiro	Nature FR	Southern	Lindi	Kilwa

SN	Forest name	Category	Zone	Region	District
121	Pongwe	Natural FR	Eastern	Pwani	Bagamoyo (Chalinze)
122	Rondondo	Natural FR	Southern	Lindi	Kilwa
123	Ruasina (Mlema-Kiga Ruasina)	Natural FR	Lake	Kagera	Missenyi and Bukoba
124	Ruchwezi	Natural FR	Lake	Kagera	Missenyi
125	Rudewa South	Natural FR	Northern	Tanga	Kilindi
126	Ruhekei	Natural FR	Southern	Ruvuma	Nyasa
127	Rungo	Natural FR	Southern	Lindi	Kilwa
128	Rungwa River	Natural FR	Western	Katavi	Mlele
129	Rupiage	Natural FR	Eastern	Pwani	Rufiji
130	Ruvu South	Natural FR	Eastern	Pwani	Kisarawe
131	Rwamgasa	Natural FR	Lake	Geita	Geita
132	Sasawara	Natural FR	Southern	Ruvuma	Tunduru
133	Shikurufumi	Natural FR	Eastern	Morogoro	Mvomero
134	Songea fuel	Natural FR	Southern	Ruvuma	Songea
135	South Matogoro	Natural FR	Southern	Ruvuma	Songea
136	Tamburu	Natural FR	Eastern	Pwani	Rufiji
137	Ugalla River	Natural FR	Western	Katavi	Mlele
138	Ugalla North	Natural FR	Western	Tabora	Urambo and Kaliua
139	Uruma	Natural FR	Western	Tabora	Uyui and Tabora Municipal
140	Usa Springs	Natural FR	Northern	Arusha	Arumeru
141	Utete	Natural FR	Eastern	Pwani	Rufiji
142	Vikindu	Natural FR	Eastern	Pwani	Mkuranga
143	Wotta	Natural FR	Central	Dodoma	Mpwapwa

Appendix 25: List of degraded and partly deforested NFRs

SN	Forest name	Category	Zone	Region	District
1	Chabu	Natural FR	Southern Highlands	Mbeya	Ileje
2	Chitoa	Natural FR	Southern	Lindi	Lindi
3	Chiwindi	Natural FR	Southern	Ruvuma	Nyasa
4	Ileje Range	Natural FR	Southern Highlands	Mbeya	Ileje
5	Ilembo Usafwa	Natural FR	Southern Highlands	Mbeya	Mbalali
6	Isalalo	Natural FR	Southern Highlands	Songwe	Mbozi
7	Isalalolunga	Natural FR	Southern Highlands	Songwe	Momba
8	Itale	Natural FR	Southern Highlands	Mbeya	Ileje
9	Ivumbwe-Nzovure	Natural FR	Southern Highlands	Mbeya	Mbeya
10	Iyovwa	Natural FR	Southern Highlands	Mbeya	Ileje
11	Iyumba	Natural FR	Southern Highlands	Mbeya	Ileje
12	Kabulo	Natural FR	Southern Highlands	Mbeya	Ileje
13	Kasumulu	Natural FR	Southern Highlands	Mbeya	Kyela
14	Kigali	Natural FR	Southern Highlands	Mbeya	Kyela
15	Kitope	Natural FR	Southern	Lindi	Kilwa
16	Livingstone	Natural FR	Southern Highlands	Mbeya	Kyela and Rungwe and Nyasa
17	Lugufu	Natural FR	Western	Kigoma	Uvinza
18	Lupa North	Natural FR	Southern Highlands	Songwe	Chunya
19	Makonde Scarp I and II	Natural FR	Southern	Mtwara	Newala and Masasi
20	Makonde Scarp III	Natural FR	Southern	Mtwara	Tandahimba
21	Malehi	Natural FR	Southern	Lindi	Kilwa
22	Masanza	Natural FR	Western	Kigoma	Uvinza
23	Matogoro B	Natural FR	Southern	Ruvuma	Namtumbo
24	Matogoro East	Natural FR	Southern	Ruvuma	Songea
25	Mbembe	Natural FR	Southern Highlands	Mbeya	Mbeya
26	Mbeya Range	Natural FR	Southern Highlands	Mbeya	Mbeya
27	Mbinga-kimaji	Natural FR	Southern	Lindi	Kilwa
28	Mitundumbeya	Natural FR	Southern	Lindi	Kilwa
29	Mkuti	Natural FR	Western	Kigoma	Uvinza
30	Mkuti East	Natural FR	Western	Kigoma	Kasulu
31	Nampekeso	Natural FR	Southern	Lindi	Kilwa
32	Ndimba	Natural FR	Southern	Lindi	Lindi

SN	Forest name	Category	Zone	Region	District
33	Ngarama South	Natural FR	Southern	Lindi	Kilwa
34	North Makere	Natural FR	Western	Kigoma	Kasulu
35	Nyahua Mbuga	Natural FR	Western	Tabora	Sikonge
36	Shinji	Natural FR	Southern Highlands	Mbeya	Ileje
37	South Makere	Natural FR	Western	Kigoma	Kasulu
38	Tong'omba	Natural FR	Southern	Lindi	Kilwa
39	Ziwani	Natural FR	Southern	Mtwara	Mtwara
40	Biharamulo-Kahama	Plantation FR	Lake	Kagera and Geita	Biharamulo, Bukombe and Chato

Appendix 26: List of deforested NFRs

SN	Forest name	Category	Zone	Region	District
1	Bombo East II	Natural FR	Northern	Tanga	Korogwe
2	Bombo West	Natural FR	Northern	Tanga	Korogwe
3	Changandu	Natural FR	Northern	Tanga	Korogwe
4	Chenene East	Natural FR	Central	Dodoma	Chamwino
5	Dodoma reservior	Natural FR	Central	Dodoma	Dodoma
6	Geita	Natural FR	Lake	Geita	Geita
7	Gendagenda	Natural FR	Northern	Tanga	Handeni
8	Gwami	Natural FR	Eastern	Pwani	Bagamoyo (Chalinze)
9	Igombe Dam	Natural FR	Western	Tabora	Tabora Municipal
10	Igombe River	Natural FR	Western	Tabora	Uyui, Kaliua and Nzega
11	Ilomero Hill	Natural FR	Western	Tabora	Nzega
12	Irangi Scarp	Natural FR	Central	Dodoma	Kondoa
13	Kagongho	Natural FR	Western	Tabora	Nzega
14	Kahe I	Natural FR	Northern	Kilimanjaro	Moshi
15	Kahe II	Natural FR	Northern	Kilimanjaro	Moshi
16	Kalambo	Nature FR	Southern Highlands	Rukwa	Kalambo
17	Kigongkwe	Natural FR	Central	Dodoma	Dodoma
18	Kipiki	Natural FR	Southern	Ruvuma	Namtumbo
19	Kitivo North	Natural FR	Northern	Tanga	Lushoto
20	Korogwe Hill	Natural FR	Northern	Tanga	Korogwe
21	Kungwe Bay	Natural FR	Western	Kigoma	Uvinza
22	Kyarano	Natural FR	Lake	Mara	Butiama
23	Kyosa	Natural FR	Southern Highlands	Mbeya	Ileje
24	Mafleta	Natural FR	Eastern	Morogoro	Mvomero
25	Magoto	Natural FR	Eastern	Morogoro	Mvomero
26	Marya Farm	Natural FR	Lake	Mwanza	Kwimba
27	Mbogo	Natural FR	Eastern	Morogoro	Mvomero
28	Membe	Natural FR	Southern Highlands	Mbeya	Ileje
29	Mkweni	Natural FR	Western	Shinyanga	Kahama
30	Mohoro	Natural FR	Eastern	Pwani	Rufiji
31	Mombo	Natural FR	Northern	Tanga	Korogwe
32	Mwantini	Natural FR	Western	Shinyanga	Shinyanga

SN	Forest name	Category	Zone	Region	District
33	Mwenga	Natural FR	Northern	Tanga	Korogwe
34	Ndolwa	Natural FR	Northern	Tanga	Korogwe
35	Ntalikwa	Natural FR	Western	Tabora	Tabora Municipal
36	Nyangedi	Natural FR	Southern	Lindi	Lindi
37	Ruawa	Natural FR	Southern	Lindi	Lindi
38	Ruiga River	Natural FR	Lake	Kagera	Muleba
39	Sayaka	Natural FR	Lake	Mwanza	Magu
40	Unyambiu South	Natural FR	Western	Tabora	Igunga
41	Usindakwe	Natural FR	Lake	Geita	Geita
42	Uyui Kigwa Rubuga	Natural FR	Western	Tabora	Uyui
43	Uzigua	Natural FR	Eastern	Pwani	Bagamoyo (Chalinze)

Appendix 27: List of LAFRs in good condition

SN	Forest name	Category	Zone	Region	District
1	Isabe	Natural FR	Central	Dodoma	Kondoa
2	Zingiziwa	Natural FR	Eastern zone	Dar es Salaam	Ilala Municipal
3	Old Sola Dam	Natural FR	Lake	Simiyu	Maswa
4	Sola	Natural FR	Lake	Simiyu	Maswa
5	Chongweni	Natural FR	Northern	Kilimanjaro	Same
6	Gelai	Natural FR	Northern	Arusha	Longido
7	Gonja	Natural FR	Northern	Kilimanjaro	Same
8	Kankoma	Natural FR	Northern	Kilimanjaro	Same
9	Kiranga Hangae	Natural FR	Northern	Kilimanjaro	Same
10	Kisiwani	Natural FR	Northern	Kilimanjaro	Same
11	Kitara Ridge	Natural FR	Northern	Tanga	Lushoto
12	Kitumbeine	Natural FR	Northern	Arusha	Longido
13	Kiutu	Natural FR	Northern	Arusha	Arusha DC
14	Kwebago	Natural FR	Northern	Tanga	Bumbuli
15	Kwizu	Natural FR	Northern	Kilimanjaro	Same
16	Longido	Natural FR	Northern	Arusha	Longido
17	Maganda	Natural FR	Northern	Kilimanjaro	Same
18	Mwenigombelo	Natural FR	Northern	Tanga	Bumbuli
19	Vumari	Natural FR	Northern	Kilimanjaro	Same
20	Half mile strip	Plantation FR	Northern	Kilimanjaro	Rombo
21	Langoni	Plantation FR	Northern	Tanga	Pangani
22	Mleni	Plantation FR	Northern	Tanga	Tanga
23	Chandamali	Natural FR	Southern	Ruvuma	Songea
24	Makaranga	Natural FR	Southern	Lindi	Lindi
25	Nyangamara	Natural FR	Southern	Lindi	Lindi
26	Fonera	Natural FR	Southern Highlands	Songwe	Mbozi
27	Ipuji	Natural FR	Southern highlands	Njombe	Makete
28	Katulyange	Natural FR	Southern Highlands	Rukwa	Nkasi
29	Kyejo	Natural FR	Southern Highlands	Mbeya	Rungwe
30	Ntazu	Natural FR	Southern Highlands	Songwe	Mbozi
31	Masito	Natural FR	Western	Kigoma	Ivinza

