Publication Draft

REPUBLIC OF ZAMBIA

MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

KATETE NATIONAL FOREST (P12)

MANAGEMENT PLAN

2024-2034

APPROVAL PAGE

KATETE NATIONAL FOREST No. P12 - FOREST MANAGEMENT PLAN

Notice of completion

This Forest Management Plan has been prepared in accordance with the requirements of section 40, Part IV of the Forests Act, 2015. National and local enquiries were conducted as required to obtain representation from the local community, Chief and other stakeholders in the prescribed manner. Further, consultations were conducted with holders of rights and the local community in the area and account taken of their submissions.

In accordance with section 43 of the Forests Act, 2015, I therefore cause notice of completion to be published in the Gazette.

Director of Forestry

Date:_____

Registration of the Forest Management Plan

Following receipt of notification from the Director of Forestry, that the Forest Management Plan has been notified in the Government Gazette in accordance with the provisions of section 43 of the Forests Act, 2015, I therefore cause this Forest Management Plan to be registered and approve a notice of registration to be published in the Government Gazette.

Minister for Green Economy and Environment

Date:_____

FORESTRY DEPARTMENT

FOREWORD

Forests provide essential functions and services to the local community and the country at large, conserving and protecting biodiversity, social and livelihood wellbeing. Zambia has adopted a participatory approach to forest management allowing community based natural resource management in respect to forest management between the Forestry Department whose function is to control, manage, conserve and administer Local and National Forests, promoting partnership with communities and civil society organizations. This forest management approach is driven by the need to promote sustainable use and management of forests across the country and reduce forest degradation and deforestation. The high demand for forest resource products and services due to increase in human population, and the ever-changing environmental conditions have highlighted the need to hasten the partnership approach to the management of forests in a planned manner. It is for this reason that Katete National Forest Management Plan (KNFMP) is formulated.

Signature:

Director of Forestry

ACKNOWLEDGEMENTS

The development of this Forest Management Plan was made possible through support from the Zambia Integrated Forest Landscape Project (ZIFLP). The Forestry Department would like to recognize and appreciate the effort of His Royal Highness Chieftainess Kawaza, Headmen and the community around Katete National Forest for the commitment to support this plan and importantly the sustainable management of Protected Forest.

In addition, the Provincial Forest Office, Eastern would like to recognize and appreciate the efforts of the participants in the consultation workshop for their valuable contribution to the development of the Forest Management Plan.

The production of the FMP would not have been possible without the input from ZAMSTATS and officers of the Forestry Department, Eastern Province. The contribution of the members of the forestry inventory, livelihood data collection, analysis and reporting teams who made it possible to generate the needed information to develop this Forest Management Plan is acknowledged. Local community contribution was vital in both the livelihood and biodiversity surveys as well as in the participatory discussion. Her Royal Highness' contributions during the awareness meetings leading to livelihood survey for the development of the FMP are also highly appreciated.

The Forestry Department acknowledge the financial support of the World Bank and its partners through the Zambia Integrated Forest Landscape Project (ZIFLP) in the development of the draft and subsequent final FMP. Finally, since it is not possible to mention each person engaged in the development of the FMP, the contribution of all persons who participated directly or indirectly in the preparation and completion of this document is appreciated.

EXECUTIVE SUMMARY

Forests, woodlands and trees are among the nation's most extensive natural heritage resources, which require judicious management. The 2014 Forestry Policy vision is to attain sustainable forest management of all types of forests to enhance forest products and services that will contribute to mitigation of climate change, income generation, poverty reduction, job creation and protection and maintenance of biodiversity. This Policy encourages participatory forest management anchored on the active participation of local communities, traditional institutions, private sector and other stakeholders in the management and utilisation of forest resources at all levels of decision making, implementation, monitoring and evaluation.

This Forest Management Plan has been prepared for Katete National Forest with the aim of equipping the management team and other interested stakeholders with a capable tool of directing the approach to be followed, guiding the process of partnerships with key stakeholders and addressing the challenges facing the management of the forest at present. There are so many challenges hampering efficient and effective management of the forests such as Katete National Forest. Therefore, adjacent communities can play an important role in the rational utilisation of the existing forest through participation in decision making, active management, protection and benefit sharing. Thus, community collaboration is imperative so as to protect the remaining forest cover of Katete National Forest from degradation in order to contribute to local and national development as well as for the benefit of the future generations of Zambia.

Translating Policy into Practice

This management plan translates national forest policies into a well-thought-out strategic framework to guide the preparation of annual operational programmes for effective and efficient management of this National Forest. The management plan will regulate forestry activities for a period of 10 years through the application of prescriptions that specify targets, actions and control arrangements. In this respect this plan will form part of the general forest management system that regulates protection, silviculture practices, conservation, monitoring and other relevant operations to ensure sustainable management of the forest.

Community based natural resource management is core to this Forest Management Plan, translating Policy into practice through promoting community involvement in forest

management of Katete National Forest. Negotiating rights to forest products and uses of the --forest whilst agreeing obligations and other responsibilities with local communities, is intended to achieve the parallel goals of ending open access, promoting enhanced forest management, whilst unlocking the full potential of sustainable forest use for economic development in the local communities. Surrounding communities have both the most to lose from its destruction and most to gain from its good management. The Community Forestry approach followed in Zambia provides an incentive mechanism and capacity development process to make this a reality.

To ensure effective implementation, including monitoring, this plan has been prepared using up to date and accurate information on the reserve covering: location and extent; ownership and rights; topography, climate and soils; flora and fauna; potential income and other benefits; challenges and opportunities for sustainable management. This forest management plan has the purpose not only of setting out approved management objectives and specified actions, but equally important, communicating these to the resource owners and other stakeholders who are concerned with the implementation of the plan.

The Forest Management Plan was prepared through consultative, interactive and participatory Strategic Planning Process involving all key stakeholders. It was financed by the Zambian Government through the Zambia Integrated Forest Landscape Project (ZIFLP).

Forest Resource & Community Wellbeing Assessment

During 2019 and 2021, the Forestry Department undertook forest resource assessments, engaging surrounding local communities and their traditional leaders in order to develop plans for the better management of these critical resources of importance for local communities as well as of national interest. In parallel, ZAMSTATS undertook forest livelihoods and economic surveys with communities surrounding the protected forest.

Traditional leaders were consulted and approvals to proceed with participatory land use planning across the landscape as well as in individual forests were granted by the Royal Establishments. Local stakeholder meetings were held with community representatives, local organisations and other Government Departments to raise awareness of climate change issues, the sources of greenhouse gas emissions in the Province, sensitise on the policy and legal framework, the proposed collaborative planning approach, issues

affecting the specific forest areas and exploring opportunities for a partnership for management.

The information collected allowed assessment of the condition of the forest, the value of the forest both economic as well as biodiversity value in terms of species diversity and abundance. Past management, exploitation as well as current management and pressures on the forest can be seen in the species abundance and size distribution in the areas assessed. These as well as the current Policies and development priorities can guide the short-, medium-, and long-term management of Katete National Forest. The inventory results indicate a total standing volume for all species in Katete estimated at 108.6m³/ha, with a total bole volume estimated at 27.3m³/ha. Total Biomass for trees ≥5cm DBH is estimated 170.6 tones/ha with carbon estimate of 85.3 tones/ha. A basal area figure of 11.9m^2 per hectare which confirms the status of Katete National Forest as a healthy forest despite the current high levels of exploitation of large sized trees. Further, there is great need to bring the plantation areas under sound management and prepare site specific management plans for the plantation compartment and sub compartments. Current levels of planting are not considered viable for commercial timber or sustained pole production in the short and medium term.

Summary Socio Economic Analysis

The livelihood survey conducted in 2019 indicated that Katete National Forest is surrounded by approximately 37 farms with a total population of 1048. These households depend on farming as their main occupation, the principal crops grown are maize, sunflower and groundnuts from land holdings ranging between 0.25ha to 6ha. Almost all households use firewood as their energy for cooking. The survey revealed that 90 percent of all the households were willing if called upon to voluntarily support management of the forest with Forestry Department. At the time of survey, there were no squatters within the forest.

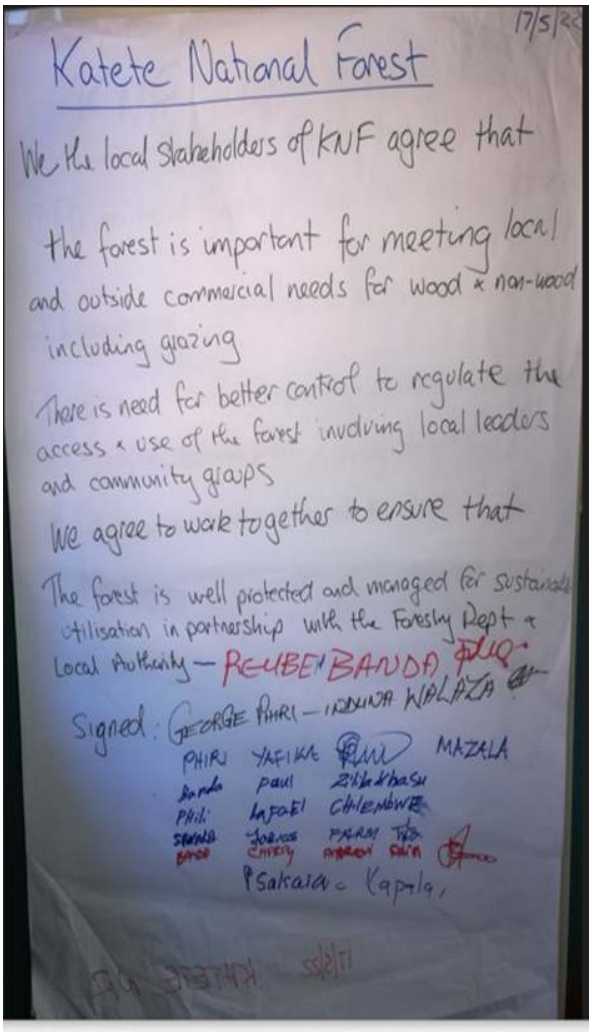
Forest Change & Issues Analysis

A consultation meeting of stakeholders for Katete National Forest was held on 17th May 2022, at Beenzu Lodge, in Katete district. Participants were requested to review the uses and users of the forest, the issues that are contributing to forest loss and forest degradation, but importantly to propose local solutions to these issues. Utilising forest cover imagery, participants were able to relate to the areas of forest and forest loss through agriculture and settlement across the forest and surrounding areas. This was

used to focus discussion on issues, identifying different zones of use and management, possible strategies and priorities for management as well as agreeing permitted and non-permitted activities within each of the identified zones.

Making a Commitment to Work Together for Change

As a statement of concern, but interest to work together with the Forestry Department, the Local Authority and Traditional leaders, stakeholders agreed the need to collaborate over the protection, sustainable use and management of the protected forest area and a declaration of intent was signed pledging to collaborate in the sustainable management of Katete National Forest.



The declaration confirmed that Katete National Forest is of importance for meeting the local social, cultural and economic needs of the surrounding communities as well as of environmental importance, primarily through securing local water resources. The stakeholders requested to work in partnership with the Forestry Department and others to safeguard the forest.

At the consultation meeting of stakeholders for Katete National Forest held on 17th May 2022, at Beenzu Lodge, in Katete district, the stakeholders signed a joint declaration evidenced in image above.

Objectives and management actions

The General Objectives for the management of Katete National Forest are:

(a) To secure forest resources of local and national importance

(b) To protect and restore ecosystems, particularly the protection of land and water supplies of local and strategic importance;

(c) To ensure the sustainable utilisation of forest resources and other natural resources within the protected area;

(d) To ensure full participation of all stakeholders at all levels of society for sustainable forest resource and ecosystem management through appropriate incentives and benefit sharing mechanisms

(e) To meet the social, cultural and economic needs of the local community and wider society involved in management of the Forest in a gender equitable manner.

Proposed Management Actions

The following management actions proposed for Katete National Forest reflect the statutory purpose of the reserve as set out in section 19 of the Forests Act of 2015.

1. Forest Conservation through Community Participation and Livelihood Development

Community empowerment is central to participatory forest management for the effective coordination and sustainable management of forest resources. This Plan recognizes that communities surrounding Protected Katete Forest are key stakeholders in the conservation of this forest as well as beneficiaries from its sustainable management. This action aims to meeting the social, cultural and economic needs and thereby improving the livelihoods of the communities around Katete National Forest. This will be achieved through promotion of community forestry and the establishment of a community forest management group to partner over the management of Zones 2 and 3 of the National Forest, as well as a development zone (4) in the immediate surrounding area to promote greenhouse gas emission reduction interventions.

2. Forest Protection, Restoration, Management and Conservation of Biodiversity

Katete National Forest is an important forest ecosystem containing a number of different plant species and fauna. The forest is surrounded by an increasing population which is highly dependent on it for subsistence and increasingly economic needs like collection of mushroom, wild fruits, caterpillars, honey, firewood and poles. The level of unsustainable use is anticipated to intensify with increasing human populations resulting in higher levels of resource exploitation and degradation. Protection of this forest habitat is therefore essential to ensure the continued ecosystem services and local livelihood needs.

Experience has shown that adequate levels of forest protection cannot be achieved through confrontation and conflict between the managers and forest-adjacent communities. In practice, both local people and the government have a mutual interest in conserving the forest, and utilizing forest products in a sustainable way. Without considering the needs of local communities, gaining their support, and working with them, rather than against them, forest protection and management goals and objectives will not be reached. Consequently, the strategy will be to work together with communities to develop joint protection systems in return for agreed levels of utilization within the capacity of the forest to meet subsistence needs whilst safeguarding the environmental aspects including conservation of biodiversity.

3. Forest Plantation Establishment and Management

Forest plantations are important for the supply of poles, timber and firewood. Due to its proximity to Katete urban, the demand for construction timber and wood energy has increased over time there by increasing the pressures on Katete National Forest. Investment in the plantation area is therefore critical in order to meet future demand. The programme will involve the rehabilitation of plantations from which the products will be derived. Silvicultural operations are core to maximise the production potential of the demarcated plantation areas. Includes site preparation, planting, maintenance operations, production forecasting, harvesting and marketing with subsequent replanting/ regeneration. These will be detailed in an annual plan of operations to be prepared by the Officers responsible for the management of the forest. Such operations are expected to create employment and income generation opportunities in the local communities.

Safeguards & Other Crosscutting Issues

In implementing the above management actions, cross cutting issues as well as other environmental and social screening processes will be mainstreamed in all aspects of forest management. Specific activities as well as the annual workplan and operational plans should include a process of social and environmental screening. These should be reviewed and updated in accordance with the type of activity being planned and general screening reviewed annually. A Grievance redress mechanism will be operational at the District and Provincial level to allow a mechanism for grievances to be raised, documented and addressed. Documentation and tracking are core to this issue. Women shall be integrated into all aspects of management of Katete National Forest and empowered through equal participation in decision making, governance and benefit sharing.