32	Mpembampazi	Natural FR	Western	Tabora	Sikonge
33	Tongwe West	Natural FR	Western	Katavi	Mpanda
34	Tongwe East	Natural FR	Western	Katavi	Mpanda
35	Ugunda	Natural FR	Western	Tabora	Sikonge
36	Usumbwa	Natural FR	Western	Shinyanga	Kahama (Ushetu DC)
37	Walla river	Natural FR	Western	Tabora	Sikonge

Appendix 28: List of degraded LAFRs

SN	Forest name	Category	Zone	Region	District
1	Malambo	Natural FR	Lake	Simiyu	Bariadi
2	Mbogwe-Bukombe	Natural FR	Lake	Geita	Bukombe
3	Kwenyashu	Natural FR	Northern	Tanga	Bumbuli
4	Bisumwa	Natural FR	Lake	Mara	Butiama
5	Magana	Natural FR	Lake	Mara	Butiama
6	Sasajila Mount Humbi	Natural FR	Central	Dodoma	Chamwino
7	Ruande	Natural FR	Lake	Geita	Geita
8	Buba	Natural FR	Southern Highlands	Mbeya	Ileje
9	Nakalulu	Natural FR	Southern Highlands	Mbeya	Ileje
10	Nalupembe	Natural FR	Southern Highlands	Mbeya	Ileje
11	Namkumbukwa	Natural FR	Southern Highlands	Mbeya	Ileje
12	Mapogoro	Natural FR	Southern Highlands	Mbeya	Ileje
13	Itinginya	Natural FR	Southern Highlands	Mbeya	Ileje
14	Pimbi	Natural FR	Southern Highlands	Mbeya	Ileje
15	Haraka	Natural FR	Southern Highlands	Mbeya	Ileje
16	Iyuli	Natural FR	Southern Highlands	Mbeya	Ileje
17	Ndoka	Natural FR	Southern Highlands	Mbeya	Ileje
18	Ishenta	Natural FR	Southern Highlands	Mbeya	Ileje
19	Kalembo/Halembo	Natural FR	Southern Highlands	Mbeya	Ileje
20	Kisesa	Natural FR	Southern Highlands	Iringa	Iringa
21	Mwamapalala	Natural FR	Lake	Simiyu	Itilima
22	Mpunze	Natural FR	Western	Shinyanga	Kahama (Ushetu DC)
23	Ushetu/Ubagwe	Natural FR	Western	Shinyanga	Kahama (Ushetu DC)
24	Mbalu	Natural FR	Northern	Tanga	Kilindi
25	Mduguyu	Natural FR	Northern	Tanga	Kilindi
26	Mount Gitu	Natural FR	Northern	Tanga	Kilindi
27	Mount Vuju	Natural FR	Northern	Tanga	Kilindi
28	Kitonga Kihulula	Natural FR	Southern Highlands	Iringa	Kilolo
29	Ihanga	Natural FR	Eastern zone	Morogoro	Kilombero
30	Mhalo	Natural FR	Lake	Mwanza	Kwimba
31	Mwamakelemu	Natural FR	Lake	Mwanza	Kwimba
32	Busale	Natural FR	Southern Highlands	Mbeya	Kyela
33	Lugela	Natural FR	Southern Highlands	Mbeya	Kyela

SN	Forest name	Category	Zone	Region	District
34	Masukulu	Natural FR	Southern Highlands	Mbeya	Kyela
35	Nakaba	Natural FR	Southern Highlands	Mbeya	Kyela
36	Mtama	Natural FR	Southern	Lindi	Lindi
37	Bagai	Natural FR	Northern	Tanga	Lushoto
38	Bombo Makole	Natural FR	Northern	Tanga	Lushoto
39	Mtumbi	Natural FR	Northern	Tanga	Lushoto
40	Induku	Natural FR	Southern Highlands	Njombe	Makete
41	Nagaga	Natural FR	Southern	Mtwara	Masasi
42	Gulung'washi	Natural FR	Lake	Simiyu	Maswa
43	Forera	Natural FR	Southern Highlands	Songwe	Mbozi
44	Long'osont	Natural FR	Southern Highlands	Songwe	Mbozi
45	Ntavu	Natural FR	Southern Highlands	Songwe	Mbozi
46	Diwale	Natural FR	Eastern zone	Morogoro	Morogoro
47	Kilengwe	Natural FR	Eastern zone	Morogoro	Morogoro
48	Kwangola	Natural FR	Eastern zone	Morogoro	Morogoro
49	Nguru ya ndege	Natural FR	Eastern zone	Morogoro	Morogoro
50	Pangawe East	Natural FR	Eastern zone	Morogoro	Morogoro
51	Pangawe West	Natural FR	Eastern zone	Morogoro	Morogoro
52	Nkamba	Natural FR	Western	Katavi	Mpanda
53	Suguti	Natural FR	Lake	Mara	Musoma
54	Chilangala	Natural FR	Southern	Mtwara	Newala
55	Loliondo I	Natural FR	Northern	Arusha	Ngorongoro
56	Mbuzi	Natural FR	Southern Highlands	Rukwa	Nkasi
57	Mbamba bay	Natural FR	Southern	Ruvuma	Nyasa
58	Karitu	Natural FR	Western	Tabora	Nzega
59	Kichi Hill	Natural FR	Eastern zone	Pwani	Rufiji
60	Ilima	Natural FR	Southern Highlands	Mbeya	Rungwe
61	Masukulu	Natural FR	Southern Highlands	Mbeya	Rungwe
62	Nyachina	Natural FR	Lake	Mwanza	Sengerema
63	Sima	Natural FR	Lake	Mwanza	Sengerema
64	Buyoga Hill	Natural FR	Western	Shinyanga	Shinyanga
65	Mwangilye Hill	Natural FR	Western	Shinyanga	Shinyanga
66	Mwatunge Hill	Natural FR	Western	Shinyanga	Shinyanga
67	Nyamilanga Hill	Natural FR	Western	Shinyanga	Shinyanga
68	Goweko	Natural FR	Western	Tabora	Sikonge
69	Gumbiro	Natural FR	Southern	Ruvuma	Songea
70	Kwalikucha	Natural FR	Southern	Ruvuma	Songea
71	Liumbu	Natural FR	Southern	Ruvuma	Songea

SN	Forest name	Category	Zone	Region	District
72	Maposeni	Natural FR	Southern	Ruvuma	Songea
73	Namanyigu	Natural FR	Southern	Ruvuma	Songea
74	Unangwa	Natural FR	Southern	Ruvuma	Songea
75	Lyambalyam-bamfipa	Natural FR	Southern Highlands	Rukwa	Sumbawanga
76	Litehu	Natural FR	Southern	Mtwara	Tandahimba
77	Rukunda-Kachambi	Natural FR	Western	Kigoma	Uvinza
78	Ibindo	Plantation FR	Lake	Mwanza	Kwimba
79	Kiva Hill	Natural FR	Northern	Tanga	Handeni
80	Bushenya	Natural FR	Lake	Kagera	Missenyi
81	Ushirombo	Natural FR	Lake	Geita	Bukombe

Appendix 29: List of degraded and partly deforested LAFRs

SN	Forest name	Category	Zone	Region	District
1	Ikomelo	Natural FR	Southern Highlands	Mbeya	Kyela
2	Ilemba	Natural FR	Southern Highlands	Rukwa	Sumbawanga
3	Namikupa	Natural FR	Southern	Mtwara	Tandahimba
4	Ndengele	Natural FR	Southern	Ruvuma	Nyasa
5	Ubungu	Natural FR	Southern Highlands	Mbeya	Ileje
6	Ulyankulu	Natural FR	Western	Tabora	Kaliua

Appendix 30: List of deforested LAFRs

SN	Forest name	Category	Zone	Region	District
1	Buyange	Natural FR	Western	Shinyanga	Shinyanga
2	Chinyami	Natural FR	Central	Dodoma	Chamwino
3	Goima	Natural FR	Central	Dodoma	Bahi
4	Ikowa (chamheme)	Natural FR	Central	Dodoma	Chamwino
5	Kakora	Natural FR	Lake	Mwanza	Kwimba
6	Kibwezi	Natural FR	Northern	Arusha	Arusha
7	Kileo	Natural FR	Northern	Kilimanjaro	Mwanga
8	Kurwirwi	Natural FR	Lake	Mara	Bunda
9	Kwasunga I	Natural FR	Northern	Tanga	Handeni
10	Kwasunga II	Natural FR	Northern	Tanga	Handeni
11	Lendikinya	Natural FR	Northern	Arusha	Monduli
12	Luhanga	Natural FR	Northern	Tanga	Handeni
13	Lukoka	Natural FR	Northern	Tanga	Korogwe
14	Magubike North	Natural FR	Eastern zone	Morogoro	Kilosa
15	Magubike South	Natural FR	Eastern zone	Morogoro	Kilosa
16	Makingi hill	Natural FR	Western	Kigoma	Kasulu
17	Manongho	Natural FR	Western	Shinyanga	Shinyanga
18	Mfili	Natural FR	Southern Highlands	Rukwa	Nkasi
19	Miyenze	Natural FR	Lake	Geita	Nyang'wale
20	Mtita	Natural FR	Eastern zone	Pwani	Kibiti
21	Mwakarundi	Natural FR	Western	Tabora	Nzega
22	Mwanhala	Natural FR	Western	Tabora	Nzega
23	Ngukumo	Natural FR	Western	Tabora	Nzega
24	Nyakabindi	Natural FR	Lake	Simiyu	Bariadi
25	Nyumburuni	Natural FR	Eastern zone	Pwani	Kibiti
26	Puge North	Natural FR	Western	Tabora	Nzega
27	Puge South	Natural FR	Western	Tabora	Nzega
28	Ruhoi River	Natural FR	Eastern zone	Pwani	Rufiji
29	Runzewe	Natural FR	Lake	Geita	Bukombe
30	Sambasha	Natural FR	Northern	Arusha	Arusha
31	Sangeni	Natural FR	Northern	Tanga	Kilindi
32	Senkenke	Natural FR	Central	Singida	Iramba
33	Sikonge	Natural FR	Western	Tabora	Sikonge
34	Talaga	Natural FR	Lake	Mwanza	Kwimba
35	Unyambiu North	Natural FR	Western	Tabora	Igunga
36	Bujingwa	Plantation FR	Lake	Mwanza	Kwimba

Appendix 31: List of VLFRs in good condition

SN	Forest name	Category	Zone	Region	District
1	Nyamkongo	Natural VLFR	Eastern	Pwani	Rufiji
2	Yelya	Natural VLFR	Eastern	Pwani	Rufiji
3	Masimba	Natural VLFR	Eastern	Morogoro	Mvomero
4	Difinga	Natural VLFR	Eastern	Morogoro	Mvomero
5	Mziha	Natural VLFR	Eastern	Morogoro	Mvomero
6	Bwage	Natural VLFR	Eastern	Morogoro	Mvomero
7	Makuyu	Natural VLFR	Eastern	Morogoro	Mvomero
8	Ndole	Natural VLFR	Eastern	Morogoro	Mvomero
9	Gonja	Natural VLFR	Eastern	Morogoro	Mvomero
10	Diburuma	Natural VLFR	Eastern	Morogoro	Mvomero
11	Kibatula	Natural VLFR	Eastern	Morogoro	Mvomero
12	Kihondo	Natural VLFR	Eastern	Morogoro	Mvomero
13	Msongozi	Natural VLFR	Eastern	Morogoro	Mvomero
14	Maharaka	Natural VLFR	Eastern	Morogoro	Mvomero
15	Misengele	Natural VLFR	Eastern	Morogoro	Mvomero
16	Mwokovu	Natural VLFR	Eastern	Morogoro	Kilombero
17	Unumbi	Natural VLFR	Eastern	Morogoro	Kilombero
18	Ibiki	Natural VLFR	Eastern	Morogoro	Kilombero
19	Ngowo	Natural VLFR	Eastern	Morogoro	Kilombero
20	Ibingu	Natural VLFR	Eastern	Morogoro	Kilosa
21	Lunenzi	Natural VLFR	Eastern	Morogoro	Kilosa
22	Idete	Natural VLFR	Eastern	Morogoro	Kilosa
23	Mfuluni	Natural VLFR	Eastern	Morogoro	Kilosa
24	Dodoma Isanga	Natural VLFR	Eastern	Morogoro	Kilosa
25	Nyali	Natural VLFR	Eastern	Morogoro	Kilosa
26	Rudewa gongoni	Natural VLFR	Eastern	Morogoro	Kilosa
27	Unone	Natural VLFR	Eastern	Morogoro	Kilosa
28	Gongwe	Natural VLFR	Eastern	Morogoro	Kilosa
29	Mvumi	Natural VLFR	Eastern	Morogoro	Kilosa
30	Kigunga	Natural VLFR	Eastern	Morogoro	Kilosa
31	Ulaya Kibaoni	Natural VLFR	Eastern	Morogoro	Kilosa
32	Mhenda	Natural VLFR	Eastern	Morogoro	Kilosa
33	Kitunduweta	Natural VLFR	Eastern	Morogoro	Kilosa
34	Mbamba	Natural VLFR	Eastern	Morogoro	Kilosa

35	Zombo Lumbo	Natural VLFR	Eastern	Morogoro	Kilosa
36	Madizini	Natural VLFR	Eastern	Morogoro	Kilosa
37	Malolo A	Natural VLFR	Eastern	Morogoro	Kilosa
38	Kisanga	Natural VLFR	Eastern	Morogoro	Kilosa
39	Ihombwe	Natural VLFR	Eastern	Morogoro	Kilosa
40	Chabima	Natural VLFR	Eastern	Morogoro	Kilosa
41	Mpola	Natural VLFR	Central	Singida	Manyoni
42	SULEDO	Natural VLFR	Central	Manyara	Kiteto
43	Dirma	Natural VLFR	Central	Manyara	Hanang
44	Sarame	Natural VLFR	Central	Manyara	Babati Rural
45	Mawata	Natural VLFR	Northern	Tanga	Pangani
46	Kizee/Kizere	Natural VLFR	Northern	Tanga	Muheza

Appendix 32: List of degraded VLFRs

SN	Forest name	Status	Zone	Region	District
1	Mkwala	Natural VLFR	Eastern	Pwani	Mkuranga
2	Chakomni	Natural VLFR	Eastern	Pwani	Mkuranga
3	Itumbati	Natural VLFR	Eastern	Pwani	Mkuranga
4	Nyamambi	Natural VLFR	Eastern	Pwani	Mkuranga
5	Chamga-vinyaga	Natural VLFR	Eastern	Pwani	Mkuranga
6	Nyangolombe	Natural VLFR	Eastern	Pwani	Mkuranga
7	Vianzi	Natural VLFR	Eastern	Pwani	Mkuranga
8	Mkiu	Natural VLFR	Eastern	Pwani	Mkuranga
9	Magoma	Natural VLFR	Eastern	Pwani	Mkuranga
10	Kongo	Natural VLFR	Eastern	Pwani	Mkuranga
11	Bogobogo	Natural VLFR	Eastern	Pwani	Mkuranga
12	Kibupuni	Natural VLFR	Eastern	Pwani	Mkuranga
13	Kisangire	Natural VLFR	Eastern	Pwani	Kisarawe
14	Nyani	Natural VLFR	Eastern	Pwani	Kisarawe
15	Kidugalo	Natural VLFR	Eastern	Pwani	Kisarawe
16	Msanga Sokoni	Natural VLFR	Eastern	Pwani	Kisarawe
17	Mafumbi	Natural VLFR	Eastern	Pwani	Kisarawe
18	Sofu	Natural VLFR	Eastern	Pwani	Kisarawe
19	Chakenge	Natural VLFR	Eastern	Pwani	Kisarawe
20	Kisanga	Natural VLFR	Eastern	Pwani	Kisarawe
21	MaharageGwata	Natural VLFR	Eastern	Pwani	Kisarawe
22	Dodoma	Natural VLFR	Eastern	Morogoro	Kilombero

SN	Forest name	Status	Zone	Region	District
23	Ilembe	Natural VLFR	Eastern	Morogoro	Kilombero
24	Ndefi	Natural VLFR	Eastern	Morogoro	Kilombero
25	Salanga	Natural VLFR	Eastern	Morogoro	Kilombero
26	Iwungi	Natural VLFR	Eastern	Morogoro	Kilombero
27	Katurukila	Natural VLFR	Eastern	Morogoro	Kilombero
28	Itongowa kipuga	Natural VLFR	Eastern	Morogoro	Kilombero
29	King'ulung'ulu	Natural VLFR	Eastern	Morogoro	Kilombero
30	Myale	Natural VLFR	Eastern	Morogoro	Kilombero
31	Lusoma/Ijia	Natural VLFR	Eastern	Morogoro	Kilombero
32	Mng'eng'esi	Natural VLFR	Eastern	Morogoro	Kilombero
33	Kibasila	Natural VLFR	Eastern	Morogoro	Kilombero
34	Uhanila	Natural VLFR	Eastern	Morogoro	Kilombero
35	Chokoachoko	Natural VLFR	Eastern	Morogoro	Ulanga
36	Kimbiru	Natural VLFR	Eastern	Morogoro	Ulanga
37	Luwuya	Natural VLFR	Eastern	Morogoro	Ulanga
38	Kila	Natural VLFR	Eastern	Morogoro	Morogoro
39	Ngong'olo	Natural VLFR	Eastern	Morogoro	Morogoro
40	Matuli	Natural VLFR	Eastern	Morogoro	Morogoro
41	Kidunda	Natural VLFR	Eastern	Morogoro	Morogoro
42	Kabogwa	Natural VLFR	Eastern	Morogoro	Morogoro
43	Bebe	Natural VLFR	Eastern	Morogoro	Morogoro
44	Vinanze	Natural VLFR	Eastern	Morogoro	Morogoro
45	Yangeyange	Natural VLFR	Eastern	Morogoro	Morogoro
46	Mibonha	Natural VLFR	Eastern	Morogoro	Morogoro
47	Ngwelengala	Natural VLFR	Eastern	Morogoro	Morogoro
48	Gogo	Natural VLFR	Eastern	Morogoro	Morogoro
49	Ugulo	Natural VLFR	Eastern	Morogoro	Morogoro
50	Ilonga	Natural VLFR	Eastern	Morogoro	Kilosa
51	Msimba	Natural VLFR	Eastern	Morogoro	Kilosa
52	Msalabani	Natural VLFR	Eastern	Morogoro	Kilosa
53	Mbwara	Natural VLFR	Eastern	Pwani	Rufiji
54	Nambunju	Natural VLFR	Eastern	Pwani	Rufiji
55	Tawi	Natural VLFR	Eastern	Pwani	Rufiji
56	Sangandunghu	Natural VLFR	Central	Dodoma	Mpwapwa
57	Kwatango	Natural VLFR	Northern	Tanga	Pangani
58	Kwavinonde	Natural VLFR	Northern	Tanga	Pangani

Appendix 33: List of degraded and partly deforested VLFRs

SN	Forest name	Status	Zone	Region	District
1	Mgori	VLFR	Central	Singida	Singida

Appendix 34: List of deforested VLFRs

SN	Forest name	Status	Zone	Region	District
1	Kikore	VLFR	Central	Dodoma	Kondoa Rural

Appendix 35: List of wildlife corridors

SN	Name	Category	Region	Route	Status
1	Bujingijila (Mt Rungwe-Livingstone)	Known	Mbeya		Disturbed/Active
2	Burigi-Akagera (Rwanda)	Known	Kagera		Disturbed/Active
3	Burigi-Moyowosi/Kigosi	Known	Kagera, Shinyanga, Kigoma		Disturbed/Active
4	Gombe-Kwitanga	Known	Kigoma		Disturbed/Active
5	Gombe-Mukungu-Rukamabasi	Known	Kigoma		Disturbed/Active
6	Greater Gombe Ecosystem-Masito-Ugalla	Known	Kigoma		Disturbed/Active
7	Igando-Igawa	Known	Iringa		Disturbed/Active
8	Katavi-Mahale	Known	Rukwa, Kigoma		Disturbed/Active
9	Katavi-Rungwa	Known	Rukwa, Mbeya, Iringa		Disturbed/Active
10	Kilimanjaro-Amboseli (Kenya) (Kitendeni)	Known	Kilimanjaro, Arusha		Disturbed/Active
11	Loazi-Kalambo	Known	Rukwa		Disturbed/Active
12	Loazi-Lwafi	Known	Rukwa		Disturbed/Active
13	Manyara Ranch-Lake Natron	Known	Manyara		Disturbed/Active
14	Manyara-Ngorongoro (Upper Kitete/Selela)	Known	Arusha, Manyara		Disturbed/Active
15	Muhezi-Swaga Swaga	Known	Dodoma		Disturbed/Active
16	Selous-Niassa (Mozambique)	Known	Ruvuma		Disturbed/Active
17	Tarangire-Makuyuni (Makuyuni)	Known	Manyara		Disturbed/Active
18	Tarangire-Mkungunero/Kimotorok	Known	Manyara		Disturbed/Active

SN	Name	Category	Region	Route	Status
19	Tarangire-Simanjiro Plains	Known	Manyara, Arusha		Disturbed/Active
20	Tarangire-Manyara (Kwakuchinja)	Known	Manyara		Disturbed/Active
21	Udzungwa-Mikumi	Known	Morogoro		Disturbed/Active
22	Udzungwa-Ruaha	Known	Iringa		Disturbed/Active
23	Udzungwa-Selous	Known	Iringa, Morogoro		Disturbed/Active
24	Uzungwa Scarp-Kilombero NR (Mngeta)	Known	Iringa, Morogoro		Disturbed/Active
25	Uluguru North-South	Known	Morogoro		Disturbed/Active
26	Usambaras, East (Derema)	Known	Tanga		Disturbed/Active
27	Usambaras, West	Known	Tanga		Disturbed/Active
28	Wami Mbiki-Handeni/ Southern Masai Steppe	Known	Morogoro, Tanga		Disturbed/Active
29	Wami Mbiki-Jukumu/Gonabis/Northern Selous	Known	Morogoro		Disturbed/Active
30	Wami Mbiki-Mikumi	Known	Morogoro		Disturbed/Active
31	Swaga Swaga-Mikumi	New	Dodoma	Connecting two protected areas though (i) several villages of Chemba and Chamwino Districts, Mabande, NARCO ranch, several villages of Gairo and Kilosa	Disturbed/Active
32	Tarangire NP – Mikumi NP	New	Manyara	From Tarangire NP, Makame WMA, Napilikunya Village, SULEDO VLFR, Embroy Multangos, several villages of Kilosa Gairo and Kilosa Districts to Mikumi NP	Disturbed/Active
33	Muhesi GR – Swagaswaga GR (Route I)	New	Singida	From Muhesi GR, Mbugani, Aghondi FR, Solya Village, Kilimatinde, Salander, Hika Village, Kilingee Village and Kilinga FR to Swagaswaga	Disturbed/Active
34	Muhesi GR – Swagaswaga GR (Route II)	New	Singida	via Mbugani, Aghondi, Manyoni, Hika Village, Msemembo FR, London	Disturbed/Active