Contribution to Emissions Reduction in Eastern Province

Improved management of Katete National Forest through the proposed interventions will directly address the need for Emissions Reductions (ER) through promotion of Sustainable Forest Management. This centers around expansion of community forestry and strengthening collaboration in the management of this and other protected forest areas in the Province.

Delivering sustained results

The expected outcomes of participatory management through local stakeholder involvement in the management of protected forest areas will be to reduce emissions in the Eastern Province. Strengthening sustainable land and forest management practices, creating increased incomes and resilience of local communities, conforming to national strategies to reduce the effects of climate change through mitigation and adaptation as well as aligning with international concerns and conventions, will deliver sustained results. Implementing the proposed management actions should result in improved local livelihoods and local economic development, improved availability of major forest products whilst sustaining the key ecological functions of the National Forest and its surrounding area.

Definition of Terms

Above ground Biomass- refers to *vegetation above the soil, including stem, stumps, branches, bark, and foliage*

Basal Area- is the measure of cross-sectional areas of a tree trunk at breast height, typically measured in square meters per hectare

Below ground Biomass This is one of the carbon pools including biomass of the roots and organic matter

Biomass- refers to the total mass of living organisms in a particular ecosystem or biological community

Bole height - The distance from the base of a tree to the base of the living branch that part of the tree crown

Bole volume- refer to the amount of wood contained in the trunk or stem of the tree, typically from the ground level up to a point where the trunk reached a certain diameter or height. It is used in forestry inventory

Community Forest - refers to forest management that has ecological sustainability and local community benefit as central goal

Fauna- refers to the animals in particular region or ecosystem it includes all animal species that inhabit a given area from tiny insects to and microorganisms to large mammal and birds

Flora- refers to the plants, trees, flowers and other living organisms that are classified as part of the plant kingdom

Regeneration- refers to the process of renewing a forest or woodland to replace those that have been harvested or lost due to natural causes

Topography- refer to the physical features of a particular area of land, including its elevation, shape and relief

Traditional Housing unit: referred to a housing structure usually made of mud material around the walls/poles and usually has a thatched roof.

ACRONYMS

CFMG	Community Forest Management Groups
CSA	Climate smart agriculture
DBH	Diameter at Breast Height
EA	Enumeration Area
FD	Forestry Department
FMA	Forest Management Area
FMP	Forest Management Plan
GHG	Greenhouse gases
HFO	Honorary Forest Officers
KNFMP	Katete National Forest Management Plan
MGEE	Ministry of Green Economy and Environment
MOE	Ministry of Energy
NGO	Non-Governmental Organization
PAPI	Paper Assisted Personal Interviews
REDD	Reducing emissions from deforestation and forest degradation
USAID	United States Agency for International Development
ZAMSTATS	Zambia Statistics Agency
ZIFLP	Zambia Integrated Forest Landscape Project

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Summary Cost of Forest Management Plan Implementation by: <u>Programme Cost (ZMW)</u>

Forestry Programme	**Cost in ZMW for 10 years**
1. Forest Protection	1,832,805.0
2. Biodiversity Conservation and Environmental Education	780,933.0
3. Forest Conservation through Community Participation and Livelihood Development	1,211,245.0
4. Human Resource Development	988,245.0
5. Infrastructure Development	2,078,123.0
6. Research, Monitoring and Evaluation	2,406,551.0
Total	**9,584,650.0**

Table 1:Showing forest programme with cost

Cost breakdown is provided in Annex VII

KATETE NATIONAL FOREST MANAGEMENT PLAN

1 INTRODUCTION

The Katete National Forest Management Plan (KNFMP) is prepared in response to the National Forestry Policy of 2014 which has set forth clear guidelines to: "ensure adequate protection and sustainable utilization of forests, by promoting the development and use of forest and non-forest products by involving all interested key stakeholders particularly local communities around the protected forest in the management of the forests and non-forest products in line with provisions of the Forests Act No. 4 of 2015.

1.1. Purpose of the forest management plan

The purpose of the forest management plan is to guide the rural communities, traditional and local leadership, and Key stakeholders in collaboration with the Forestry Department during the exploitation and management of the forest resources of the Katete National Forest in a sustainable approach and manner.

The plan will serve as a legal document to guide utilization and management of resources by local communities and key stakeholders around the protected forest and the Forestry Department through the Ministry of Green Economy and Environment (MGEE).

This Forest Management Plan aims to contribute towards the Goal of the National Strategy for REDD which is to reduce deforestation and forest degradation for sustainable natural resource management, improvement of livelihoods and achievement of a green economy.

1.2. Duration of forest management plan

The duration of the FMP is ten (10) years. In theory, this means that ten years from the date that the plan is approved and adopted. In practice, however, because of the need to be flexible and adjust based on lessons learned along the way, the plan may be modified during the first few years of implementation. In other words, the plan should be dynamic, and lessons learned are incorporated as they become obvious.

1.3. Developmental Objectives

The Development Objectives for this Forest Management Plan are aligned with the objectives of the National Forestry Policy, 2014, which include:

Objective 1: To manage the country's forest resources in order to maximize productivity and the development potential of the forest resources:

Objective 2: To empower local communities and traditional leaders in order to ensure adequate protection and management of forests:

Objective 3: To improve the role of forests in addressing climate change in order to contribute to reducing its impact through mitigation and adaptation measures:

1.4. General Objectives

The General Objectives for the management for the National Forest include:

(a) To secure forest resources of local and national importance

(b) To protect and restore ecosystems, particularly the protection of land and water supplies of local and strategic importance;

(c) To ensure the sustainable utilisation of forest resources and other natural resources within the protected area;

(d) To ensure full participation of all stakeholders at all levels of society for sustainable forest resource and ecosystem management through appropriate incentives and benefit sharing mechanisms

(e) To meet the social, cultural and economic needs of the local community and wider society involved in management of the Forest in a gender equitable manner.

2 GENERAL DESCRIPTION

2.1. Location Details

Katete National Forest No. P12, approximately 567 hectares in extent forms part of the forest estate in eastern province. The forest is a protected area under Government Notice No. 135 of 1952 and deposited in the office of the Surveyor-General on Map No. 38.

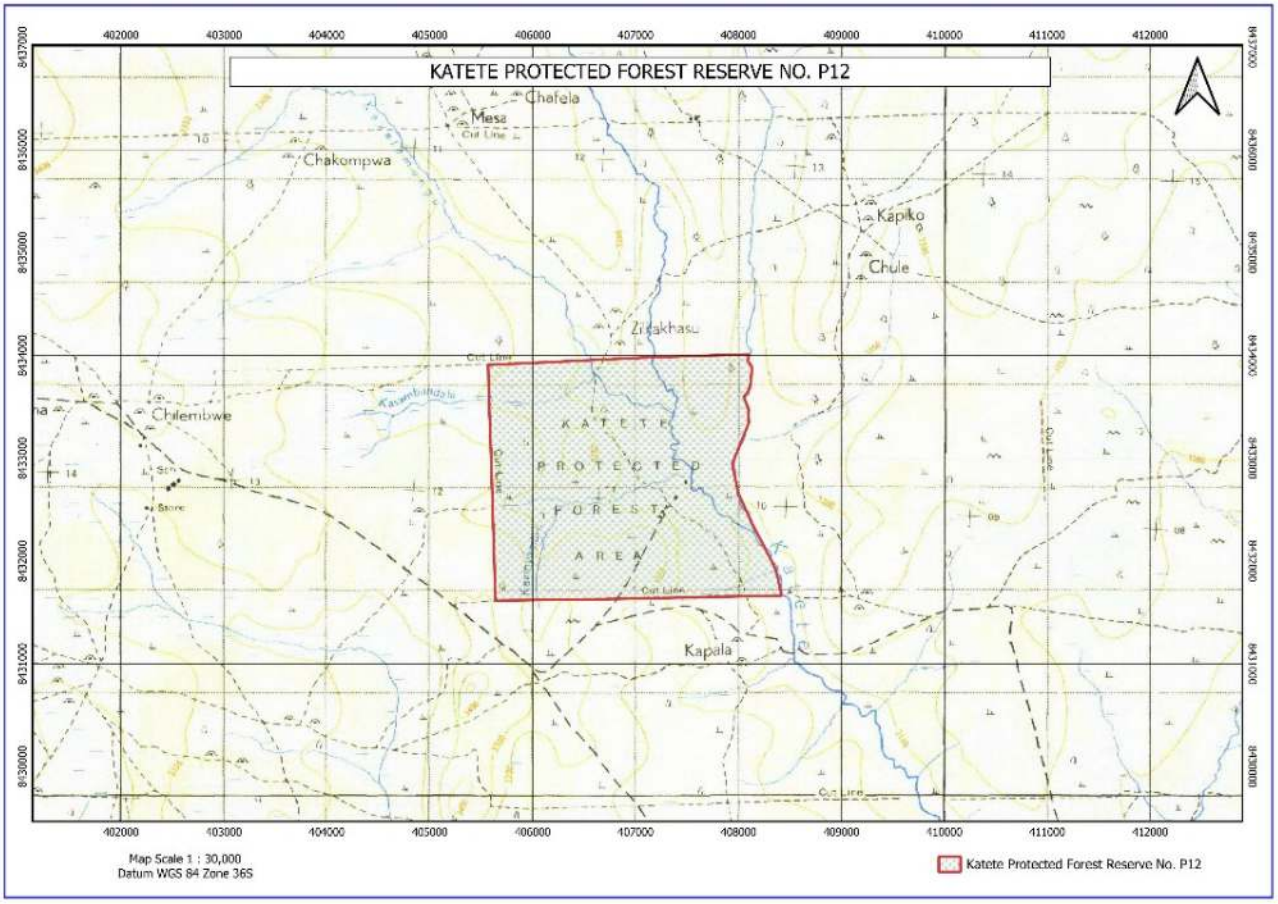


Figure 1: Map of Katete NF

The Katete National Forest is located 23km from Katete boma along the Chanida/Katete road. It is dominantly rural forest area surrounded by a number of farms.

2.2. Ownership and control

Katete National Forest No. P. 12, was originally declared a protected forest and gazetted in 1952. The forest was gazetted as a protected forest area under Government Notice No.135 of 135 of 1952.

The area is in what is termed as “National Forest” category under the Forests Act. The area is under the jurisdiction of the Forestry Department, Ministry of Green Economy and Environment. Therefore, the Forest Department is mandated to manage the Forest under powers bestowed under the Forests Act No. 4 of 2015 of the Laws of Zambia.

2.3. Physical Environment

Topography, Geology & Soils

The Katete National Forest is relative flat with few rock outcrop and geologically the area seems to be located on Precambrian metamorphic rocks characterized by gneisis with igneous intrusion of syenite.

The exploratory soil map of Zambia compile by the soil survey section research branch of the Ministry of Agriculture 1971 classified the area covering Katete National Forest well drained, moderately deep, red to strong brown, friable, gravelly, moderately weathered fine loamy to clayey soils (chromi-haplic ALISILS, partly skeletic phase).

The Katete National Forest geologically has few rock outcrop and geologically the area seems to be located on Precambrian metamorphic rocks characterized by gneisis with igneous intrusion of syenite.

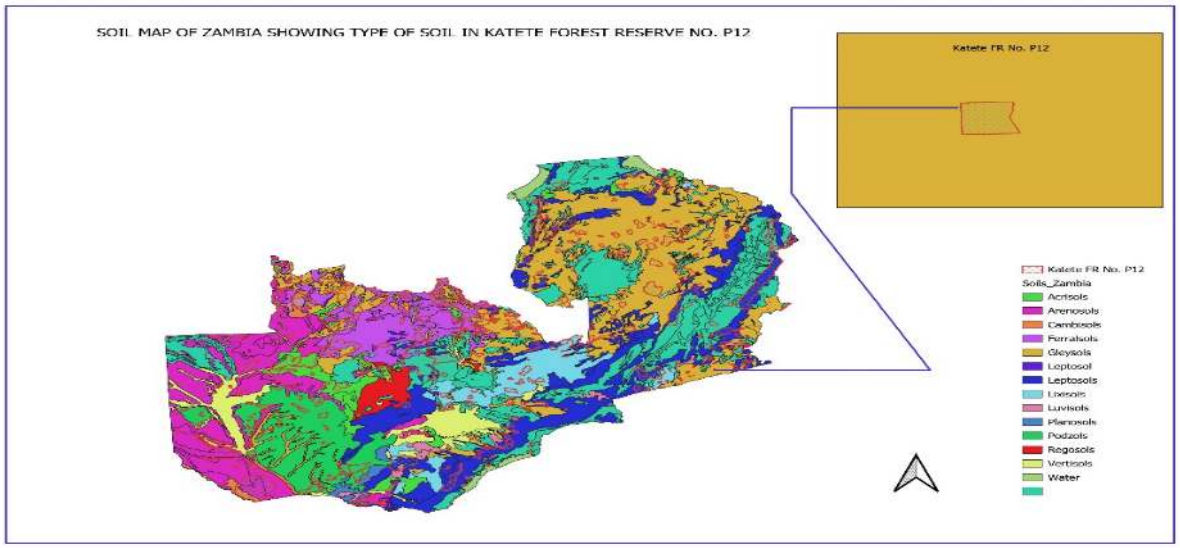


Figure 2: Katete NF soil map

Rainfall & Temperature

The rainfall usually lasts for 5 to 6 months starting from November to March and the peak months are December and February. The rainfall amount ranges from 900 to 1000mm.

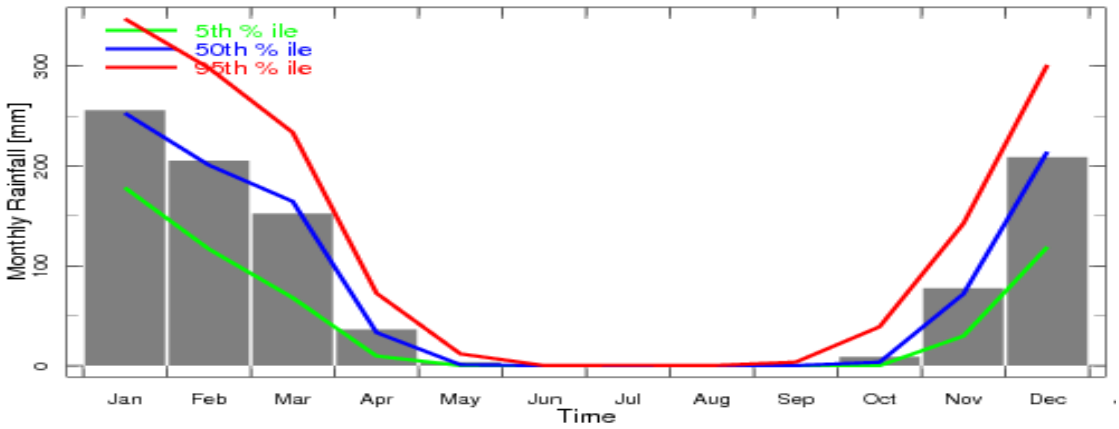


Figure 3: Monthly rainfall *Source: The Zambia Meteorological Department*

Normally, temperatures are very high, especially during the dry months which occurs between August and December. The maximum average monthly temperature is between 27C and 34 C. The highest maximum temperature occurs in October. The lowest average temperature is between 21^{0}C and 23^{0}C during the cool dry season occurring especially between May and June.