SN	Name	Category	Region	Route	Status
35	Swagaswaga GR – Manyara NP	New	Dodoma	via Golimba villages, Mgori VLFR, Balangidalalu, presently NAFCO farm, Mount Hanang NFR, several villages of Hanand District, and Hasama FR	Disturbed/Active
36	Rondo-Kipengele	New	Lindi	via Mbwemkuru and Mandawa	Disturbed/Active
37	Rondo-Selous	New	Lindi	Connecting Rondo NR and Selous GR	Disturbed/Active
38	Selous-Gesimasowa	New	Songea	via Litumbandyosi	Disturbed/Active
39	Katavi-Rungwa	New	Mbeya	viaMuipa and Rukwa FRs	Disturbed/Active
40	Katavi-Mahale	New	Mbeya	via Ukanga FR	Disturbed/Active
41	Arusha NP-Lake Natron	New	Arusha	Arusha NP to Lake Natron GCA via Kimokoa and Tanganyeti routes	Disturbed/Active
42	Jangwani Corridor	New	Arusha	From Manyara NP to Lake Natron GCA via Manyara Ranch, Zaburi Village, Saburi Estate, Stein Estate, Esmingor FR	Disturbed/Active
43	Tarangire NP – Mkomazi NP	New	Kilimanjaro	From Tarangire NP to Mkomazi NP via village lands in Simanjiro District, Ruvu GCA, villages of Same District, Mroro VLFR in Makanya Village, Mkonga FR, Chambogo FR, Kwizu FR, Vumari FR	Disturbed/Active
44	Arusha NP-Kilimanjaro NP (Kismiri corridor)	New	Arusha/ Kilimanjaro	Arusha NP and KINAPA then Amboseli through (i) Enguitkoi, villages of Longido District to and (ii) through Ngarenanyuki, Ngabobo,and West Kilimanjaro	Disturbed/Active
45	Mkomazi NP-Tsavo NP	New	Kilimanjaro	The corridor is connecting Mkomazi NP and Tsavo NP via Kalambandea, Gongoni and lake Jipe	Disturbed/Active
46	Tarangire NP - Mikumi NP	New	Arusha	The corridor is connecting Tarangire NP and Mikumi NP passing through Kimotolo Village, Makame WMA, Tendo village, several villages of Kiteto (e.g. Napilikunya Village, villages in Embroymultangos), Gairo and Kilosa Districts to Mikumi NP	Disturbed/Active
47	Saadani NP-Msumbugwe FR	New	Tanga	The corridor is connecting Saadani NP and Msumbugwe FR through Garafuno.	Disturbed/Active

SN	Name	Category	Region	Route	Status
48	Saadani NP - East Usambara Mountains	New	Tanga	The corridor is connecting Saadani NP – East Usambara Mountains through Msumbugwe FR, Beho Village, Pangani (Kivuko cha tembo), Kibubu VLFR. From Kibubu, Tongwe FR, villages of Muheza District.	Disturbed/Active
49	Tsavo NP-Mkomazi NP-Saadani NP	New	Tanga	Eastern part of Tanzania and western part of Kenya. The corridor starts at Tsavo NP in Kenya through Mkomazi, Umba River GCA, Mbuta Hill VLFR in Mbuta Village, Mkingaleo Village, Magodi Village, Mwanyumba proposed VLFR in Mwanyumba Village, Kingo VLFR in Vunde Manyinyi Village, Nivumba VLFR in Dima Village, Gombero Village, Kibafuta Village, Mleni plantation, Tanga City, villages of Pangani District to Saadani NP	Disturbed/Active
50	Mkomazi NP-East Usambara	New	Tanga	Located to the east of Tanzania. The corridor is connecting Mkomazi NP and FRs in East Usambara Mountains. The corridor passes through Bombo West FR, villages of Mkinga District, Bombo East FR, villages of Kwamtiri, Matemboni	Disturbed/Active
51	Rungwa GR -Kizigo GR	New	Tabora	Passing through Kamumpa, Mwitiko and Majojoro villages at Sikonge District	Disturbed/Active
52	Isawima	New	Tabora	Connecting Kigosi, Mwoyowosi and Ugalla GRs	Disturbed/Active
53	Tandala	New	Kigoma	Connecting Mwoyowosi and Ugalla GRs	Disturbed/Active
54	Msaginia – Katavi NP	New	Katavi	Connecting Msaginia and Katavi NP	Disturbed/Active
55	Makao corridor	New	Simiyu	Connecting NCAA, Maswa, Serengeti and Makao WMA	Disturbed/Active
56	Kwigutu-Kirumi	New	Mara	Passing through Mwibagi, Nyakiswa and Kyabakali (Buffer zone for Serengeti NP) and Saliosimba	Disturbed/Active
57	Ikorongo	New	Mara	From Grumeti GR to Serengeti NP	Restored/Active
58	Kabalokola-Minziro vilango	New	Mara	Connecting Kabalokola to Minziro vilango (Minziro Nature Reserve)	Disturbed/Active

Appendix 36: List of wildlife corridors and their respective challenges and potential solutions

SN	Name	Challenge	Potential solution
1.	Tarangire-Manyara (Kwakuchinja) corridor	♦ Conflicting land uses such as wildlife management and conservation versus agriculture, livestock keeping, urbanization and settlements, fuel wood production, bush meat hunting, phosphate mining, and fishing (Caro *et al*., 2009; Hariohay, 2013). ♦ Disturbed by settlements, agriculture and densely cattle incursion. The most affected villages with deforestation include Rhotia and Magara. ♦ Presence of human-elephant conflicts from crop-raiding and injuries/deaths. ♦ Human-lion conflicts and retaliatory killings.	♦ Village participatory land-use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
2.	Wami Mbiki-Saadani corridor	Degraded because of charcoal production, settlement, cultivation and livestock keeping.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
3.	Udzungwa-Mikumi corridor	Slight deforestation due to cultivation, extensive grazing and settlement.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.

SN	Name	Challenge	Potential solution
4.	Wami Mbiki-Jukumu/Gonabi / Northern Selous corridor	Moderate deforestation due to cultivation, settlements and charcoal making.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
5.	Wami Mbiki - Handeni (Southern Masai Steppe) corridor	Deforested and degraded because of cultivation, settlement and charcoal production.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
6.	Udzungwa-Ruaha corridor	Deforestation due to cultivation, charcoal production, settlement	♦ Village participatory land-use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
7.	Udzungwa-Selous (Nyanganje) Corridor	Human immigration for rice farming and cattle grazing. There is no noticeable deforestation, probably because large area is dominated by grassland.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
7.	Udzungwa-Selous (Ruipa) Corridor	Human immigration for rice farming and cattle grazing.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.

SN	Name	Challenge	Potential solution
8.	Udzungwa scarp - Kilombero Nature Reserve (Mngeta) Corridor	Human immigration for rice farming and cattle grazing.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
9.	Loazi-Kalambo Corridor	Presence of human settlements.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
10.	Wami Mbiki-Jukumu/Gonabi / Northern Selous corridor	Deforestation due to cultivation, settlement	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
11.	Loazi-Ntwantwa-Lwafi Corridor	Charcoal making and agriculture (Kideghesho, 2015).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
12.	Manyara Ranch-Lake Natron (Jangwani) corridor	Agriculture, livestock keeping, and game hunting (Morrison and Bolger, 2014) 96.88% farmers interviewed in four sub-villages had previously experienced conflict with animals (Weiss, 2013).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.

SN	Name	Challenge	Potential solution
13.	Selous-Niassa (Western and Eastern Routes) Corridor	Highly deforested – Charcoal production, honey gathering, clearance for cultivation and wildfires (Zella, 2016).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
14.	. Manyara - Ngorongoro (Upper Kitete/ Selela) Corridor	Highly disturbed by agriculture, and livestock incursion (TAWIRI, 2009).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
15.	. Muhezi-Swagaswaga Corridor	Deforested due to cultivation, settlements, charcoal production and mining (Eakin, 2017).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
16.	Burigi-Akagera corridor	Disturbances cause by refugees from refugee camps e.g. hunting of wildlife (Deleuze and Cooney, 2007).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of the land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement. ♦ Ensure that no new camps are established within 15 km of GR boundary.
17.	Burigi-Moyowosi/Kigosi Corridor	Disturbed due to cultivation, settlement, charcoal burning, timber production,and livestock.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of the land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.

SN	Name	Challenge	Potential solution
18.	Gombe Ecosystem-Masito-Ugalla Corridor	Disturbed increasing in human practices such as farming, cutting down trees for charcoal burning and fuel, illegal logging, forest fires and clearance of forest for the establishment of settlement (Makunga and Misana, 2017).	♦ The establishment of the VLFRs on village land to serve as potential wildlife corridors to ease chimpanzee movements to and from protected areas (TAWIRI, 2018). ♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
19.	Igando-Igawa Corridor	Disturbed due to settlements, forest fires, charcoal burning, cultivation and grazing (Massawe, 2010).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
20.	Katavi-Mahale Corridor	Conversion of forests/riverine/wetland into agricultural land, poaching, wildfire, settlement establishment (USAID, 2014).	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement. ♦ To upgrade general land to VLFR (TAWIRI, 2018).
21.	Katavi/Rukwa/ Lukwati-Rungwa/Kisigo/ Muhesi Corridor	High deforestation caused by clearing for farming (Tobacco, sesame and sunflower are cultivated as cash crops, whereas maize, beans andmillet are major food crops), tree cutting for firewood (including for tobacco curing), charcoal production, and timber production etc (Hariohay *et al*., 2017). Other threats include overgrazing of livestock, forest fires, poaching, and artisanal mining.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.

SN	Name	Challenge	Potential solution
22.	Gombe Kwitanga-Gombe-Mukungu-Rukamabasi	Disturbed by cattle incursion and settlements forest fires, extraction of firewood.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
23.	Tarangire-Mkungunero/ Kimotorok Corridor	Expansion of land for agriculture in Mkungunero area has led to the blockage of the corridor (Njamasi, 2015), and grazing.	♦ Village participatory land use planning and where necessary relocation of households. ♦ Effective implementation of land use plan. ♦ Implementation of regulations - Wildlife Corridors, dispersal areas, buffer zones and migratory routes (GN 123 of March 2018). ♦ Effective law enforcement.
24.	Makuyuni Corridor	Agriculture and grazing	Sensitization of local communities on the benefits of conservation, benefit sharing, land-use planning including potential human migration and use of effective measures to deter wildlife encroachment on farmsteads.

Appendix 37: List of NFRs that are combined to form one FR or nature FR

SN	Forest name	Zone	Region	District	Size (ha)	JB	GNN	Year of gazette-ment	New FR
1	Uluguru North	Eastern	Morogoro	Morogoro	8,498.4	536	219/578	1961/1963	Uluguru Nature FR
2	Uluguru South	Eastern	Morogoro	Morogoro	17,292.7	579/585	21	1930	
3	Bunduki I-III	Eastern	Morogoro	Morogoro	111.0	1081	Cap. 132	1950	
4	Nguru South	Eastern	Morogoro	Mvomero	18,792.6	84	Cap. 132 p 1357		Mkingu Nature FR
5	Mkindo	Eastern	Morogoro	Mvomero	5,244.0	212/2034	409	1954	
6	Pagale	Eastern	Morogoro	Mvomero	12,950.0	444	81	1958	Mtibwa Plantation FR
7	Gendagenda North	Nothern	Tanga	Handeni	890.7	526	24	1980	Gendagenda FR
8	Gendagenda South	Nothern	Tanga	Handeni	1,918.2	785	Cap. 132 p. 1950		
9	Kilanga (Nilo)	Nothern	Tanga	Korogwe	431.0	270/2229	154	1956	Nilo Nature FR
10	Lutindi (Nilo)	Nothern	Tanga	Korogwe	2,176.0	544/2229	458	1961	
11	Nkombola	Nothern	Tanga	Muheza	191.8	325	38	1957	
15	Mnyusi Scarp	Nothern	Tanga	Korogwe	674.0	370	296	1958	Amani Nature FR
16	Amani East	Nothern	Tanga	Muheza	99.0	216	111	1955	
17	Kwamkoro	Nothern	Tanga	Muheza	2,209.6	796	24	1961	
18	Kwamsambia	Nothern	Tanga	Muheza	1,820.3	1583	95	1954	
19	Amani Sigi	Nothern	Tanga	Muheza	1,141.0	505	43	1934	
20	Amani West	Nothern	Tanga	Muheza	144.2	217	196	1955	

SN	Forest name	Zone	Region	District	Size (ha)	JB	GNN	Year of gazette-ment	New FR
21	Shume Magamba	Nothern	Tanga	Lushoto	12,420.2	149	Cap.132 p. 1338		Shume plantation FR
22	Shume Magamba Extension	Nothern	Tanga	Lushoto	48.9	538	377	1961	
23	Kihuhwi Sigi	Nothern	Tanga	Muheza	904.5	302	43	1934	Longuza Plantation FR
24	Kihuhwi Teak	Nothern	Tanga	Muheza	26.3	205	194	1955	
25	Kolekole	Nothern	Tanga	Muheza	379.2	29/270	154	1956	
26	Longuza	Nothern	Tanga	Muheza	1,541.5	115	194	1954	
27	Gologolo East and West	Northern	Tanga	Lushoto	61.1	273	255	1957	Magamba Nature FR
28	Kwekanda/manolo	Northern	Tanga	Lushoto	104.8	52	101	1969	
29	Mamka	Northern	Tanga	Lushoto	129.5	527	100	1969	
30	Iyondo	Southern Highland	Iringa	Kilolo	27,973.5	432	555	1958	Kilombero Nature FR
31	Matundu	Southern Highland	Iringa	Kilolo	17,663.7	434	555	1958	
32	West Kilombero scarp	Southern Highland/ Eastern	Iringa/ Morogoro	Kilombero	195,260.0	312	196	1967	
33	Uzungwa scarp	Southern Highland	Iringa	Kilolo	32,763.0		198	1929	Uzungwa Scarp FR
34	Poroto Ridge	Southern Highland	Mbeya	Rungwe	9,332.0		68	1937	Rungwe Nature FR
35	Sawago	Southern Highland	Mbeya	Rungwe	1,696.5	38	68	1937	

SN	Forest name	Zone	Region	District	Size (ha)	JB	GNN	Year of gazette-ment	New FR
36	Rondo	Southern	Lindi	Lindi	14,630.2	464	354	1959	Rondo Nature FR
37	Mwambesi	Southern	Ruvuma	Tunduru	104,052.0	248	80/5	1956/1979	Mwambesi Nature FR
38	Pindiro	Southern	Lindi	Kilwa	11,795.0	1009	Cap. 132 p. 1932		Pindiro Nature FR
				Total	***505,366.4***				

Appendix 38: List of NFRs with management plans

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
1	Bagamoyo-mangrove	Mangrove FR	Pwani	Bagamoyo (Bagamoyo)	5,636.0	Protection	Outdated	No	No
2	Ilala-mangrove	Mangrove FR	Dar es Salaam	Ilala	25.3	Protection	Outdated	No	No
3	Kilwa-mangrove	Mangrove FR	Lindi	Kilwa	36,737.0	Protection	Outdated	No	No
4	Kinondoni and Ubungo-mangrove	Mangrove FR	Dar es Salaam	Kinondoni and Ubungo	325.6	Protection	Outdated	No	No
5	Lindi-mangrove	Mangrove FR	Lindi	Lindi	35,918.0	Protection	Outdated	No	No
6	Mafia-mangrove	Mangrove FR	Pwani	Mafia	4,365.0	Protection	Outdated	No	No
7	Mkinga-mangrove	Mangrove FR	Tanga	Mkinga	6,353.0	Protection	Outdated	No	No
8	Mkuranga-mangrove	Mangrove FR	Pwani	Mkuranga	3,498.0	Protection	Outdated	No	No
9	Muheza-mangrove	Mangrove FR	Tanga	Tanga	56.0	Protection	Outdated	No	No
10	Pangani-mangrove	Mangrove FR	Tanga	Pangani	1,700.0	Protection	Outdated	No	No
11	Rufiji delta-mangrove	Mangrove FR	Pwani	Kibiti	53,255.0	Protection	Outdated	No	No
12	Tanga-mangrove	Mangrove FR	Tanga	Tanga	3,050.0	Protection	Outdated	No	No
13	Temeke and Kigamboni-angrove	Mangrove FR	Dar es Salaam	Temeke and Kigamboni	2,051.7	Protection	Outdated	No	No
14	Bereku	Natural FR	Manyara	Babati	9,956.0	Protection	Current	Yes	No
15	Chaburuma	Natural FR	Ruvuma	Songea	193.0	Protection	Current	No	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
16	Chenene West	Natural FR	Dodoma	Bahi	1,989.0	Production	Current	No	No
17	Chuvwi	Natural FR	Mbeya	Mbeya	485.6	Protection	Current	Yes	No
18	Essimingor	Natural FR	Arusha	Monduli	6,070.0	Protection	Current	Yes	No
19	Haraa	Natural FR	Manyara	Babati	626.0	Protection	Current	Yes	No
20	Igombe River	Natural FR	Tabora	Uyui, Kaliua and Nzega	247,344.0	Protection	Current	No	No
21	Ikoho/Ihoho	Natural FR	Mbeya	Mbeya	1,416.4	Protection	Current	Yes	No
22	Ikwaba	Natural FR	Morogoro	Gairo	937.3	Protection	Current	No	No
23	Inyonga/Nyonga	Natural FR	Tabora	Sikonge	578,603.3	Both protection and production	Current	Yes	Yes
24	Isalalo	Natural FR	Songwe	Mbozi	11,552.0	Protection	Current	Yes	No
25	Isalalolunga	Natural FR	Songwe	Momba	35,340.0	Protection	Current	Yes	No
26	Iwonde	Natural FR	Morogoro	Kilombero	14,748.4	Protection	Current	No	No
27	Kabulo	Natural FR	Mbeya	Ileje	3,918.0	Both protection and production	Current	Yes	No
28	Kanga	Natural FR	Morogoro	Mvomero	11,040.0	Protection	Current	No	No
29	Kihiriri	Natural FR	Morogoro	Kilosa	208.0	Protection	Current	No	No
30	Kikale	Natural FR	Pwani	Kibiti	999.6	Protection	Current	Yes	No
31	Kimboza	Natural FR	Morogoro	Morogoro	405.0	Protection	Current	No	No
32	Kindoroko	Natural FR	Kilimanjaro	Mwanga	2,186.0	Protection	Current	Yes	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
33	Kipiki	Natural FR	Ruvuma	Namtumbo	63,850.0	Protection	Current	Yes	No
34	Kitapilimwa	Natural FR	Iringa	Iringa	3,697.0	Production	Current	Yes	No
35	Kitope	Natural FR	Lindi	Kilwa	36,737.0	Production	Current	Yes	No
36	Kome	Natural FR	Mwanza	Sengerema	2,487.1	Protection	Current	Yes	No
37	Ligamba	Natural FR	Morogoro	Malinyi	15.8	Protection	Current	No	No
38	Lionja	Natural FR	Mtwara	Nachingwea	28,490.8	Production	Current	Yes	Yes
39	Liwili/kiteza	Natural FR	Ruvuma	Mbinga	1,020.0	Both protection and production	Current	Yes	No
40	Madenge	Natural FR	Njombe	Ludewa	1,146.0	Protection	Current	No	No
41	Mafwomero	Natural FR	Dodoma	Mpwapwa	3,237.0	Protection	Current	Yes	No
42	Malehi	Natural FR	Lindi	Kilwa	38,850.0	Production	Current	Yes	No
43	Mamiwa Kisara North	Natural FR	Morogoro	Gairo	8,203.0	Protection	Current	No	No
44	Mang'aliza (Mangalisa)	Natural FR	Dodoma	Mpwapwa	4,988.0	Protection	Current	Yes	No
45	Masagati	Natural FR	Morogoro	Kilombero	6,475.0	Protection	Current	Yes	No
46	Matapwa	Natural FR	Lindi	Lindi	16,493.0	Production	Current	Yes	No
47	Matogoro East	Natural FR	Ruvuma	Songea	7,457.2	Protection	Current	Yes	No
48	Matogoro West	Natural FR	Ruvuma	Songea	100.0	Protection	Current	Yes	No
49	Mbangala	Natural FR	Mtwara	Masasi and Nanyumbu	28,490.0	Protection	Current	Yes	No
50	Mbeya Range	Natural FR	Mbeya	Mbeya	15,588.6	Protection	Current	Yes	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
51	Mbiwe	Natural FR	Songwe	Songwe and Chunya	49,147.0	Protection	Current	Yes	No
52	Mitarule	Natural FR	Lindi	Kilwa	60,484.0	Both protection and production	Current	Yes	No
53	Mitundumbeya	Natural FR	Lindi	Kilwa	8,547.0	Protection	Current	Yes	No
54	Mkulazi	Natural FR	Morogoro	Morogoro	68,625.0	Protection	Current	Yes	No
55	Mlali	Natural FR	Dodoma	Kongwa	7,812.6	Protection	Current	Yes	No
56	Mount Monduli	Natural FR	Arusha	Monduli	8,900.0	Protection	Current	No	No
57	Mpanda Line	Natural FR	Tabora	Kaliua	427,348.0	Production	Current	Yes	Yes
58	Mpanda North East	Natural FR	Katavi	Mpanda, Mlele and Nsimbo	502,458.0	Production	Current	Yes	Yes
59	Msaginia	Natural FR	Katavi	Mpanda and Nsimbo	85,210.6	Production	Current	Yes	Yes
60	Mselezi	Natural FR	Morogoro	Ulanga	770.5	Protection	Current	Yes	No
61	Muhuwesi	Natural FR	Ruvuma	Tunduru	194,000.0	Production	Current	Yes	No
62	Mulele Hill	Natural FR	Katavi	Mpanda, Mlele and Nsimbo	513,311.0	Production	Current	Yes	Yes
63	Nawenge	Natural FR	Morogoro	Ulanga	575.8	Protection	Current	No	No
64	Ndechela	Natural FR	Mtwara	Nanyumbu	6,216.0	Protection	Current	Yes	No
65	Ngarama North	Natural FR	Lindi	Kilwa	39,629.0	Production	Current	Yes	No
66	Ngarama South	Natural FR	Lindi	Kilwa	2,078.0	Production	Current	Yes	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
67	Nindo	Natural FR	Shinyanga	Shinyanga	27,446.0	Production	Current	No	No
68	North Makere	Natural FR	Kigoma	Kasulu	78,995.0	Both protection and production	Current	Yes	Yes
69	Nou	Natural FR	Manyara	Babati	13,520.0	Protection	Current	Yes	No
70	Nyahua Mbuga	Natural FR	Tabora	Sikonge	679,871.0	Both protection and production	Current	Yes	Yes
71	Nyandiduma	Natural FR	Morogoro	Mvomero	47.8	Protection	Current	Yes	No
72	Nyanganje	Natural FR	Morogoro	Kilombero	14,895.6	Protection	Current	No	No
73	Nyera/Kiperere	Natural FR	Lindi	Liwale	80,423.0	Both protection and production	Current	Yes	No
74	Pugu	Natural FR	Pwani	Kisarawe	2,410.0	Protection	Current	No	No
75	Rau	Natural FR	Kilimanjaro	Moshi	1,426.9	Protection	Current	Yes	No
76	Ruhekei	Natural FR	Ruvuma	Nyasa	3,308.0	Protection	Current	Yes	No
77	Rungo	Natural FR	Lindi	Kilwa	22,586.0	Production	Current	No	No
78	Rungwa River	Natural FR	Katavi	Mlele	401,448.2	Both protection and production	Current	Yes	Yes
79	Ruvu South	Natural FR	Pwani	Kisarawe	30,633.0	Protection	Current	No	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
80	Salanga	Natural FR	Dodoma	Kondoa	8,336.6	Protection	Current	Yes	No
81	Sayaka	Natural FR	Mwanza	Magu	5,421.0	Protection	Current	Yes	No
82	Shikurufumi	Natural FR	Morogoro	Mvomero	259.8	Protection	Current	Yes	No
83	Songea fuel	Natural FR	Ruvuma	Songea	5,180.0	Both protection and production	Current	Yes	No
84	South Makere	Natural FR	Kigoma	Kasulu	65,265.7	Both protection and production	Current	Yes	No
85	Talagwe/Italagwe	Natural FR	Morogoro	Gairo	1,778.0	Protection	Current	No	No
86	Tong'omba	Natural FR	Lindi	Kilwa	20,558.9	Protection	Current	Yes	No
87	Ufiome	Natural FR	Manyara	Babati	4,848.0	Protection	Current	Yes	No
88	Ugalla River	Natural FR	Katavi	Mlele	427,348.0	Production	Current	Yes	Yes
89	Ugalla North	Natural FR	Tabora	Urambo and Kaliua	163,482.4	Production	Current	Yes	Yes
90	Ukwiva	Natural FR	Morogoro	Kilosa	78,780.0	Protection	Current	No	No
91	Uvinza	Natural FR	Kigoma	Uvinza	16,835.0	Both protection and production	Current	Yes	Yes
92	Uyui Kigwa Rubuga	Natural FR	Tabora	Uyui	135,197.0	Production	Current	No	No
93	Vikindu	Natural FR	Pwani	Mkuranga	1,710.0	Protection	Current	Yes	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
94	Vugiri	Natural FR	Tanga	Korogwe	40.5	Protection	Current	Yes	No
95	Wotta	Natural FR	Dodoma	Mpwapwa	2,530.0	Protection	Current	Yes	No
96	Amani	Nature FR	Tanga	Muheza	8,380.0	Protection	Current	No	No
97	Chome	Nature FR	Kilimanjaro	Same	14,283.0	Protection	Current	No	No
98	Itulu Hill	Nature FR	Tabora	Sikonge	388,512.4	Protection	Current	Yes	No
99	Kalambo	Nature FR	Rukwa	Kalambo	41,958.0	Protection	Current	No	No
100	Kilombero	Nature FR	Iringa	Kilolo	134,511.0	Protection	Current	Yes	No
101	Magamba	Nature FR	Tanga	Lushoto	9,283.0	Protection	Current	No	No
102	Minziro	Nature FR	Kagera	Missenyi	25,717.0	Protection	Current	No	No
103	Mkingu	Nature FR	Morogoro	Mvomero	26,433.0	Protection	Current	No	No
104	Mount Hanang	Nature FR	Manyara	Hanang	5,871.0	Protection	Current	Yes	No
105	Nilo	Nature FR	Tanga	Korogwe and Muheza and Mkinga	6,025.0	Protection	Current	No	No
106	Pindiro	Nature FR	Lindi	Kilwa	12,249.0	Protection	Current	Yes	No
107	Rondo	Nature FR	Lindi	Lindi	11,742.0	Protection	Current	Yes	No
108	Rungwe	Nature FR	Mbeya	Rungwe	24,233.0	Protection	Current	No	No
109	Uluguru	Nature FR	Morogoro	Morogoro	24,115.0	Protection	Current	No	No
110	Uzungwa scarp	Nature FR	Iringa	Mufindi	32,763.0	Protection	Current	No	No
111	Wino	Plantation FR	Rukwa	Sumbawanga	17,038.0	Production	Current	Yes	No
112	Buhindi	Plantation FR	Mwanza	Sengerema	21,880.0	Both protection and production	Outdated	Yes	Yes