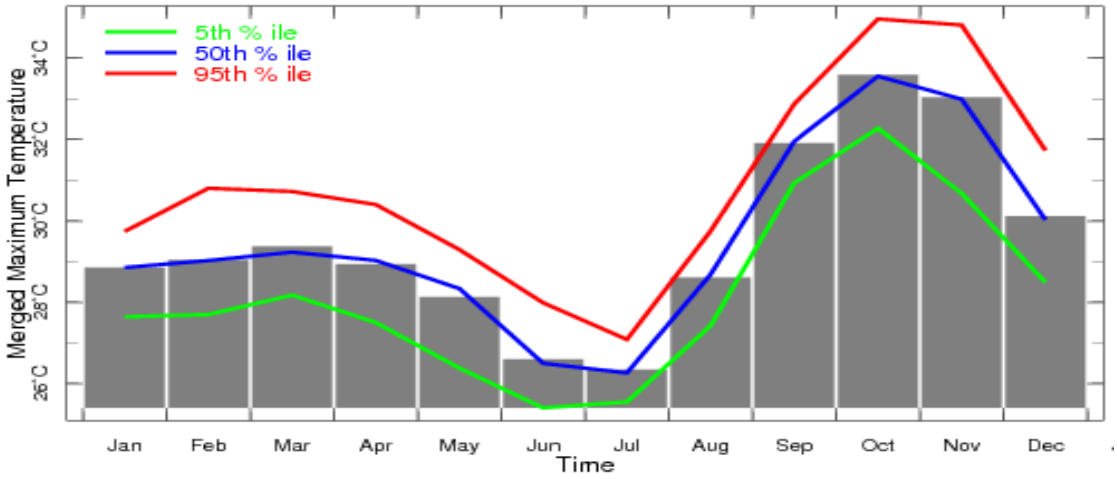


Figure 4: Monthly temperature: *Source: The Zambia Meteorological Department*

2.4. Biophysical Environment

Vegetation Type

Katete National Forest is a homogeneous forest. The vegetation type is miombo woodland on the plateau with a diverse tree flora including *Julbernardia paniculata*, *Isoberlinia angolensis*, *Brachystegia boehimii*, *Brachystegia floribunda*, *Parinari curatellifolia* and many other species with *Brachystegia speciformis* being the dominant species.

Fauna

The Katete National Forest has number of small fauna such as rabbits, snakes, mice, monkeys and various bird types.

Infrastructure and communication

The forest is defined by statutory boundary and there is forest camp infrastructure and amnities inside the area and plantation area. The area is well linked and accessed through the Chanida/Katete road and forest road inside.

Plantation Forest

A portion of Katete National Forest was earmarked for the establishment of plantation of different types of *Eucalyptus species, Bamboo and others for trials in the 1960s.* Due to this reason, there exists 84.6ha of *Eucalyptus grandis plantation.* Lately limited planting has been going on which should be managed for maximum benefit, and it is anticipated that the area under plantation is likely to be increased and restocked as patches of open areas are evident. It must be mentioned that resources to establish and maintain plantations are limited. The local community has been involved in supporting plantation establishment as paid Labour.

The best strategy that is workable is to understand the factors that have led to poor performance of plantation species and put corrective actions in place.
There is great need to bring plantation areas under sound management and prepare site specific management plans for plantation areas, hence the preparation of this Forest Management Plan.

Figure 5: Eucalyptus compartment in Katete National Forest

3 PAST MANAGEMENT

In the past, a Forest Management Plan was developed for the management of the Katete National Forest. However, It could not be located but it was referred to in the correspondences found in the old files. The management of the reserve has been guided by the objectives of reservation proposal as stated in the proposal at the time the forest was gazetted as a protected forest area under Government Notice No.135 of 1952. The reservation aimed at protecting stream catchment area, conservation biodiversity of indigenous tree species and securing the supply of forest and non-forest products for present and future generation in particular communities around the protected forest. The past management indicative level of success was largely in maintaining stream catchment area, control of erosion, accumulation of biomass, moderate illegal harvesting of tree resources and collection of non-forest products such as caterpillars, mushroom, fruits and dead firewood.

Following the internal restructuring of the Forestry Department under the Public Service Reform Programme (PSRP) in 1997 affected man power as a number of officers were laid-off especially in the lower ranks who managed forest stations among them Katete National Forest. The reduced man power especially from 2004 and onwards caused dynamics changed: Economic downturn, increase in population, high poverty levels, Forestry Department preparedness to cope with crisis was lacking compounded by delayed revision of Forest Policy of 1998 and legislation the Forests Act No.39 of 1973 and less treasury funding of planned activities affected smooth and development of forest operations in Katete National Forest. However, the current Forest Act no. 4 of 2015 addresses some of the challenges experienced in past forest management by involving communities surrounding forest in the management.

The reservation proposal of establishing Katete Forest area/plantation was based on the following consultations:

A series of meetings held with His Royal Highness Chief Kawaza and the communities living around Katete Forest proposing that, it be gazetted as a protected forest area. Further meetings held at district level during district development Committee meetings and native Council meetings with the view to discuss gazetting of Katete Forest. Initially the proposal was for managing the indigenous trees but later a plantation establishment called Mindola was proposed with a view to:

- Employment Creation

- Supply of plantation poles to Fort Jameson (Chipata districts) and Katete areas.
- Creation of market of various farm products to people who will be staying in at plantation camp.

First commercial planting was undertaken in 1961 following a series of trials of a number of Eucalyptus species and several Plantation Management Plans (PMP) were developed along the years up until the period when internal restructuring was instituted.

4 GROWING STOCK

Assessing the growing stock of the forest is important in terms of ensuring Sustainable Forest Management. In basic terms, assessment is needed to ensure that the removal of trees and forest products does not exceed the rate of replacement in terms of growth and abundance. This is the basic principle of sustainable forestry otherwise the forest will be depleted and degraded.

A forest inventory was conducted by the Forestry Department in 2019 with financial support from the Zambia Integrated Forest Landscape Project. The following section provides the results and analysis from the data collected. A systematic sampling system was used to determine the location of the sample plots, measurement of trees and soils followed the Department's Guidelines and the software *forestcalc* (version 6.4.1) used to process the data to provide the summary information contained in this chapter. The information collected allows assessment of the condition of the forest, the value of the forest both economic as well as biodiversity value in terms of species diversity and abundance. Past management, exploitation as well as current management and pressures on the forest can be seen in the species abundance and size distribution in the areas assessed. These as well as the current Policies and development priorities can guide the short, medium and long term management of Katete National Forest.

Stratum Values	**0-4**	**5-9**	**10-14**	**15-19**	**20-29**	**30-39**	**40+**	**Total**
Vol (m^3)	0.0	5.5	7.4	7.7	27.8	20.1	40.1	108.6
Bole Vol. (m^3)	0.0	1.8	2.4	2.7	9.5	7.2	3.7	27.3
Density (SPH)	0.6	295.9	111.6	47.9	72.8	22.4	7.3	558.4
Basal area (m^2)	0.0	1.2	1.3	1.1	3.3	2.1	2.9	11.9
Biomass (tons)	0.0	8.5	11.3	11.6	42.0	31.2	66.0	170.6
Carbon (tons)	0.0	4.3	5.7	5.8	21.0	15.6	33.0	85.3
Volume by Species Use								
Stratum Values	**0-4**	**5-9**	**10-14**	**15-19**	**20-29**	**30-39**	**40+**	**Total**
Saw log Vol. (m^3)	0.0	0.1	0.1	0.3	2.6	3.0	0.0	6.2
Firewood Vol. (m^3)	0.0	1.2	1.5	2.7	13.2	8.4	9.5	36.6
Pole Vol. (m^3)	0.0	0.3	0.2	0.3	1.2	0.0	0.0	2.1
Fruit Vol. (m^3)	0.0	0.2	0.3	0.1	0.7	0.0	0.0	1.5
Medicinal Vol. (m^3)	0.0	1.7	2.0	2.8	6.9	1.2	0.0	14.5
Others Vol. (m^3)	0.0	1.9	3.2	1.4	3.1	7.4	3.8	20.9
Seedlings								5,861

Figure 6. Summary information total for all species

4.1 Tree species abundance

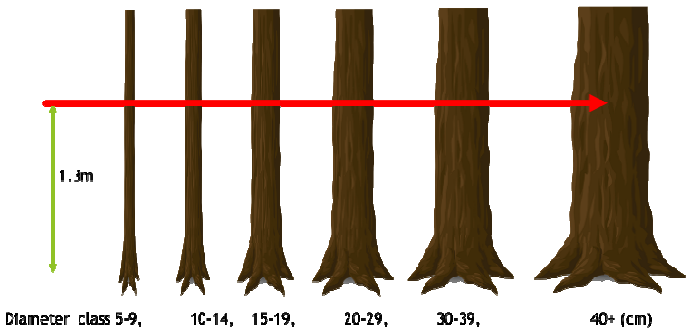
The inventory data indicates that there are over 50 different types tree species that include tree seedlings in the forest. However, the ten most frequent species are shown below.

Top Ten Abundant Species In the Forest Reserve

Species	Local Name	Species Code
Annona senegalensis	Mpovya	25
Azanza garckeana	Mukole	26
Brachystegia boehmii	Muombo	46
Brachystegia floribunda	Musamba	48
Brachystegia utilis	Tsamba	55
Combretum mole	Mulama	86
Dalbergia melanoxylon	Mukelete	101
Diplorhynchus condylocarpon	Mchindula	114
Lannea discolor	Kawumbu	194
Julbernardia paniculate	Mutondo	189

Tree and Sampling Distribution by Size Classes

Size Class Distribution is a way to describe the structure of a forest by categorizing the tree population by size of the tree through measurement of each tree, its diameter-at-breast-height (DBH) in centimetres and allocating each measured tree into a size range as means to assess the tree population. Trees below 5cm are counted, not measured. The actual distribution of measured trees into various classes is then compared to a suggested "ideal" benchmark as an indicator of forest health and sustainability. The presence or absence of trees in various size classes informs the manager of past management, current stocking and the future growth potential of the forest.



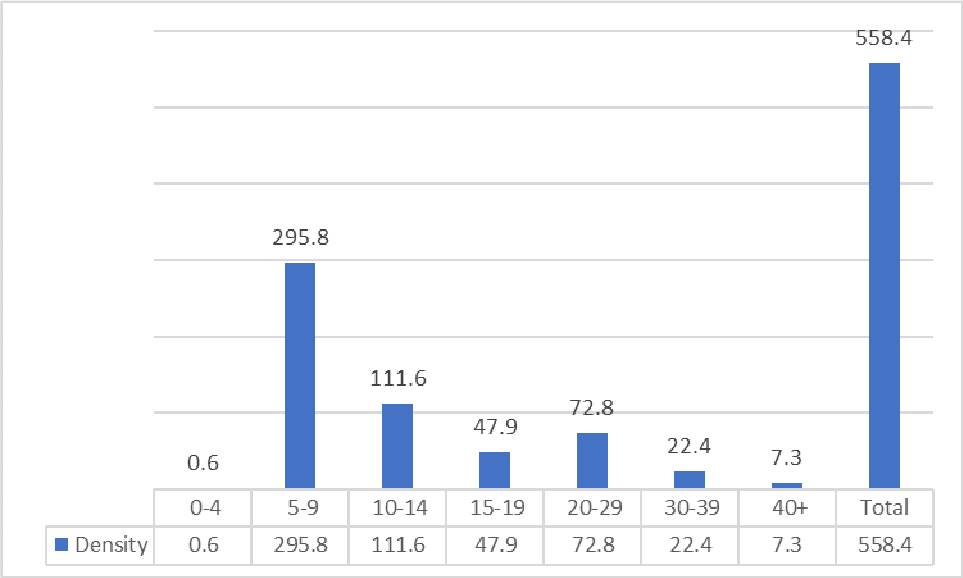


Figure 7: Density by diameter class/ha for all species

A stocking density of trees **≥** 5cm is estimated at **558.4** stems/ha with higher in diameter class 5 – 30. The results indicate spatial variation in stock density is significant among the area sampled

Basal area (m²) by diameter class/ha for all species

Forest condition is further assessed by the amount of area occupied by the stems of trees, termed basal area. This is measured by determining the cross-sectional area of a tree at breast height (1.3m), summing all the measurements and expressing this as a figure of square metres, either in their size class categories or as a total per hectare.

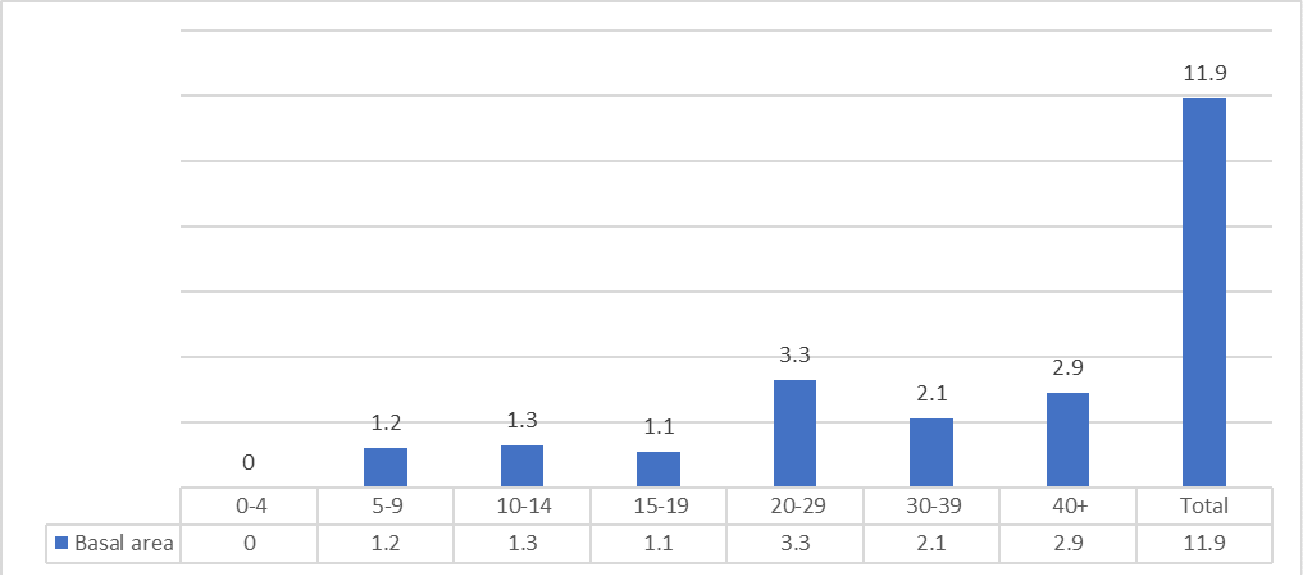
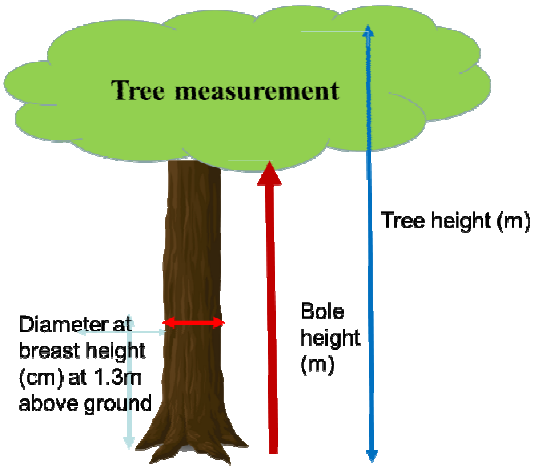


Figure 8: Basal area (m^2) by diameter class/ha for all species

The basal area by diameter class per hectare for all species is 11.9 with higher in diameter class 20 and above. The outcome indicates that there is a moderate number of mature trees.