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
113	Korogwe fuelwood	Plantation FR	Tanga	Korogwe	10,227.0	Production	Current	Yes	No
114	Longuza	Plantation FR	Tanga	Muheza	3,511.0	Production	Current	Yes	No
115	Meru USA	Plantation FR	Arusha	Meru and Arumeru	8,170.0	Production	Current	Yes	No
116	Morogoro fuelwood	Plantation FR	Morogoro	Morogoro	12,950.0	Production	Current	No	No
117	Mtibwa/Pagale Teak	Plantation FR	Morogoro	Mvomero	16,065.0	Production	Current	No	No
118	North Kilimanjaro	Plantation FR	Kilimanjaro	Rombo	8,069.0	Production	Current	Yes	No
119	Rubare/Nindo	Plantation FR	Kagera	Bukoba	6,374.0	Both protection and production	Outdated	Yes	Yes
120	Rubya	Plantation FR	Mwanza	Ukerewe	24,887.0	Production	Outdated	Yes	No
121	Ruvu North fuelwood	Plantation FR	Pwani	Kibaha	31,930.0	Production	Current	No	No
122	Shume	Plantation FR	Tanga	Lushoto	4,303.0	Production	Current	Yes	No
123	Ukaguru	Plantation FR	Morogoro	Gairo	3,087.0	Production	Current	Yes	No
124	West Kilimanjaro	Plantation FR	Kilimanjaro	Siha	7,632.0	Production	Current	Yes	No
				Total	***6,560,205.9***				

Appendix 39: List of ungazetted NFRs

SN	Forest name	Status	Zone	Region	District	Size (ha)
1	Mlola	FR	Eastern	Pwani	Mafia	2,596.0
2	Mkelezange (Marenda)	FR	Eastern	Pwani	Mkuranga	389.9
3	Kinyerezi	FR	Eastern	Dar es Salaam	Ilala	4.1
4	Magoto	FR	Eastern	Morogoro	Mvomero	709.0
5	Dunduma	FR	Eastern	Morogoro	Mvomero	52.6
6	Kitemele	FR	Southern Highlands	Iringa	Kilolo	273.0
7	Kawemba	FR	Southern Highlands	Iringa	Kilolo	69.0
8	Lufuna	FR	Southern Highlands	Iringa	Mufindi	47.0
9	Litipo	FR	Southern	Lindi	Lindi	1,037.0
10	Nangaule	FR	Southern	Lindi	Lindi	650.0
11	Nyangedi	FR	Southern	Lindi	Lindi	4,541.0
12	Membe	FR	Southern Highlands	Mbeya	Ileje	2,345.0
13	Kyosa	FR	Southern Highlands	Mbeya	Ileje	957.0
14	Iyovwa	FR	Southern Highlands	Mbeya	Ileje	840.0
15	Shinji	FR	Southern Highlands	Mbeya	Ileje	3,267.0
16	Itale	FR	Southern Highlands	Mbeya	Ileje	2,577.0
17	Iyumba	FR	Southern Highlands	Mbeya	Ileje	109.0
18	Ilembo Usafwa	FR	Southern Highlands	Mbeya	Mbalali	18,778.0
19	Isaka	FR	Southern Highlands	Mbeya	Rungwe	341.0
20	Makonde Scarp I and II	FR	Southern	Mtwara	Newala and Masasi	1,748.3
21	Makonde Scarp III	FR	Southern	Mtwara	Tandahimba	3,140.7
22	Kipiki	FR	Southern	Ruvuma	Namtumbo	63,850.0
23	Itengu	FR	Southern Highlands	Songwe	Chunya	545.0
24	Kipembawe	BR	Southern Highlands	Songwe	Chunya	21,791.7
25	Mtande	FR	Southern Highlands	Songwe	Chunya	258.0
26	Isalalolunga	FR	Southern Highlands	Songwe	Momba	35,340.0
27	Litenga	FR	Southern	Ruvuma	Songea	4,795.0
28	South Matogoro	FR	Southern	Ruvuma	Songea	6,755.7
29	Iyondo Mswima	FR	Southern Highlands	Mbeya	Ileje	12,053.0
30	Mpepo	FR	Southern	Ruvuma	Nyasa	3,905.0
31	Ugalla North	FR	Western	Tabora	Urambo and Kaliua	163,482.4
32	Simbo	FR	Western	Tabora	Uyui	324.0
33	Kyarano	FR	Lake	Mara	Butiama	175.0

SN	Forest name	Status	Zone	Region	District	Size (ha)
34	Ruasina (Mlema-Kiga Ruasina)	FR	Lake	Kagera	Missenyi and Bukoba	4,598.1
35	Irangi Scarp	FR	Central	Dodoma	Kondoa	13,741.0
36	Maganze mzaree	BR	Central	Dodoma	Chemba	1,275.3
37	Songolo	BR	Central	Dodoma	Chemba	1,056.0
38	Mialo kwamtoro	BR	Central	Dodoma	Chemba	607.6
39	Lebba Jumbe	BR	Central	Dodoma	Chemba	1,368.3
40	Mlimasimu	FR	Central	Manyara	Kiteto	1,657.0
41	Usa Springs	FR	Northern	Arusha	Arumeru	51.4
42	Kamwalla I	FR	Northern	Kilimanjaro	Mwanga	119.0
43	Kamwenda	FR	Northern	Kilimanjaro	Same	583.0
44	Mwalla	FR	Northern	Kilimanjaro	Same	583.0
45	Shambalai	FR	Northern	Tanga	Lushoto	21.0
46	Ndasha Hill	FR	Northern	Tanga	Lushoto	1,156.0
47	Korogwe Hill	FR	Northern	Tanga	Korogwe	146.0
48	Bombo East I	FR	Northern	Tanga	Mkinga	448.0
49	Mlungui	FR	Northern	Tanga	Mkinga	200.0
50	Kang'ata	BR	Northern	Tanga	Handeni	1,439.2
51	Kwamba	BR	Northern	Tanga	Handeni	61.0
52	Kwenyunga Magiri	BR	Northern	Tanga	Handeni	138.5
53	Kwedikwazu manzuki	BR	Northern	Tanga	Handeni	25.7
54	Sambu	BR	Northern	Tanga	Handeni	567.7
55	Mheza	BR	Northern	Tanga	Kilindi	2,014.0
56	Buhigwe (Munzeze)	FR	Western	Kigoma	Buhigwe	426.0
Total						***390,029.2***