4.2 Total Volume, Biomass and Carbon estimate of all Species

Calculating volume of the standing trees of DBH > 5cm is a further measure of the condition of the forest, site quality and previous management and exploitation. Tree volume to different heights is measured and calculated by individual trees and summed to give a total volume estimate per hectare. An estimate of the volume in a stand or plot is important for forests quantification and management decision making. The amount of merchantable wood in cubic metres (m3) in a tree, as well as across the forest, was estimated while the trees are still standing using the methods of forest mensuration. Tree bole volume is based on the timber height relating to the parts of the tree that could be cut and sawn. Stand volume based on tree height is important for providing an estimate of total wood biomass resource. An assessment of carbon stocks was then estimated using the methodological framework developed by the IPCC .



The total standing volume for all species in Katete national forest is estimated at 108.6m³/ha) with higher in diameter class 20 and above. The outcome indicates that's there still more big trees in the forest.

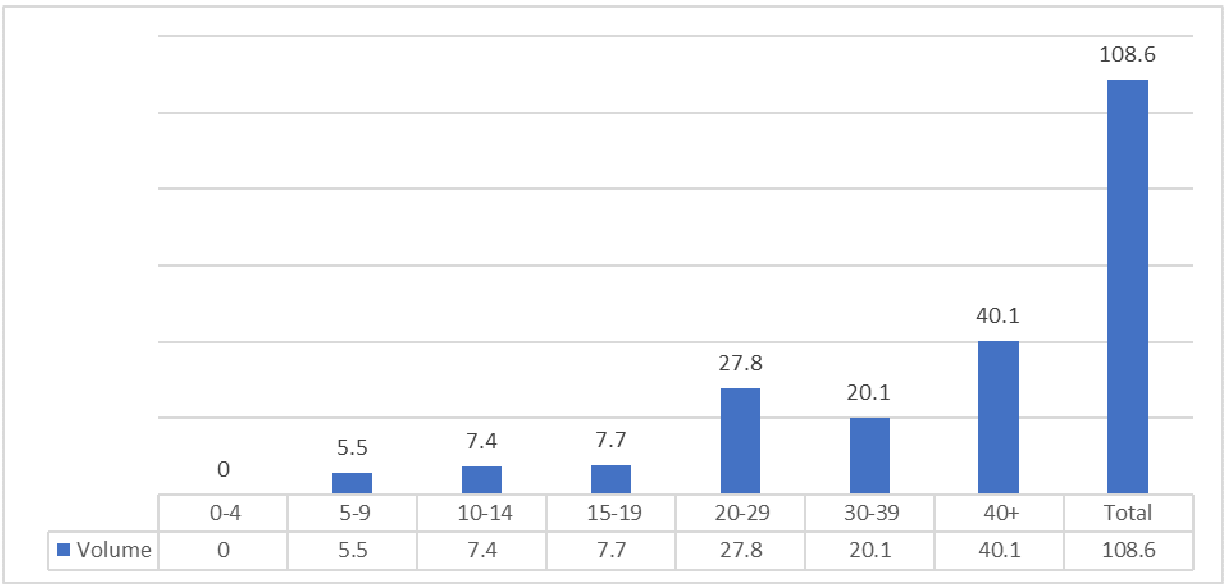


Figure 9: Volume (m³) by diameter class/ha for all species

Volume of all species by merchantable quality

Trees in Katete National Forest are relatively straight, about 60.7% of the trees assessed are straight and 5.4% are bent and 33.9% are crooked. Three quarters of the trees in Katete forest are of harvestable quality.

No	DESCRIPTION	VOLUME(m³/ha)	EXPLANATION
1	Straight	37.76m³	The entire bole length of these trees is straight
2	Bent	3.37m³	The bole length of these trees is slight bend but are sawable
3	Crooked	21.09m³	These trees have bad form, they are crooked and cannot be sawn

Table 2: Volume of all species by merchantable quality

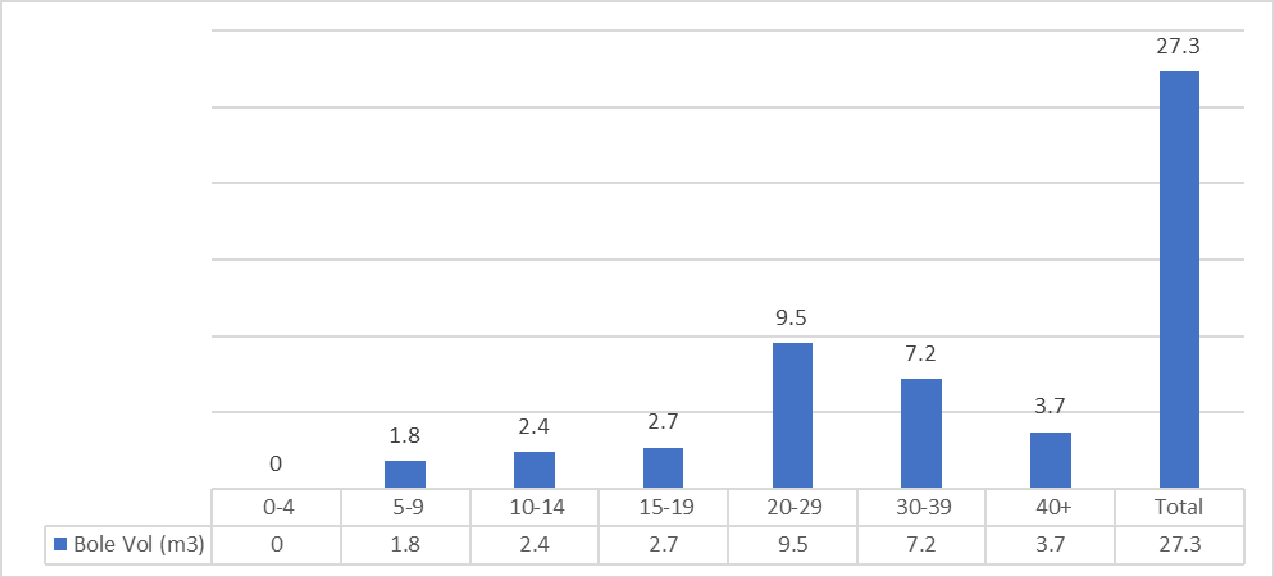


Figure 11: Bole volume (m^3) by quality diameter class for all species

The total bole volume by diameter class per hectare is 27.3m^3 with higher in diameter class 20 and above.

Tree and Sapling Densities

Regeneration data in Katete National Forest consists of undergrowth with diameter less than 5cm dbh. The average number of stems for regeneration in the forest is estimated to be 150 stems per hectares. The species with the high density is *Diplorhynchus condylocarpon* with 73 stems per hectares, this is followed by *Julbernardia paniculata, Brachystegia bohemii and Bauhinia petersiana.*

Based on the inventory data, species used for high valued sawlogs such *Pericopsis angolensis, Pterocarpus angolensis, Dalbergia melanoxylon, Faurea saligna* and the medium valued are *Brachystegia speciformis* and *Julbenadia globiflora,* are abundant in the forest.

The total main stems in Katete National Forest were found to be **SPH** for trees greater that 5 cm in diameter at breast height, the diameter class distribution show an inverted reversed "J" shape which is common for most natural forest with active regeneration and recruitment. Active regeneration and recruitment as portrayed in the inventory area is a good sign of sustainability of the forest stock which has chances of ensuring sustainable supply of timber products and hence sustained livelihood of the forest dependent

Volume of all species by use

No	Description	VOLUME(m^3/ha)	Explanation
1	Sawlogs	6.2m^3	These are merchantable trees with the average diameter of 30cm dbh and above and are of exceptionally high valued suitable for timber production
2	Poles	2.1m^3	These are tree species with relative straight bole length with the average diameter at breast height of 5cm to 29cm
3	Fruits	1.5m^3	The tree species include all fruit bearing either edible or not edible
4	Medicinal	14.5m^3	All medicinal plants
5	Firewood	36.9m^3	These include all dead and or diseased trees which can be used for firewood
6	Others	20.9m^3	These include all tree species which are not classified in any of the above categories

Table 3: Trees in Katete National forest in terms of forest product categories.

Biomass and carbon above ground

The total biomass and carbon stocks (tons) by diameter class for all species respectively of 170.6 and 85.3 estimates methodological framework applied is that developed by the IPCC documented in the 2006 guidelines for national greenhouse inventories volume 4, chapter 2 and 4. The correlation of total biomass and carbon both above and below ground is in the figure below is within the IPCC requirement of half of biomass constitute carbon stock.

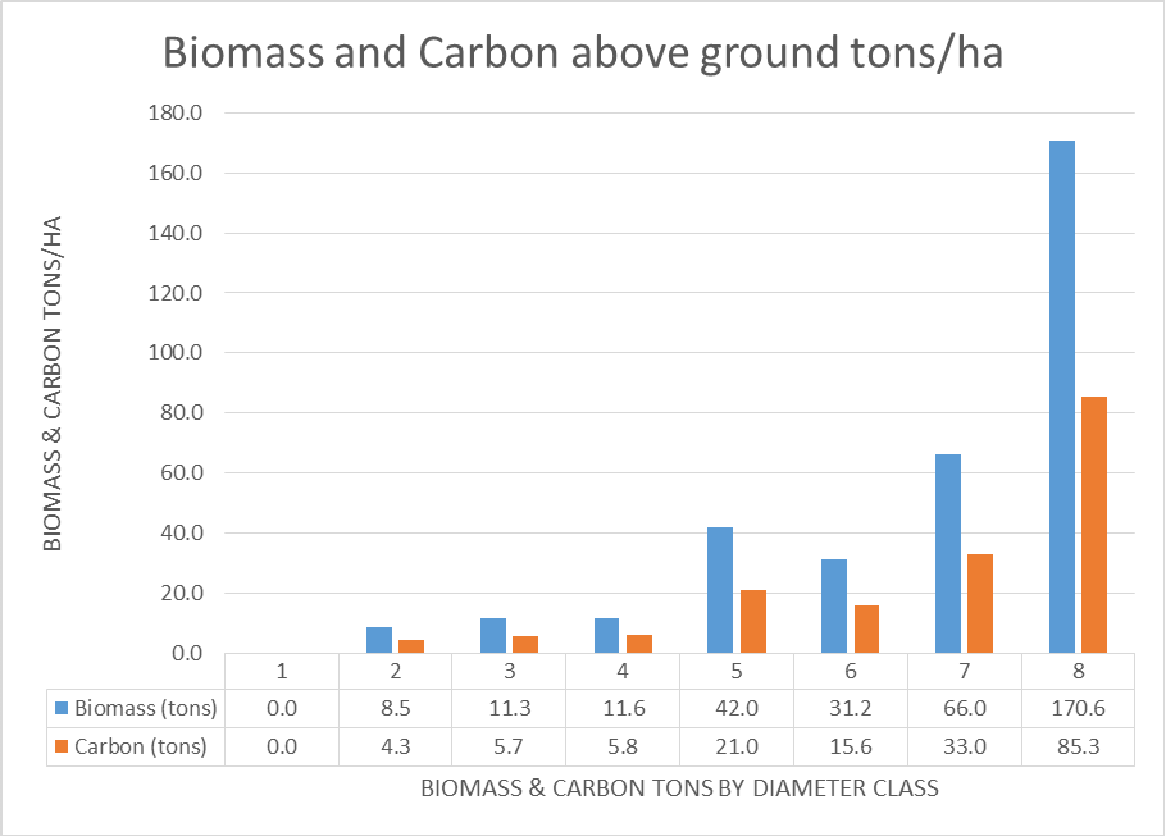


Figure 12: Biomass and Carbon above ground by diameter class/ha for all species

5 STAKEHOLDER DEMOGRAPHICS

5.1 Introduction & Methodology

A Forest livelihood survey was conducted by the Zambia Statistics Agency (ZAMSTATS) Eastern Regional office, between October and November 2019. The main objective of the Forestry livelihood Survey is to measure the well-being of the Katete National Forest surrounding population and to measure the utilisation and management of trees resources. Also, to determine the benefits the surrounding communities derive from the forest reserve.

The demographic characteristics of any area are important in understanding the living conditions of the people through the impact they have on the prevailing situations. Furthermore, data on the demographic characteristics provide background information and the necessary framework for the understanding of other aspects of the population, including economic activities, poverty and food security.

Considering the household population distribution of Katete National Forest can be translated as having an Average size of the household membership of about 5 per household.

The systematic sampling method was used to select households from each Enumeration Area (EA). The method assumes that households are arranged in a straight line and the following relationship applies.

Let K = N/n Where:

N = total number of households assigned sampling serial numbers

n = total desired sample size to be drawn from an EA

K = Sampling interval in each EA calculated as K = N/n

The 2019 forest survey was Paper Assisted Personal Interviews (PAPI) collected. All the field questionnaires were checked for completeness by the field supervisors. After data collection, all questionnaires were submitted for data entry using statistical software SPSS, Version 20.

After data entry was completed, the data were subjected to extensive checks on their validity and consistency in order to facilitate analysis using statistical package SPSS version 20, which was done by Mully Phiri and Dr Richard Kaela.