Appendix 40: List of LAFRs with forest management plans

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
1	Bagai	Natural FR	Tanga	Lushoto	578.0	Protection	Outdated	Yes	No
2	Bombo Makole	Natural FR	Tanga	Lushoto	420.0	Protection	Outdated	Yes	No
3	Buyange	Natural FR	Shinyanga	Shinyanga	346.8	Protection	Outdated	No	No
4	Buyoga Hill	Natural FR	Shinyanga	Shinyanga	27.2	Protection	Outdated	No	No
5	Goweko	Natural FR	Tabora	Sikonge	41,600.0	Production	Outdated	No	No
6	Kitara Ridge	Natural FR	Tanga	Lushoto	388.0	Protection	Outdated	Yes	No
7	Kwebago	Natural FR	Tanga	Bumbuli	1,500.0	Protection	Outdated	Yes	No
8	Kwenyashu	Natural FR	Tanga	Bumbuli	1,620.0	Protection	Outdated	Yes	No
9	Kwizu	Natural FR	Kilimanjaro	Same	661.1	Protection	Outdated	No	No
10	Lyambalya - mbamfipa	Natural FR	Rukwa	Sumbawanga	24,000.0	Production	Outdated	No	No
11	Makaranga	Natural FR	Lindi	Lindi	1,052.0	Protection and production	Outdated	Yes	No
12	Manongho	Natural FR	Shinyanga	Shinyanga	409.2	Protection	Outdated	No	No
13	Mpembampazi	Natural FR	Tabora	Sikonge	134,679.0	Production	Current	No	Yes
14	Mtumbi	Natural FR	Tanga	Lushoto	261.0	Protection	Outdated	Yes	No
15	Mwangilye Hill	Natural FR	Shinyanga	Shinyanga	39.4	Protection	Outdated	No	No
16	Mwatunge Hill	Natural FR	Shinyanga	Shinyanga	38.4	Protection	Outdated	No	No
17	Mwenigo- mbelo	Natural FR	Tanga	Bumbuli	1,030.0	Protection	Outdated	Yes	No
18	Nkamba	Natural FR	Katavi	Mpanda	99,264.5	Production	Current	Yes	Yes
19	Nyamilanga Hill	Natural FR	Shinyanga	Shinyanga	43.2	Protection	Outdated	No	No

SN	Forest name	Category	Region	District	Size (ha)	Management objective	Status of forest management plan	Used forest inventory data	Presence of harvesting plan
20	Rukunda-Kachambi	Natural FR	Kigoma	Uvinza	3,525.0	Protection and production	Outdated	No	No
21	Sikonge	Natural FR	Tabora	Sikonge	56,979.7	Protection	Outdated	No	No
22	Tongwe Mashariki	Natural FR	Katavi	Mpanda	168,415.2	Production	Current	Yes	Yes
23	Unyambiu North	Natural FR	Tabora	Igunga	9,842.0	Protection and production	Outdated	No	No
24	Vumari	Natural FR	Kilimanjaro	Same	1,574.0	Protection	Outdated	No	No
25	Walla river	Natural FR	Tabora	Sikonge	160,579.3	Production	Outdated	No	No
				Total	***708,872.9***				

Appendix 41: List of ungazetted LAFRs

SN	Forest name	Zone	Region	District	Forest area (ha)
1	Kichi Hill	Eastern zone	Pwani	Rufiji	14,323.0
2	Zingiziwa	Eastern zone	Dar es Salaam	Ilala	100.4
3	Magubike North	Eastern zone	Morogoro	Kilosa	9,599.0
4	Magubike South	Eastern zone	Morogoro	Kilosa	15,055.0
5	Mbuzi	Southern Highlands	Rukwa	Nkasi	2,969.2
6	Katulyange	Southern Highlands	Rukwa	Nkasi	515.4
7	Mfili	Southern Highlands	Rukwa	Nkasi	2,525.7
8	Ilima	Southern Highlands	Mbeya	Rungwe	65.0
9	Kyejo	Southern Highlands	Mbeya	Rungwe	696.4
10	Masukulu	Southern Highlands	Mbeya	Rungwe	589.5
11	Lyambalya-mbamfipa	Southern Highlands	Rukwa	Sumbawanga	24,000.0
12	Nakalulu	Southern Highlands	Mbeya	Ileje	112.0
13	Nalupembe	Southern Highlands	Mbeya	Ileje	126.0
14	Namku- mbukwa	Southern Highlands	Mbeya	Ileje	150.0
15	Buba	Southern Highlands	Mbeya	Ileje	1,116.0
16	Ndengele	Southern	Ruvuma	Nyasa	2,466.0
17	Nyangamara	Southern	Lindi	Lindi	9,200.0
18	Ipuji	Southern highlands	Njombe	Makete	739.0
19	Induku	Southern Highlands	Njombe	Makete	3,539.0
20	Kitonga Kihulula	Southern Highlands	Iringa	Kilolo	9,670.0
21	Chandamali	Southern	Ruvuma	Songea	70.0
22	Kwalikucha	Southern	Ruvuma	Songea	33.0
23	Liumbu	Southern	Ruvuma	Songea	66.8
24	Namanyigu	Southern	Ruvuma	Songea	12.4
25	Unangwa	Southern	Ruvuma	Songea	50.0
26	Suguti	Lake	Mara	Musoma	281.9
27	Bisumwa	Lake	Mara	Butiama	200.0
28	Magana	Lake	Mara	Butiama	1,448.0
29	Malambo	Lake	Simiyu	Bariadi	29.0
30	Ikowa (chamheme)	Central	Dodoma	Chamwino	3,785.0
31	Senkenke	Central	Singida	Iramba	30,365.0
32	Mwenigombelo	Northern	Tanga	Bumbuli	1,030.0
33	Kwenyashu	Northern	Tanga	Bumbuli	1,620.0

34	Kiva Hill	Northern	Tanga	Handeni	391.0
35	Mount Gitu	Northern	Tanga	Kilindi	280.0
36	Sangeni	Northern	Tanga	Kilindi	1,250.0
37	Mbalu	Northern	Tanga	Kilindi	498.0
38	Mount Vuju	Northern	Tanga	Kilindi	550.6
39	Mduguyu	Northern	Tanga	Kilindi	425.0
40	Langoni	Northern	Tanga	Pangani	70.0
41	Mleni	Northern	Tanga	Tanga	65.5
42	Half mile strip	Northern	Kilimanjaro	Rombo	1,180.0
43	Mapogoro	Southern Highlands	Mbeya	Ileje	99.0
44	Itinginya	Southern Highlands	Mbeya	Ileje	286.0
45	Pimbi	Southern Highlands	Mbeya	Ileje	785.0
46	Haraka	Southern Highlands	Mbeya	Ileje	18.0
47	Iyuli	Southern Highlands	Mbeya	Ileje	192.0
48	Ndoka	Southern Highlands	Mbeya	Ileje	3,106.0
49	Ishenta	Southern Highlands	Mbeya	Ileje	21.0
50	Kalembo/Halembo	Southern Highlands	Mbeya	Ileje	264.0
				Total	***146,028.7***

Appendix 42: List of unreserved forests with potential to be reserved forests

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
1	No specific name	Eastern	Pwani	Bagamoyo	Village land	Pongwe msungura	2,000.0	Medium	Medium	Good condition	NFR
2	No specific name	Eastern	Pwani	Bagamoyo	Village land	Mkoko	1,500.0	Medium	Medium	Good condition	NFR
3	No specific name	Eastern	Pwani	Bagamoyo	Village land	Mandela	3,000.0	Medium	Medium	Good condition	NFR
4	No specific name	Eastern	Pwani	Bagamoyo	Village land	Kibindu	1,200.0	Medium	Medium	Good condition	NFR
5	No specific name	Eastern	Pwani	Bagamoyo	Village land	Mkange	3,000.0	Medium	Medium	Good condition	NFR
6	No specific name	Eastern	Pwani	Bagamoyo	Village land	Kweikonje	2,000.0	Medium	Medium	Good condition	NFR
7	No specific name	Eastern	Pwani	Bagamoyo	Village land	Kwang'andu	1,500.0	Medium	Medium	Good condition	NFR
8	No specific name	Eastern	Morogoro	Malinyi	Village land	Sofi	9,000.0	High	High	Good condition	NFR
9	Warm water spring	Eastern	Pwani	Rufiji	Not clear	NA	197.0	High	Medium	Good condition	NFR
10	Kwaruhombo	Eastern	Pwani	Bagamoyo	Village land	Kwaru- hombo	1,348.0	High	High	Good condition	NFR
11	No specific name (Northern side of Kihirili FR)	Eastern	Morogoro	Kilosa	Village land	Kilosa town	> 1500	High	Medium	Slightly degraded	NFR
12	No specific name (Sourthern side of Kihirili FR)	Eastern	Morogoro	Kilosa	Village land	Kipekenya, Chabima, Dodoma-Isanga	> 2000	High	Medium	Good condition	NFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
13	Ludewa	Southern highlands	Mbeya	Ludewa	Unreserved/ General land	Nindi, Ntumbati, Mbwila, Luana, Muhoro, Lifuma, Kilondo, Lumbila, Makonde, Mawengi, Kitewaka, Madunda, Kiwe and Lutilili	Not estimated	Very high	Medium	Good condition	NFR/ VLFR
14	Ching'ambo/ Lyambalaufipa escarpment	Southern highlands	Songwe	Momba	Unreserved/ General land	Ching'ambo Forest ni Makamba, Naming'ong'o, Chuo, Mnyuzi, Ikana, Nyenjele, Machindo, Nakawale, Mfuto, Mengo, Isanga, Msangano, Chiwanda, Namtambalala, Kaonga, Myunga, Namsinde Il na Ndalambo	Not estimated	Very high	Medium	Good condition	NFR/ VLFR
15	Sante General Land	Southern highlands	Songwe	Momba	Unreserved/ General land	Mkomba ward, Utambalila, Ntungwa, Mkomba, Sante, and Chole villages	Not estimated	Very high	Medium	Good condition	NFR/ VLFR
16	General Land in Songwe	Southern highlands	Songwe	Songwe	Unreserved/ General land	Mbangala, Kapalala, Ngwala, and Gua villages	Not estimated	medium	Medium	Good condition	NFR/ VLFR
17	Bitimanyanga General Land	Southern highlands	Songwe	Chunya	Unreserved/ General land	North –Kambikatoto village; South-Mafyeko village	36,123.60	medium	Medium	Good condition	NFR/ VLFR
18	Kambikatoto General Land	Southern highlands	Songwe	Chunya	Unreserved/ General land		108,425.10	medium	Medium	Good condition	NFR/ VLFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
19	Lola/Nkwangu General Land	Southern highlands	Songwe	Chunya	Unreserved/ General land	East –Upendo village; North East-Mamba village; North –Majengo;	8,692.00	medium	Medium	Good condition	NFR/ VLFR
20	Lualaje	Southern highlands	Songwe	Chunya	Unreserved/ General land	North –Mafyeko village; West-Mtanira village; and South-Mapogoro village	10,020.00	low	Medium	Good condition	NFR/ VLFR
21	Mafyeko	Southern highlands	Songwe	Chunya	Unreserved/ General land	North-Bitimanyanga village; South- Ilindi village	71,241.00	low	Medium	Good condition	NFR/ VLFR
22	Nkung'ungu	Southern highlands	Songwe	Chunya	Unreserved/ General land		10,420.00	low	Medium	Good condition	NFR/ VLFR
23	Tandahimba	Southern	Mtwara	Tandahi-mba	Unreserved/ General land	Along Ruvuma river Lipalwe, Chiumo, Maundo, Mchichira and Matombo Village. These areas are situated near Ruvuma river. Challenges is that most of these area have been forested and being transformed in tocashewnut farms	Not estimated	High	Medium	Good condition	NFR/ VLFR
24	Tunduru	Southern	Ruvuma	Tunduru	Unreserved/ General land	Chikomo, Lukala, Chinunje, Mkandu, Liwangula, Mkowela, Nampungu, kajima, Ngapa, and Nasomba	Not estimated	High	Medium	Good condition	NFR/ VLFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
25	Ruangwa	Southern	Lindi	Ruangwa	Unreserved/ General land	Nanguruagai, Machang'anja, and Nanjaru	Not estimated	Low	Medium	Good condition	NFR/ VLFR
26	Masasi	Southern	Mtwara	Masasi	Unreserved/ General land	Sindano, Msikisi, Namalembo, Lichehe, Mitonji, Chiwata, and Mpindimbi	Not estimated	low	Medium	Good condition	NFR/ VLFR
27	Mbalrali	Southern	Mbeya	Mbarali	Unreserved/ General land	Mlungu, Ibelege, Muungano, Igava, Mawindi, Matemela, Lwangu, Ipitingi, Kangaga	Not estimated	low	Medium	Good condition	NFR/ VLFR
28	Liwale	Southern	Lindi	Liwale	Unreserved/ General land	Kikole and Msimba village	Not estimated	low	Medium	Good condition	NFR/ VLFR
29	Lindi	Southern	Lindi	Lindi	Unreserved/ General land	Mandiwa, Mbawala, Mkangambili, Naukauka Villages	Not estimated	low	Medium	Good condition	NFR/ VLFR
31	Mang'aliza mountain ranges (comprises the following hills Kambakwe, Kinzase, Kikuyu, Chamolutse, and Nyalumba)	Central	Dodoma	Mpwapwa	Village Land	Sorrounding by several villages	Not estimated	Medium	Medium	Good condition	NFR/ VLFR
32	Traditional forests - Bukulu and Sowera	Central	Dodoma	Kondoa	Community Land	Bukulu and Sowera	Not estimated	High	Medium	Good condition	NFR/ VLFR
33	Proposed NFRs in Hika, Mtumbi, Sukamaela, and Rondo villages	Central	Singida	Manyoni	Village Land	Hiki, Mtumbi, Sukamaela and Rondo	Not estimated	High	Medium	Good condition	NFR/ VLFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
34	Namalulu and Naberela	Central	Manyara	Simanjiro	Village Land	Namalulu and Naberela	Not estimated	High	Medium	Good condition	NFR/ VLFR
35	Orpeleta and Leguruk	Nothern	Arusha	Longido	Village Land	Leguruk and orpeleta	Not estimated	High	Medium	Good condition	NFR/ VLFR
36	Kambi ya simba	Nothern	Arusha	Karatu	Village Land	Kambi ya simba	Not estimated	High	Medium	Good condition	NFR/ VLFR
37	Forest under Tea estate	Nothern	Tanga	Korogwe	Ambangulu Tea estate	Not known	Not estimated	High	Medium	Good condition	NFR/ VLFR
38	Sarian	Nothern	Arusha	Ngoro-ngoro	Village Land	Sarian	Not estimated	High	Medium	Good condition	NFR/ VLFR
39	Bulenga	Lake Zone	Geita	Bukombe	Village Land	Bulenga	Not estimated	Medium	High	Good condition	NFR/ VLFR
40	Ikuzi	Lake Zone	Geita	Bukombe	Village Land	Ikuzi	Not estimated	Medium	High	Good condition	NFR/ VLFR
41	Iyogelo	Lake Zone	Geita	Bukombe	Village Land	Iyogelo	Not estimated	Medium	High	Good condition	NFR/ VLFR
42	Kabagole	Lake Zone	Geita	Bukombe	Village Land	Kabagole	Not estimated	Medium	Medium	Good condition	NFR/ VLFR
43	Kayenzo	Lake Zone	Geita	Bukombe	Village Land	Kayenzo	Not estimated	Medium	Medium	Good condition	NFR/ VLFR
44	Kidete	Lake Zone	Geita	Bukombe	Village Land	Kidete	Not estimated	Low	Medium	Good condition	NFR/ VLFR
45	Nampalahale	Lake Zone	Geita	Bukombe	Village Land	Nampalahale	Not estimated	Medium	Medium	Good condition	NFR/ VLFR
46	Ibanda	Lake Zone	Geita	Geita	Village Land	Ibanda	Not estimated	Medium	No	Good condition	NFR/ VLFR
47	Kabugozo	Lake Zone	Geita	Geita	Village Land	Kabugozo	Not estimated	High	Low	Good condition	NFR/ VLFR
48	Msasa	Lake Zone	Geita	Geita	Village Land	Msasa	Not estimated	Medium	No	Good condition	NFR/ VLFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
49	Nyakaswi	Lake Zone	Geita	Geita	Village Land	Nyakaswi	Not estimated	Medium	No	Good condition	NFR/ VLFR
50	Izimbya	Lake Zone	Kagera	Bukoba	Village Land	Izimbya	Not estimated	Medium	Low	Good condition	NFR/ VLFR
51	Kibirizi	Lake Zone	Kagera	Bukoba	Village Land	Kibirizi	Not estimated	Medium	Low	Good condition	NFR/ VLFR
52	Kyamlaile	Lake Zone	Kagera	Bukoba	Village Land	Kyamlaile	Not estimated	Medium	Low	Good condition	NFR/ VLFR
53	Ombweha	Lake Zone	Kagera	Bukoba	Village Land	Ombweha	Not estimated	Medium	Low	Good condition	NFR/ VLFR
54	Isingiro	Lake Zone	Kagera	Kyerwa	Village Land	Isingiro	Not estimated	High	Low	Good condition	NFR/ VLFR
55	Kumbuga	Lake Zone	Kagera	Ngara	Village Land	Kumbuga	Not estimated	Medium	Low	Good condition	NFR/ VLFR
56	Marsagamba	Lake Zone	Kagera	Ngara	Village Land	Marsagamba	Not estimated	Medium	Low	Good condition	NFR/ VLFR
57	Mulabanga	Lake Zone	Kagera	Ngara	Village Land	Mulabanga	Not estimated	Medium	Low	Good condition	NFR/ VLFR
58	Majimoto	Lake Zone	Mara	Serengeti	Village Land	Majimoto	Not estimated	High	High	Good condition	NFR/ VLFR
59	Motukeri	Lake Zone	Mara	Serengeti	Village Land	Motukeri	Not estimated	High	High	Good condition	NFR/ VLFR
60	Nyamakobiti	Lake Zone	Mara	Serengeti	Village Land	Nyamakobiti	Not estimated	High	High	Good condition	NFR/ VLFR
61	Mwandole	Lake Zone	Mwanza	Kwimba	Village Land	Kilyoboya	Not estimated	Medium	Low	Good condition	NFR/ VLFR
62	Nyamilama	Lake Zone	Mwanza	Kwimba	Village Land	Nyamilama	Not estimated	Medium	Low	Good condition	NFR/ VLFR
63	Ngasamo	Lake Zone	Simiyu	Busega	Village Land	Ngasamo	Not estimated	Medium	No	Good condition	NFR/ VLFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
64	Nyatwali	Lake Zone	Simiyu	Busega	Village Land	Nyatwali	Not estimated	No	High	Good condition	NFR/ VLFR
65	Sibwesa	Western Zone	Katavi	Tanga-nyika	Village Land	Sibwesa	Not estimated	High	Medium	Good condition	NFR/ VLFR
66	Mnyengela	Western Zone	Kigoma	Buhigwe	Village Land	Mnyengela	Not estimated	Medium	Low	Good condition	NFR/ VLFR
67	Kazuramimba	Western Zone	Kigoma	Uvinza	Village Land	Kazuramimba	Not estimated	Low	High	Good condition	NFR/ VLFR
68	Lufubu	Western Zone	Kigoma	Uvinza	Village Land	Lufubu	Not estimated	Medium	Low	Good condition	NFR/ VLFR
69	Rukoma	Western Zone	Kigoma	Uvinza	Village Land	Rukoma	Not estimated	Medium	Low	Good condition	NFR/ VLFR
70	Chela	Western Zone	Shinyanga	Msalala	Village Land	Chela	Not estimated	Medium	Low	Good condition	NFR/ VLFR
71	Mhandu	Western Zone	Shinyanga	Msalala	Village Land	Mhandu	Not estimated	Medium	Low	Good condition	NFR/ VLFR
72	Mhandu	Western Zone	Shinyanga	Msalala	Village Land	Mhandu	Not estimated	Medium	Low	Good condition	NFR/ VLFR
73	Mwazimba	Western Zone	Shinyanga	Msalala	Village Land	Mwazimba	Not estimated	Medium	Low	Good condition	NFR/ VLFR
74	Wisolele	Western Zone	Shinyanga	Msalala	Village Land	Wisolele	Not estimated	Medium	Low	Good condition	NFR/ VLFR
75	Kapumpa	Western Zone	Tabora	Sikonge	Village Land	Kapumpa	Not estimated	No	High	Good condition	NFR/ VLFR
76	Majojoro	Western Zone	Tabora	Sikonge	Village Land	Majojoro	Not estimated	Low	High	Good condition	NFR/ VLFR
77	Mwitikio	Western Zone	Tabora	Sikonge	Village Land	Mwitikio	Not estimated	Low	High	Good condition	NFR/ VLFR
78	Ifuta	Western Zone	Tabora	Urambo	Village Land	Ifuta	Not estimated	Medium	Low	Good condition	NFR/ VLFR

SN	Forest name	Zone	Region	District	Ownership	Neighboring village or covering the area	Size (ha)	Catchment value	Biodiversity value	General forest condition	New status
79	Kasisi	Western Zone	Tabora	Urambo	Village Land	Kasisi	Not estimated	Medium	Low	Good condition	NFR/ VLFR
80	Songambele	Western Zone	Tabora	Urambo	Village Land	Songambele	Not estimated	Medium	Low	Good condition	NFR/ VLFR
81	Tumaini	Western Zone	Tabora	Urambo	Village Land	Tumaini	Not estimated	Medium	Low	Good condition	NFR/ VLFR
82	Katunda	Western Zone	Tabora	Uyui	Village Land	Katunda	Not estimated	Medium	Low	Good condition	NFR/ VLFR

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