5.2 Household and Population dynamics

Katete National Forest as at 2019 livelihood survey was surrounded by mainly farming blocks and very few villages as indicated in Annex: ..... with a total population of 1,048. The main ethnic groups in the area are the Chewas. The forest adjacent population are mostly small-scale farmers who utilize the forest for some of their livelihood requirements. The main crops grown are Maize, Sunflower and groundnuts. There are no squatters within the forest.

The land tenure of the population surrounding the Katete National Forest is mostly under customary land tenure system and not state land as the households have no title deeds or letter of allotment.

Level of Education.

Education is one of the fundamental factors that enhance the well-being and quality of life for persons and for entire society. Education, therefore, has profound effect on the population's welfare in terms of health, employment earnings, poverty levels and nutrition.

Education levels of the head of households in the Villages/Localities surrounding the Katete National Forest was found to be mainly primary level that contributed 43 **percent**, while tertially contributed about 24 **percent**. The rest being No formal education and secondary education indicating 13 **percent** and **20 percent** respectively. As shown in the figure below:

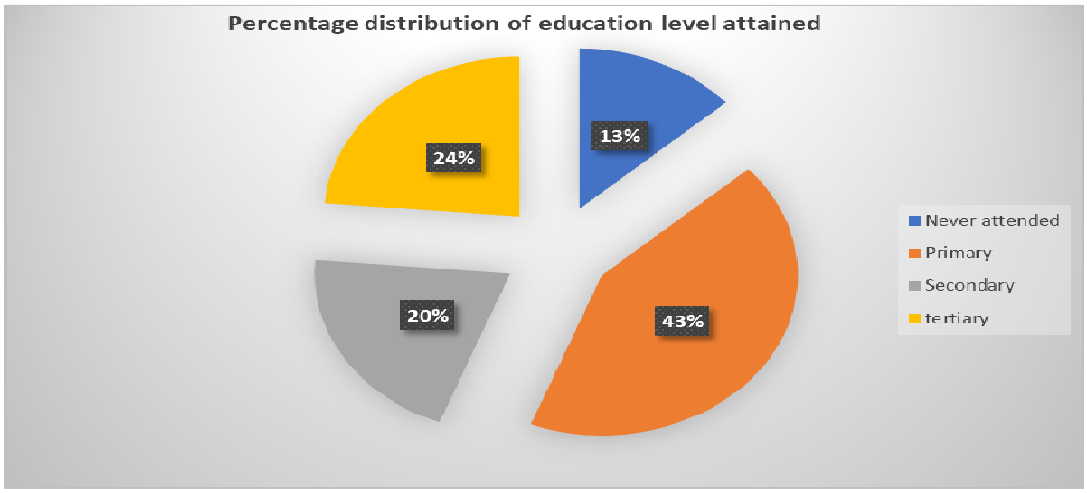


Figure 12: Level of Education of household heads of localities surrounding the Katete National Forest

Economic activity

Katete National Forest population depends on farming as their main occupation. The results showed that 60.21 percent of the household population surrounding Katete National Forest had farming as their main occupation, while 34.41 are in paid employment and 4.30 percent where in business and 1.08 percent unstated economic activities. This translates into the high population depending on farming as main economic activity.

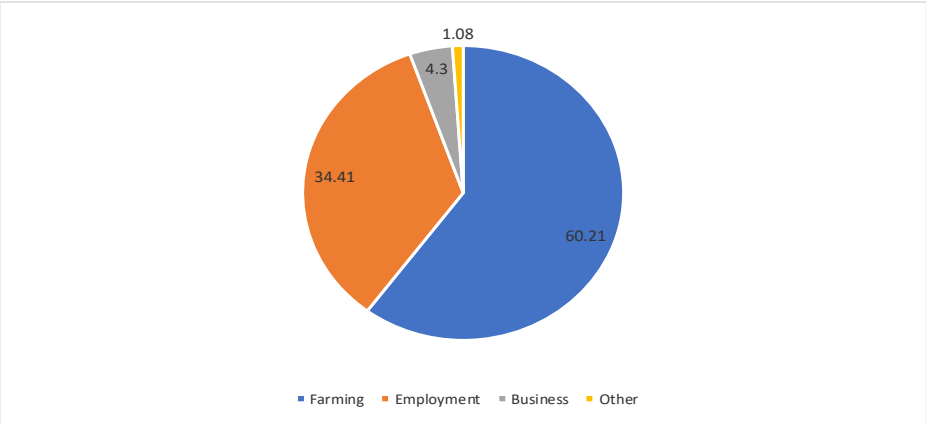
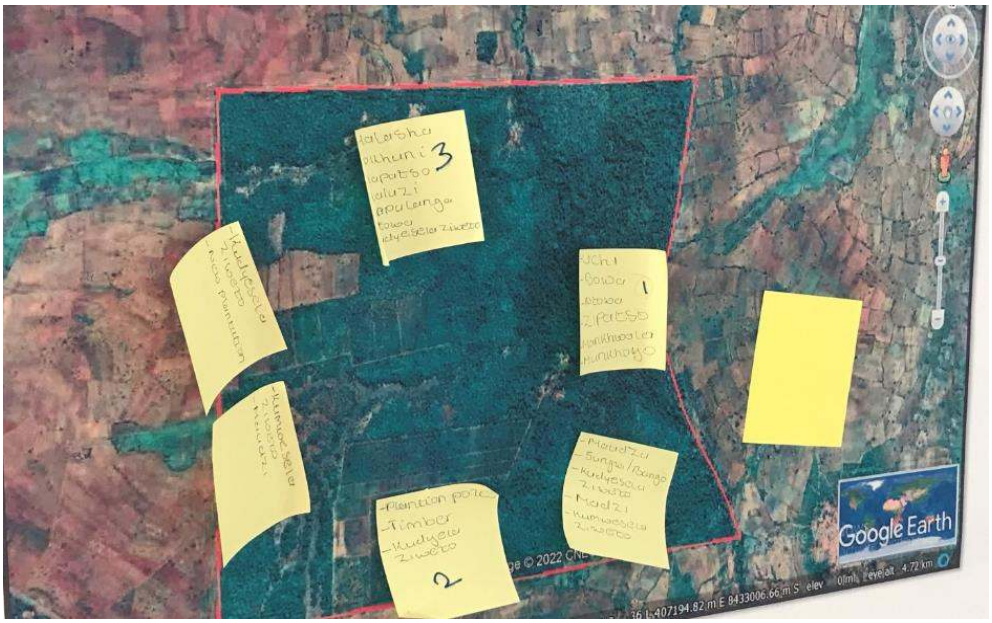


Figure 13: Economic activity of household

5.3 Utilization and zoning of forestry resources by stakeholders

Katete National Forest consultative meeting held on 17th May 2022, the stake holders identified the uses of the protected forest and zoned the Katete National Forest as below:

Figure 14: community zoning of Katete National Forest



The forest use zones were identified as follows:

Zone 1.

- Grazing
- Hunting
- Water sources
- Firewood
- Fishing

Zone 2.

- Grasses
- Fishing

Zone 3.

- Caterpillars
- Hunting
- Timber

Types of Energy Used For Cooking

Almost 69.36 percent of the households in the localities surrounding Katete National Forest use firewood as their energy for cooking. The livelihood survey revealed a percentage of about 69.36 percent using firewood as energy for cooking, while 22.58 percent using electricity as cooking energy and 8.06 percent use Charcoal.

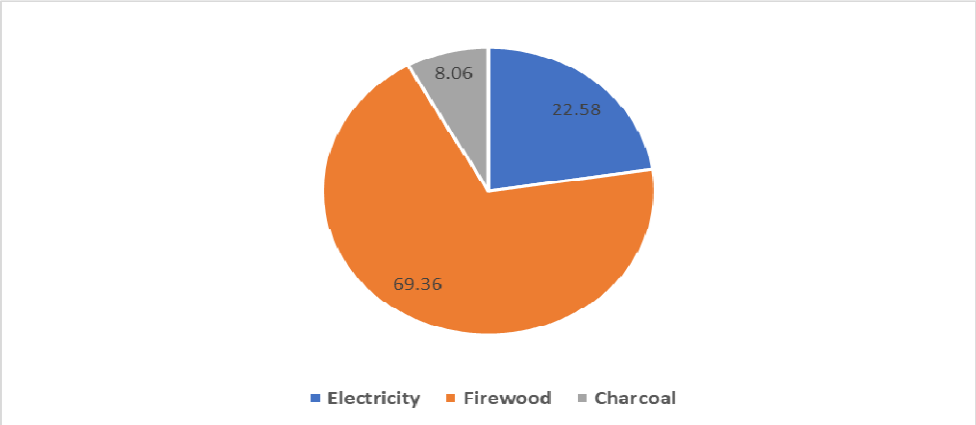


Figure 15: Main Types of Energy Used for Cooking

Analysis showed that there is mounting pressure on the forest by the larger population using firewood as main cooking energy of 69.36 percent. Hence mitigation measures are required in the management plan.

The main tree resources used for firewood by households in the localities surrounding the Katete National Forest are as shown in the table below.

Main tree resources used by households for Firewood

Main Tree Resources Used
Brachystegia Bohemii
Brachystegia spiciformis
Julbernadia globiflora
Diplorynchus condlocarpon
Pericopsis angolensis
Pseudolachnostylis maprouneifolia
Brachystegia boehmii
Combretum collinum
Bauhinia petersiana
Piliostigma thoningii
Brachystegia manga
Parinari curatellifolia
Julbenadia Paniculata

Table 4: Main Tree Resources Used by households surrounding the Katete NationalForest

Note: these species are therefore under serious threat for wood energy and mitigation measures are required in the management plan.

Non wood Forest products

The main Non wood Forest products used by households surrounding the Katete National Forest are as shown in the table below.

Non wood Forest products
Mushroom
Fruits
Grass
Medicine
Caterpillars

Table 5: Main non wood resources Used by households surrounding the Katete National Forest

Land Ownership and Use

The livelihood survey also revealed that communities surrounding the Katete NF most of the land owned by the households was for Agricultural activities which indicated 81 Percent, followed by other uses at 19 percent, while land under fallow 10 percent, Land maintained as Natural Forest was at 4 percent and land used for growing trees at 2 percent.

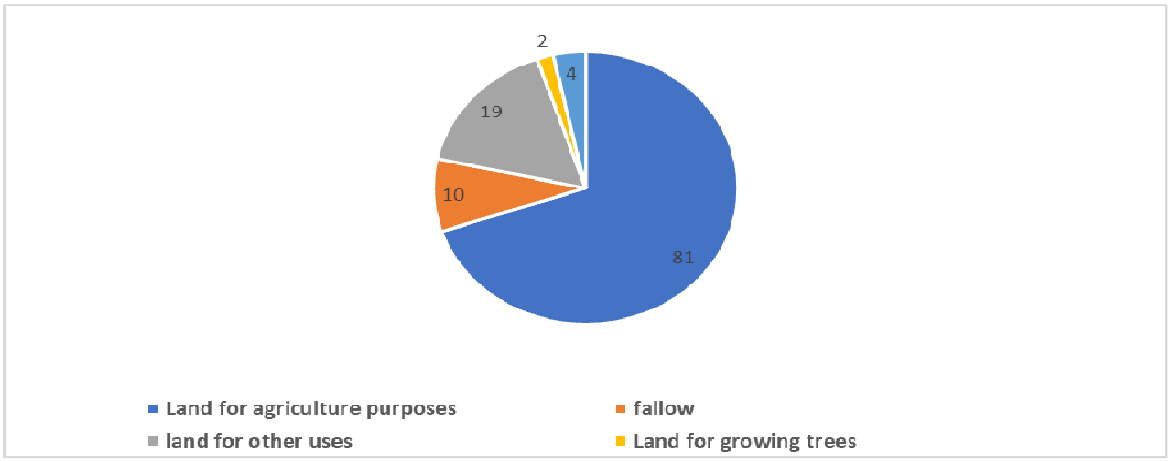


Figure 16: Land Ownership and Use

5.4 Willingness of community to participate in forest management

The livelihood survey revealed that 90 percent of all the households surrounding the Katete NF Reserve were willing if called upon to voluntarily support management of the forest with Forest Department and other stake holders in the community.

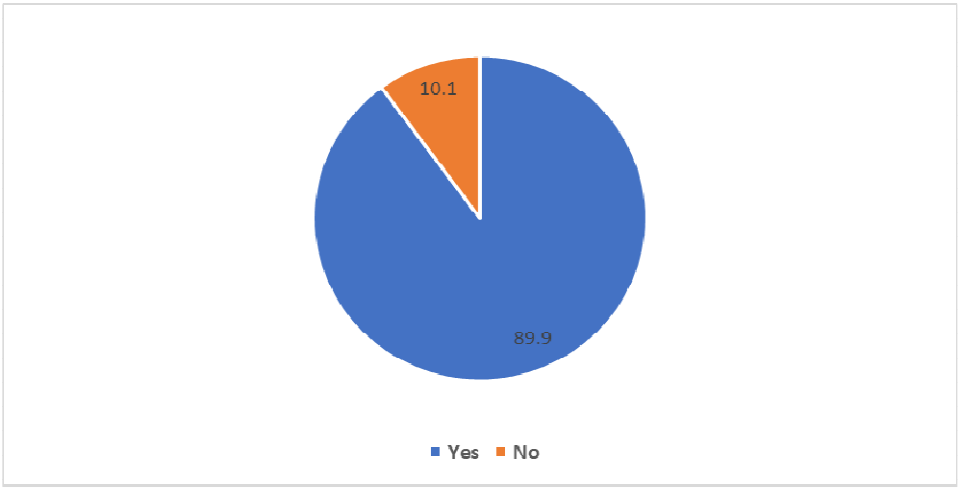


Figure 17: Willingness to participate

6 PROPOSED MANAGEMENT ACTIONS

The following management actions proposed for Katete National Forest reflect the statutory purpose of the reserve as set out in section 12 of the Forests Act of 2015. These include:

Purpose of National Forest

12. Subject to the other provisions of this Act, all land comprised in a National Forest shall be used for—

(a) the security of forest resources of national importance;

(b) the conservation of ecosystems and biological diversity;

(c) improved forest resource management and sustainable utilisation of forest resources; and

(d) the management of major water catchments and head waters, subject to the Water Resources Management Act, 2011.

Act No. 21 of 2011

This management plan recognizes the 4 zones identified during the stakeholder consultation of 17th May 2022, which identified use of the forest, the main users of the forest, issues affecting Katete National Forest and permitted activities.

6.1 Zoning the forest

Zone 1: Plantation production zone

Zone 2: Indigenous Forest sustainable use area

Zone 3: Dambo wetland management area

Zone 4: Farms surrounding the protected forest

The following management approaches are proposed for the identified zones:

Zone 1: Production forestry

In order to fulfil is regulatory mandate FD of establishing plantation and securing forest resources for the local economy, this zone will be managed by the Forestry Department. The plantation zone will be managed for the supply of wood products, timber, poles and wood energy to the nearby urban area of Lundazi and support local enterprise development. The plantation production zone includes the recently upgraded tree nursery, water reticulation

system, office and forest staff housing. The need for market analysis mentioned in the 1982 forest management plan is still relevant and therefore should be updated to inform the product supply planning.

Zones 2 & 3: Community Forest Areas

To meet the social, cultural and economic needs of the local community. These zones will be managed in partnership with the local community following the community forestry approach as set out in the Forests (Community Forest Management) Regulations, 2018, and the National Guidelines for Community Forestry, 2018. This will be covered by a Community Forest Management Agreement, management plan and local resource use rules which set out both rights and obligations for control, protection and management of the identified forest area.

Zones 4: Farms Surrounding the Forest

to create a buffer which will help in the sustainable management of the protected forest, its imperative that this zone which comprises of farms practicing traditional agriculture be encouraged to incorporate agroforestry and Conservation Smart Agriculture.

6.2 Identified Actions

In order to manage Katete National for on sustainable basis, the identified management actions are described

The following management approaches are proposed for the identified zones:

Forest Conservation Through Community Participation and Livelihood Development

Community empowerment is central to participatory forest management for the effective coordination and sustainable management of forest resources. This Plan recognizes that communities surrounding Katete Forest are key stakeholders in the conservation of this forest as well as beneficiaries from its sustainable management. This action aims to meeting the social, cultural and economic needs and thereby improving the livelihoods of the communities around Katete National Forest.

Within this management action, the following interventions will be undertaken in Zones 2 and 3 of the National Forest;

- Promotion of community forestry and the establishment of a community forest management group;
- Forest enterprise development (based on stakeholder consultations to be further developed through the CFM process). These may include:
    - Beekeeping using improved hives;
    - Mushroom collection and processing;
    - Community management of wild fish stocks through local harvesting rules;

This management action will be operationalized and results measured as follows:

Specific Objectives	**Strategy**	**Actions**	**Responsible**	**Indicator**
1. Enter into partnership with clear roles and responsibilities with surrounding communities	Promote community forestry approach	Conduct CFM Steps 1-7	FD	Signed CFM agreement. Annual work plan reports from the CFMG
2. To contribute towards meeting social, cultural and economic needs and improving the livelihoods of forest-adjacent communities.	Forest resource condition is developed and improved through management actions emphasizing the use of best practices.	Training forest-adjacent communities in sustainable forest enterprises, such as beekeeping, and other non- wood forest enterprises	FD/NGOs	Forest enterprise activities developed and producing income.
3. To reduce carbon emissions from deforestation and forest degradation by ensuring community benefit from carbon	Establish an incentive benefit sharing mechanism through the carbon trading	Stake holder participatory awareness meetings (Traditional leaders,	FD/NGOs	Tonnage of GHG sequestered increased thereby income shared to community is improved year on

credits.	scheme to be established by Government in Eastern province	Government, NGOs and the community)		year.
4 Reduce forest dependency by local communities.	Promoting diversification of activities, particularly on-farm activities such as agroforestry and establishment of wood-lots, to create alternative Sources for forest products.	Involve local communities in woodlot establishment.	FD/ Adjacent communities	Number of people dependent on the forests reserve reduced by half at mid term review

Katete National Forest is an important forest ecosystem containing a number of different plant species and fauna as described in the previous sections. The forest is surrounded by an increasing population which is highly dependent on it for subsistence and increasingly economic needs like collection of mushroom, wild fruits, caterpillars, honey, firewood and poles. The level of unsustainable use is anticipated to intensify with increasing human populations resulting in higher levels of resource exploitation and degradation. Protection of this forest habitat is therefore essential to ensure the continued ecosystem services and local livelihood needs. In addition, awareness of the importance of ecosystem services, conservation of biodiversity and climate change mitigation services of Katete National Forest is low among the adjacent communities. Forest protection is therefore key in the sustainable management of forest resources. Traditionally, patrolling has been relied upon as the main protection activity but, despite these efforts and in view of the staffing levels, it has not been possible to control the level of unregulated use. Experience has shown that adequate levels of forest protection cannot be achieved through confrontation and conflict between the managers and forest-adjacent communities. In practice, both local people and the government have a mutual interest in conserving the forest, and utilizing forest products in a sustainable way. Without considering the needs of local communities, gaining their support,

and working with them, rather than against them, forest protection and management goals and objectives will not be reached. Consequently, the strategy will be to work together with communities to develop joint protection systems in return for agreed levels of utilization within the capacity of the forest to meet subsistence needs whilst safeguarding the environmental aspects including conservation of biodiversity.

In order to achieve this the following activities will be undertaken;

- Fire management, boundary and firebreak maintenance
- Joint forest patrols (FD/HFOs)
- Promotion of agroforestry and woodlots in surrounding villages.
- Promotion of energy saving cook stoves and production biomass for energy
- Promotion of environmental education to create wider awareness of the forest, its importance, and the need for its conservation (review Biodiversity Conservation actions to be included here explicitly)
- Promotion of environmental standards for forest operations, use of chemicals and other hazardous substances to health and safety of employees and communities.

This management action will be operationalized, and results measured as follows:

No	**Specific Objectives**	**Strategy**	**Actions**	**Responsible**	**Indicators**
1	To protect Forest Reserve from late fires	Encourage early burning within and outside the forest by involving local communities.	-Conduct prescribed and early burning. -Training the local communities on fire management techniques -Sensitizing the local community on the importance of early burning.	FD/ Adjacent communities	Area in hectares of controlled burning
2	To secure the	Involve forest	-Carry out annual	FD/	Distance in

	boundary and define the extent of the boundary and prevent possible encroachment	adjacent communities in Forest protection and management.	Boundary maintenance. -Beacon maintenance - Erection of signpost on roads entering the Forest	Community	km of forest perimeter cleared
3	To conserve and enhance the biodiversity of the forest reserve.	Enhance understanding of the forest ecosystem.	-Awareness on biodiversity with regard to indigenous knowledge. -Promote local participation and ownership through meetings.	FD/NGOs	
4	To ensure protection against pests and human damage	Frequent monitoring of forest resources	Inspections for diseases and pests and detection of possible illegalities.	FD/ Community	Hectarage of forest protected from pests and human damage
5	To significantly reduce levels of illegal forest product harvesting.	Involve the local communities in the management of forest resources in order to create a sense of ownership. Engage honorary forest Officers/guards	-Conduct sensitization meetings. -Conduct forest patrols.	FD/ community and other security wings	Number of illegal harvesters/ activities reduced
6	To significantly	Promotion of	Training	FD/ DoE/	Volume of

	reduce levels of tree cutting for wood energy.	energy efficient Cook stoves and Alternative energy sources.	community members in construction of Permanent energy cook stoves. Provide incentives to people using the improved cook stoves.	community	wood cut for energy reduced by 30% by mid term review
7	To reduce carbon emissions from Agric soils and dependency on inorganic fertilizer	Promote CSA through Agroforestry	Partnership with MoA and others in training communities in CSA and agroforestry.	FD/ Agric/ CSO's/ community	Tonnage of GHG emissions in the forest reserve reduced by 15% by mid year review.
8	To improve forest cover in the fringe areas of the forest reserve	To Provide Forest extension services.	Promotion of agroforestry and Woodlot establishment for communities surrounding the forest. Training the communities in assisted natural regeneration	FD	Hectarage of forest in the fringe areas increased year on year.
9	Improve local awareness of biodiversity and its value.	Seek greater participation of local communities in research and other biodiversity activities	1.Conduct research that documents and utilizes the indigenous knowledge of Forest-adjacent communities.	FD/Forestry Research	Levels of community participation in forest management activities is sustained over time.

		Such as eco-tourism, with the result that biodiversity values will become of more direct relevance to them.	2.Promote local participation and benefits from eco-tourism as a means of creating better awareness of biodiversity		

Forest Plantation Establishment and Management

Forest plantations are important for the supply of poles, timber and firewood. Due to its proximity to Lundazi urban, the demand for construction timber and wood energy will increase over time there by increasing the pressures on Katete National Forest. Investment in the plantation area is therefore critical in order to meet future demand. The programme will involve the rehabilitation of plantations from which the products will be derived. The following shall be the interventions which will be employed;

- Nursery management as a tree seedling production facility for the Reserve and wider distribution;
- Silvicultural operations to maximise the production potential of the demarcated plantation areas. Includes site preparation, planting, maintenance operations, production forecasting, harvesting and marketing with subsequent replanting/ regeneration;
- Employment and income generation in the local communities.

These will be detailed in an annual plan of operations to be prepared by the Officers responsible for the management of the Reserve.

This management action will be operationalized and results measured as follows:

Specific Objective	Strategy	Activity	Responsibility	Indicators
1. To promote nursery management as a tree seedling production facility for the plantation and wider distribution	Expand and manage the existing tree nurseries.	Resource mobilization for nursery establishment	FD/NGOs/ Community	Number of seedlings raised in the forest nursery increased year on year.
2. To increase productivity in demarcated plantation areas	Undertake Silvicultural operations to maximise the production potential of the demarcated plantation areas.	Resource mobilization on site preparation, planting, production, harvesting and marketing with subsequent replanting/ regeneration	FD/Community	Hectarage of plantation area increased year on year.
3. To improve livelihoods of the local community adjacent to the forest	Create employment for income generation to the communities around the forest.	Silvicultural and forest protection operations	FD/Community	Income of local community adjacent to the forest increased

6.2 Environmental and social safeguards and other crosscutting issues

In implementing the above management actions, cross cutting issues will be mainstreamed in all aspects of forest management. The following environmental and social safeguards will be considered;

Gender equity and empowerment including gender-based violence. Women shall be integrated into all aspects of management of Katete National Forest and empowered through

equal participation in decision making, governance and benefit sharing. Gender equity shall be pursued to ensure that both men and women have the full range of opportunities and benefits arising from the management of Katete National Forest. This aspect should be in line with the National Gender Policy and Climate

In brief, safeguards will ensure:

- Gender equity and empowerment including addressing issues of gender based violence. Women shall be integrated into all aspects of management of Katete National Local Forest and empowered through equal participation in decision making, governance and benefit sharing. Gender equity shall be pursued to ensure that both men and women have the full range of opportunities and benefits arising from the management of Katete National Forest. This aspect should be in line with the National Gender Policy and Climate Change Gender Action Plan. Further safeguards in relation to emissions reductions benefit sharing plan for Eastern Province should be adhered to.
- Environmental and social screening processes. Specific activities as well as the annual workplan and operational plans should include a process of social and environmental screening. These should be reviewed and updated in accordance with the type of activity being planned and general screening reviewed annually.
- A Grievance redress mechanism will be operational at the District and Provincial level to allow a mechanism for grievances to be raised, documented and addressed. Documentation and tracking is core to this issue.

Specific Objectives	**Strategy**	**Activity**	**Responsible**	**Indicator**
To ensure cross cutting issues are mainstreamed in all aspects of forest management	Ensure that all environmental and social impacts, risks and liabilities are identified and mitigated. Identify training	Awareness raising Short courses Exchange visits Refresher courses	FD/NGOs	All crosscutting issues mainstreamed in all forest management aspects.

for social equity wellbeing and empowerment through sustainable development	needs. Promote ownership and access to forest products and services.			Zero grievances raised. Grievances addressed and closed within 3 months

Environmental Education

Environmental education is the key to ensuring the future of Katete National Forest. With improved understanding and appreciation of its importance especially amongst the surrounding local communities, there will be less pressure on this forest with regard to destructive activities. In the long term, improved environmental education will lead to a better understanding of the importance of conserving Katete National Forest. The following interventions will be undertaken in order to create wider awareness of the forest, its importance, and the need for its conservation:

No	**Specific Objectives**	**Strategy**	**Actions**	**Responsibility**	**Indicators**
1	To create wider awareness of the forest, its importance, and the need for its conservation	1. To target a wider range of groups in the community through different actions including school children, and headmen.	-Conduct meetings and drama performances to assess community understanding on forest use and conservation. -Sensitization on Climate change through radio. - Produce pamphlets on the	FD/MOE/ NGOs	Number of awareness raising activities undertaken

			need for forest conservation. (Local language).		
		2. To encourage the involvement of local clubs and schools to use the forest conservation Clubs as an educational resource.	-Facilitate the formation of forest conservation clubs in surrounding schools.	FD/MOE	Number of awareness raising activities undertaken
		3.Strengthen school environmental education programmes	-Conduct environmental talks in schools on forest conservation & climate change. Conduct study visits to other areas and projects to gather practical & potentially useful experiences from elsewhere.	FD/Other Partners	Number of awareness raising activities undertaken

Infrastructure Development

In order to achieve the forest management objectives for Katete National Forest, maintenance of infrastructure is required. To date, the forest itself yields very little in terms of direct revenue, the maintenance of infrastructure is an ongoing problem for forest management, where funds are always scarce. Maintenance of the track road connecting the PFA to the main road is a major challenge. Similarly, maintenance of the existing good quality infrastructure (office, houses, water and reticulation system) is vital.

No	Specific Objectives	Strategy	Actions	Responsibility	Indicators
1	To maintain the infrastructure necessary to achieve the multiple objectives of forest management.	Maintain the existing infrastructure	1. Maintain the road network. 2. Maintaining of offices and staff housing units at the Forest Station.	FD/Maintenance/ Infrastructure	All infrastructure maintained to optimum standards

7 STAKEHOLDERS ROLES AND RESPONSIBILITIES

All key stakeholders will be involved in the implementation of the Katete National Forest Management Plan in line with the following roles and responsibilities:

Forestry Department

The Forestry Department (FD) have a key role to play in promoting sustainable forest management and shall inform all relevant government departments on the management plan and raise awareness on the programmes and activities. The Department shall facilitate the implementation of the FMP at District and local level.

Role of the Local Authorities

The Local authority have a key role to play to fully integrate the management plan into local development plans with good cross sectorial linkages. The Local Authority shall institutionalize the Forest management plan into their operational plans (IDP).

Role of the Traditional Authorities

Traditional leaders play a vital role in providing mentorship and guidance to communities and helping resolve any conflicts and enforcement of customary laws relating to natural resource management. In terms of the community forestry approach, the chief plays a key role in providing consent to the process of recognition of the community and to the signing of the community forest management agreement between the community and the Director of Forestry. This agreement further reinforces the role of the traditional leaders in the oversight of the community forest management groups, including controlling access and use of the forest, hearing cases that cant be dealt with by the community, ensuring reporting and conduct of the election of office bearers is in conformity with the community constitution.

Role of communities

As key rights holders must take the lead in controlling access to the forest, ensuring benefits from sustainable use are maximized. Through the community forestry process roles, rights and responsibilities for controlling access and use as well as protection and sustainable

management are clearly defined. The local community are therefore core to the implementation of the management plan.

Role of Honorary Forest Officers

As community members nominated by their peers and appointed by the Minister, Honorary Forest Officers are key to the protection of the National Forest and therefore play an important role in the implementation of the Forest Management Plan. The District Forest Officials and officers allocated responsibilities for the management of Katete National Forest require to coordinate the work of the HFOs in enforcing community resolutions and bylaws and where necessary enforce the statutory laws provided by the Forests Act, 2015

Role of Private sector & Civil society organization

Both private sector entities and civil society organisations can play a key role in providing services (both forest and non forest) and promoting new investment, development of market linkages for community based forest enterprises. These can assist promoting economic value to the sustainable management of Katete National Forest and therefore well being of surrounding communities.

8 MONITORING AND EVALUATING IMPLEMENTATION

Monitoring and evaluation (M&E) of the management plan is essential since it provides a basis for observation, adjustment and improvement of the targeted activities and assessment of the achievements. The Forest Management Plan will be implemented by Forestry Department by involving local communities around the forest reserve. The Department will provide a forum for dialogue, consensus building, priority setting and balancing of the various interests involved. Monitoring and evaluation of this management plan will be based on annual work plans that will be prepared for Katete National Forest.

8.1 Monitoring

To ensure that implementation of the management plan is on course, FD will facilitate monitoring of activities and programmes in coordination with partners, stakeholders and community representatives in the LLFMP including the impact of the FMP on the well being of the communities on the forest fringes. Implementation of the FMP will be monitored through a number of identifiable indicators as described in the management actions in Chapter 6. These will be subject to regular review during the plan period. Continuous monitoring during the implementation period will be maintained through preparation and submission of monthly, quarterly and annual progress reports.

8.2 Evaluation

The KNFMP implementation and impact will be evaluated at two points. Mid-term (5years) and at end of term (10 years). Evaluation will involve analysis of both activities and impact generated to sustainable management of the forest and the fringe communities as this will generate evidence to inform the development, focus and implementation of future management plans. Evaluation carried out will assess progress in the implementation of planned activities and achievement of objectives. The evaluation report will also provide essential information to revise the management plan.

8.3 Responsibilities

The Provincial Forestry Office will undertake monitoring and evaluation of the implementation of the plan. The District Forestry Office will be responsible for submitting

annual plans of operations, as well as monthly, quarterly, and annual progress reports to the Provincial Forestry Office.

8.4 Strategic monitoring indicators

strategic monitoring indicators provide a measure of assessing whether set targets are progressively being achieved as described in the management actions Chapter. The lead implementing agencies represented by the Forestry Department will undertake monitoring and evaluation of the implementation of the plan.

Programme	**Indicator of Success**	**Means of Verification**	**Assumptions**
Forest Protection	Reduced incidences of forest crimes Reported. Performance of the local communities and honorary forest officers.	Records and reports.	The Plan is successfully completed and implemented with Cooperation from community Members
Biodiversity Conservation	Increase in species biodiversity.	Surveys on biodiversity, records, photographs and reports.	The Plan is successfully implemented Good working relationship between stakeholders Availability of resources
Community Conservation and Livelihood development	-Number of people - trained and practicing sustainable forest enterprises. -No. of woodlots established -Number and types of IGAs. -Crop and livestock	Records, reports and photographs. -Community Visits.	The Plan is successfully implemented Availability of funds

	yields.		
Environmental Education	No. of school conservation clubs formed. No. of awareness meetings and attendance. -No of trainings held/exposure visits	Records, monitoring & Evaluation reports and photographs.	The plan is successfully implemented with funds made available.
Human Resource Development	Number of people employed Number of people trained. Number of community members involved in forest activities	records Monitoring and evaluation report	The Plan is successfully implemented Availability of funds
Monitoring &Evaluation	Number and type of research, Monitoring & evaluations undertaken. -Compliance levels to KLFMP	records Monitoring and evaluation report	The Plan is successfully implemented Availability of funds

Table 6: strategic monitoring indicators

9 ANNEXES

Annex 1: Declaration Order & Maps

***Government Notice* 135 *of* 1952 *Statutory Instrument* 158 *of* 1975**

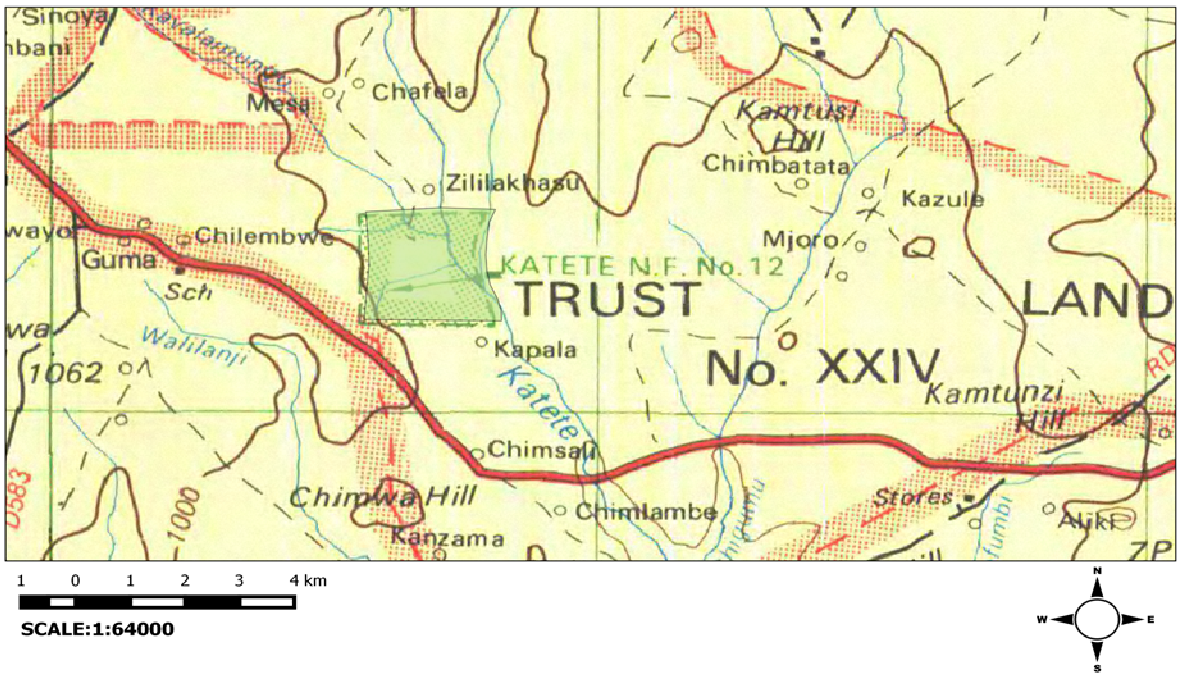
NATIONAL FOREST AREA NO. P12: KATETE

Starting at a point on the right bank of the Katete River approximately 609.6 meters south of its confluence with the Chansato Stream, the boundary runs in a straight-line westward on a true bearing of 269 degrees approximately for a distance of 2,837.688 meters approximately; thence northwards in a straight line on a true bearing of 359 degrees approximately for a distance of 2,342.388 meters approximately; thence in a straight-line eastward on a true bearing of 89 degrees approximately for a distance of 2,542.032 meters approximately to a point on the right bank of the Chansato Stream; thence down this bank of the Chansato Stream to its confluence with the Katete River; thence down the right bank of the Katete River to the point of starting. The above-described area, in extent approximately 566.58 hectares, is

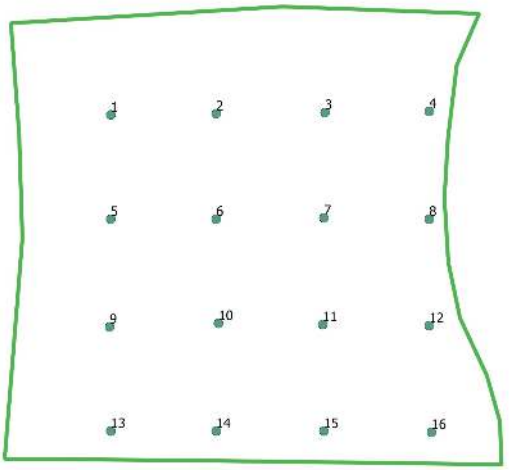
shown bordered green on Plan No. FR38 deposited in the office of the Surveyor-General and dated 10th December, 1949.

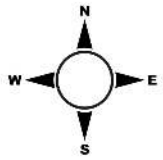
CONFIDENCE	BEACON/POINT NAME	LATITUDE DD	LONGITUDE DD	UTM EASTING	UTM NORTHING
GPS	Sinda Beacon OB268	-14.26572	31.66288	8422611	355756
GPS	Sinda Beacon OB282	-14.25541	31.66519	8423753	355999
GPS	Sinda Beacon OB289	-14.25366	31.61455	8423915	350534
GPS	Sinda Beacon OB279	-14.23006	31.61412	8426525	350472
GPS	Sinda Beacon OB276	-14.29100	31.59208	8419770	348134
GPS	Sinda SW Beacon	-14.30344	31.59233	8418393	348169
High	Sinda Beacon OB281	-14.22801	31.67080	8426788	356587

MAP SHOWING KATETE NATIONAL FOREST NO. 12 MARKED GREEN IN KATETE DITRICT

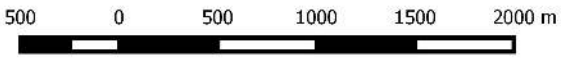


KATETE NATIONAL FOREST INVENTORY SAMPLE PLOTS.

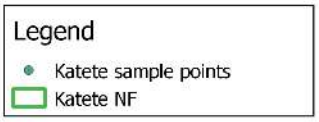




ID	X	Y
1	406225.724	8433703.866
2	406759.613	8433711.854
3	407311.104	8433719.896
4	407839.126	8433727.84
5	406227.732	8433162.747
6	406761.633	8433164.724
7	407307.245	8433172.745
8	407841.166	8433168.686
9	406223.942	8432603.569
10	406775.365	8432623.649
11	407303.409	8432619.581
12	407843.185	8432615.544
13	406231.819	8432062.471
14	406765.697	8432064.449
15	407311.307	8432066.459
16	407856.938	8432062.445

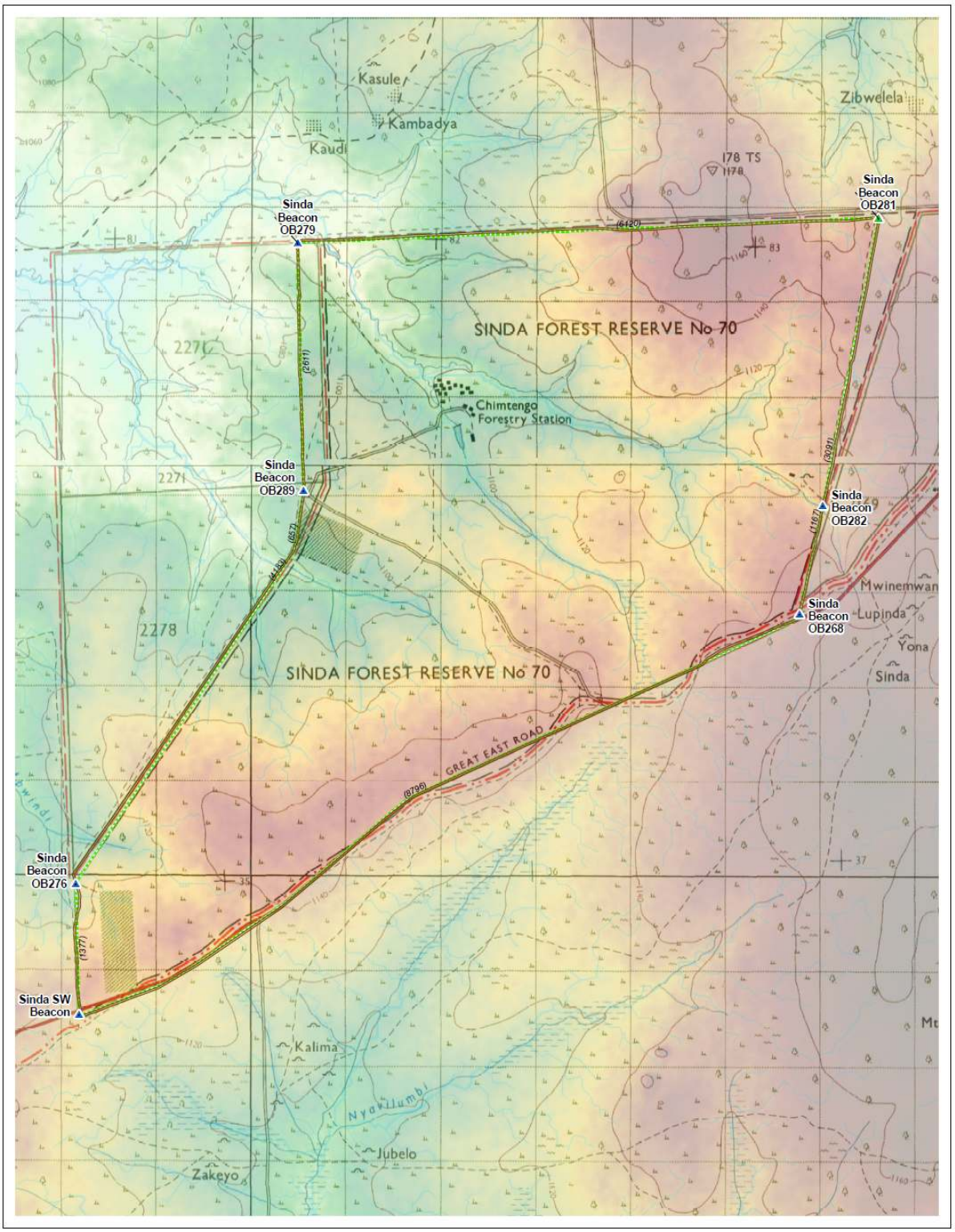


SCALE:1:20000



Sinda National Forest

3599 Ha.



Beacon/Corner ▲ GPS ▲ High ▲ Med ▲ Topo ▲ Low

Cut Line ═ Cut Line

Digitized FSRP Boundary ┈ High ┈ Med ┈ Low ┈ COGO

(Boundary segment in meters)

Projection: Arc 1950 UTM Zone 36S
Sources: Zambian Forestry Department Statutory Instruments, East View Cartographic, Inc (Topographic Maps), On-site GPS, Shuttle Radar Topography Mission
Cartographer: Michael Keys, USDA Forest Service
Date Published: 30 March, 2018

0 0.5 1 2 3 4 5 Kilometers

Annex II: Inventory Data

Species	Code	Density
Total		5,861.10
Acacia polyacantha	6	8.5
Annona senegalensis	25	224.9
Azanza garckeana	26	186.7
Bauhinia petersiana	34	263.1
Brachystegia boehmii	46	420.2
Brachystegia floribunda	48	123.1
Brachystegia longifolia	49	55.2
Brachystegia spiciformis	52	101.9
Cassia abbreviate	68	4.2
Cassia angolensis	69	55.2
Combretum molle	86	280.1
Dalbergiella nyasae	103	161.3
Dichrostachys cinerea	108	212.2
Diospyros mespiliformis	112	84.9
Diplorhynchus condylocarpon	114	1,833.50
Flacourtia indica	158	89.1
Julbernardia globiflora	188	110.3
Julbernardia paniculata	189	229.2
Lannea discolor	194	280.1
Lonchocarpus capassa	200	84.9
Markhamia obtusifolia	211	17
Mimusops zeyheri	218	89.1
Ochna pulchra	223	29.7
Oncoba spinose	228	17
Ozoroa reticulate	229	17
Parinari curatellifolia	233	34
Pericopsis angolensis	239	34
Piliostigima thonningii	244	63.7
Pseudolachnostylis maprouneifolia	258	280.1
Pterocarpus angolensis	262	4.2
Rothmannia engleriana	272	34
Salix subserrata	275	29.7
Steganotaenia araliacea	283	38.2
Sterculia quinqueloba	285	17
Strychnos cocculoides	288	123.1
Terminalia stenostachya	305	93.4
Uapaca kirkiana	310	72.2
Unknown	999	46.7
Ximenia Americana	328	12.7

Annex III: Demographics of major forest fringe communities

Demographics of major forest fringe communities of Katete NationalForest

NAME OF COMMUNITY	POPULATION		TOTAL POPULATION	Male headed HH	Female headed HH	total
	MALE	FEMALE				
Total	531	517	1048	157	29	186
Isreal Farm	6	6	12	2	0	2
Phiri Elemia	3	5	8	1	0	1
Enock Farm	3	4	7	1	0	1
David farm	4	3	7	1	0	1
Gershom Farm	4	4	8	1	0	1
Aliyele Farm	5	2	7	1	0	1
Daka Farm	7	8	15	1	0	1
Doscan farm	2	6	8	1	0	1
Aston Farm	5	2	7	1	0	1
George Farm	4	3	7	1	0	1
Laundani Farm	2	3	5	1	0	1
Jenala farm	4	1	5	1	0	1
Kapondeni Farm	2	3	5	1	0	1
Batizani	5	4	9	1	0	1
Fabiano Farm	1	2	3	1	0	1
Captain Farm	3	1	4	1	0	1
Nicolas Farm	7	2	9	1	0	1
Phiri Farm	4	2	6	1	0	1
Driver phiri Farm	10	10	20	4	0	4
Mayupa Dominic Farm	1	1	2	1	0	1
Nephitale Farm	4	4	8	2	0	2
Reuben Farm	4	3	7	1	0	1
Ndelemani Farm	11	6	17	5	1	6
David farm	4	3	7	2	0	2
Gaston Farm	12	11	23	4	0	4
Kondwelani Farm	6	3	9	1	0	1
Edward Farm	8	3	11	1	0	1
Yohane Banda Farm	6	6	12	2	1	3
Kangwelema mumba farm	18	26	44	4	3	7
Anelo Farm	3	2	5	0	1	1
Henry Farm	2	5	7	1	0	1
Yamikani	3	3	6	1	0	1

Mayadi	25	17	42	14	1	15
Galamukani	3	3	6	1	0	1
Chalendo Farm	13	11	24	3	0	3
Davy Phiri Farm	7	11	18	1	1	2
Zimbabwe Farm	9	11	20	2	1	3
Kolonaliyo Banda farm	3	2	5	0	1	1
Tilawilenji Mbewe Farm	3	2	5	0	1	1
Daliso Phiri Farm	6	6	12	2	0	2
Phiri Christopher Farm	3	6	9	1	0	1
Mwale Anelo Farm	8	3	11	1	0	1
Anelo Mwale Farm	11	6	17	3	0	3
Brown Farm	0	0	0	1	0	1
Katete Boarding School	142	167	309	52	7	59
Kangwelema Farm	8	10	18	1	1	2
Nkhondonanasi Farm	4	3	7	1	0	1
Zimanimoto Farm	4	2	6	1	0	1
Letter Farm	8	4	12	3	0	3
Juzyele Farm	31	33	64	5	2	7
Ndhlovu Joseph Farm	12	7	19	3	1	4
Mvula Juliet Farm	7	3	10	0	1	1
Kangwelama Farm 7	15	23	38	3	5	8
Bernard Phiri Farm	0	0	0	1	0	1
Dambo Lamanzi	5	2	7	1	0	1
Bulande Farm	41	38	79	9	1	10

Annex IV: Stakeholder consultations

The forestry department in Eastern Province in its preparations for the first ever forest management plans for 13 protected forest areas with support from Zambia Integrated Forest Landscape Project (ZIFLP).

In order to get gain support from the Chiefs in the preparation of the Forest Management plans before the proposed local validation meetings, it was inevitable that their Royal Highnesses are meet and have an input in these Forest Management Plans.

Therefore, the Chiefs under which Katete National Forest fall were targeted with the following objectives.

- To provide a platform of getting the views of the concerned Chiefs, in relation to the respective developed forest management plans for forest in their Chiefdoms.
- To collect and incorporate the agreed views from the Chiefs in the message pack for the local validation meeting.

2.1 Visitations

2.1.1 Paramount Gawa Undi

Prior to meeting Chewa Sub Chiefs, the first visit was to pay courtesy call to the Paramount Chief of the Chewa people Kalonga Gawa Undi who was represented by his Induna Hon. Lucas Phiri in Chipangali district. Katete National Forest of Snr Chief Kawaza fall in Kalonga Gawa Undi.

Figure 1: Meeting with Pramount Gwa Undi's Senior Induna Mr. Lucs Phiri in Chipangali District

The Team was led by the National Project Coordinator Dr. Tasila. During the courtesy call the Project Coordinator gave the background of forest inventories conducted in Katete National Forest and the interventions that ZIFLP is helping, the importance of the Luangwa landscape and the areas of intervention like, agriculture expansion through interventions like climate smart agriculture, support to Forestry department to continue protecting existing forest estates, support to nurseries, assisted natural regeneration and also support to establishment and management of Community forests.

The specifics of the visit were also made clear as to have an input from the Royal Highnesses in the development of the forest management plans.

The Senior Induna informed the team that through the Chewa Development Trust, Gawa is able to bring a halt to all illegal cutting in the Chewa territory, and he acknowledges that development in the territory can only come by working with other stakeholders. Paramount Kalonga Gawa Undi welcomed the ideas of developing forest management plans for the targeted forest and encouraged the team to move forward and report to Gawa challenges that we may be encountered with any of his sub chief during this engagement.

2.1.2 Senior Chieftainess Kawaza of Katete district- Katete NF –(567Ha)

Provincial Forestry officer displays the map to HRH Kawaza at the palace. Right team photo with HRH

HRH submission to the FMP

She submitted that the local people should take lead in the management and protection of these forest since these are their resources. Katete National Forest being threatened should be put under community forest (CF) to allow the locals do the management.

The Chiefs meeting was preceded by stakeholders Validation Meeting for Katete National Forest that was organized to validate the FMP for the KNF on 18th May 22. The Stakeholders Validation Meeting for the Katete National Forest brought together 23 participants: 7 females and 16 males drawn from government departments, civic leaders, CSOs, private sector, CFMG and traditional leaders.

The stakeholders responded in the affirmative. And upon their agreement

The stakeholders signed a joint declaration pledging to collaborate in the sustainable management of Katete National Forest.

“The local stakeholders of KNF agree that the forest is important for meeting local and outside commercial needs for wood and non-wood including grazing.

There is need for better control to regulate the access and use of the forest including local leaders and community groups.

We agree to work together to ensure that the forest is well protected and managed for sustainable utilization in partnership with Forestry Department and local Authority."

Annex V: Stakeholder validation meeting

REPORT FOR THE KATETE NATIONAL FOREST MANAGEMENT PLAN STAKEHOLDERS' VALIDATION MEETING HELD AT BEENZU LODGE, KATETE DISTRICT ON 17TH MAY 2022

1.0 Introduction:

The Forestry Department in 2019 undertook a forest inventory exercise to take stock of the forest resources in Katete National Forest (KNF) among others with the view of collecting data to inform the preparation of Forest Management Plans (FMPs). The FMPs are prepared to guide the community-government partnership in the management of protected forest areas (FPAs) in the Eastern Province. Following the forest inventory exercise, draft FMPs were prepared for all the FPAs in Eastern Province that were included in the Forest Inventory that was undertaken in 2019.

The Stakeholders Validation Meeting for Katete National Forest (KNF) which covers an area of 567Ha was organized to validate the FMP for the KNF which was developed by the Forestry Department.

The Stakeholders Validation Meeting in Katete brought together 23 participants: 7 females and 16 males drawn from government departments, faith-based organisation, civic leaders, local authorities, local community members and traditional leaders from Kawaza Chiefdom.

Opening prayers were done by Nduna Walaza.

2.0 Official Opening

Mrs. Anslow Muchelemba, Acting District Commissioner for Katete officiated at the KNF Chiswa East and West Local Forests FMPs validation meeting.

The Acting District Commissioner informed the participants that the formulation of Forestry Management Plans (FMPs) was required by law (Forestry Act No. 4 of 2015) to be validated by stakeholders. Hence the meeting was very important. Katete National Forest and Chiswa East and West Local Forest cover 567Ha, 202ha and 401ha respectively. The meeting was called to facilitate sustainable management of the KNF which has had no FMP. In this regard the District Commissioner implored the stakeholders to

constructively engage and contribute actively in the meeting. The Acting District commissioner reiterated that FMP formulation is a legal obligation and needed to be formulated and validated in a consultative and participatory way. The importance of the workshop could not be over emphasized

3.0 Meeting's Expectations

Mr. Katete facilitated the session on meeting's expectations. And the stakeholders brought out four main expectations:

i) learn and teach others
ii) listen and implement the resolutions

4.0 Workshop Objectives

The Acting DC presented the three meeting objectives namely:-

- Engage stakeholders to solicit their inputs on the draft FMP for Katete National Forest,
- To avail stakeholders with the proposed programmes contained in the Draft FMP for KNF and hear their views.
- To provide a platform for stakeholders to consider the contents, of the FMP for KNF in line with the existing legal framework.

5.0 Structure of Meeting

The workshop had three main components presentations, group work and plenary discussions

5.1 Presentations

Three main context setting presentations were made by the workshop facilitators: i) Policy and legal context; ii) Natural Resources profiles; and iii) Socio-economic profile.

5.1.1 Policy and Legal Context

The presentation on Policy and legal context was done by Mr. Alastair Anton, Community Forest Technical Advisor, ZIFLP. The presentation covered the roles and functions of protected forest areas (PFAs); and why they are established. To enhance comprehension of the information in the presentation imagery was also used. Also highlighted in the presentation was a brief overview of the Zambia Integrated Forest Landscape Project

(ZIFLP) and its significance in the sustainable forest management. The major highlights from the presentation were:

- The objective of ZIFLP that is "To improve the landscape management and increase environmental and economic benefits for the targeted rural communities in the Eastern Province" was highlighted;
- The ZIFLP provided the Forestry Department with resources to enable it undertake its mandate and functions;
- Also highlighted in the presentation were the reasons that prompted government to implement the ZIFLP in Eastern Province which include the following on-going degradation, deforestation, unsustainable livelihood activities, low crop yields, increased adverse effects of climate change, and low community participation in forest management:
- The importance of forests in line with the legal framework were highlighted in the presentation such as soil conservation, carbon sequestration, water cycle and habitat protection;
- The ZIFLP was a REDD+ Project, to determine where Green House Gases (GHG) were being emitted and the sources of these emission, Green House Gases (GHG) baseline survey was conducted which revealed 3 main sources of GHG emissions in Zambia: degradation 46%, forestry loss to agriculture 16% and emissions from agriculture soils at 14 %. The underlying causes of the 3 main source of GHG emissions were also highlighted;
- Through ZIFLP government was not only intervening to arrest the situation but also to make the communities aware of the imminent consequences if no action was taken at national and subnational levels;
- An overview of selected of existing pieces of Forest legislation were shared such as the National Forest Policy 2014, National Strategy to Reduce Deforestation and Forest Degradation, National Forestry Act No 4 of 2015 among others. Contents such as vision, objectives and measures were also shared;
- Also presented were the policy and pieces of legal documents pertaining to KNF. It was highlighted that KNF was gazetted as a national forest in 1952;

The meeting was being held because sustainable forest protection and management required concerted efforts and that FMPs formulation was a legal obligation that needed to be done in a consultative and participatory manner;

5.1.2 Situation Analysis

The presentation on situation analysis focused on the two surveys- Natural Resources Profiles and the other on the socio-economic profile, that were undertaken in the national forests 2019 and the results.

a) Natural Resources Profiles- Forestry Inventory Results including Change Analysis

Mr. Jackson Mukosha, presented the situation analysis highlighting the natural resources profiles and inventory results and change analysis. Major highlights from the presentation included:

- KNF was initially gazetted in 1952 with total hectarage of 567Ha;
- 51 species were recorded in KNF with 4 timber species
- The classifications of how trees were measured highlighted using teaching aids
- How volume of a tree is calculated was also explained
- The sampling design used to select the sample plots in the survey was systematic sampling design through which sample plots were created and data was accordingly collected from all the sample plots;
- Parameters that were considered in the survey were highlighted and explained.
- 5 main timber species were recorded in KNF during the inventory
- Biomass in KNF 1194.5 ton, with CO_2 597.2tons per hectare
- Total CO_2 value was estimated at USD 1.175.289.6 for 293,822.4tons @ $4 using the net area of 492ha;
- Comparison was made of the total volume per hectare which showed that KNF had the highest at 760m^3
- Proposed programmes in the draft FMP for KNF were also highlighted
- The summary of the findings of the survey were that: KNF was a good forest in fairly good condition with lots of trees with 20 – 29 cm and ≥40+cm diameter; had great potential for regeneration when not tempered with as there were lots of small trees,

b) Social-Economic Profile.

Mr. Muli Phiri from Zambia Statistics Agency made the presentation on Social-Economic Profile for KNF. Noteworthy highlights from the presentation included the following:

- The Province undertook the Socio-Economic Survey in Lundazi National Forest in 2019 alongside the Forest Inventory.
- At the time of the survey villages surrounding Lundazi National Forest with a total population of 1,048 (49% females and 51% males) and derived benefits from the forest.
- The survey involved a total of 186 (157 were male headed and 29 were female headed) households were.
- The main source of livelihood for 112 households of the people surrounding the Forest were dependent on farming as their main source of livelihood while 8 depended on small business and 64 were in formal employment and 2 others
- Majority 12 households depended on forest resources for traditional housing, 57 had improved traditional housing, 2 had mixed, 85 had conventional housing
- 68 used electricity for lighting, 76 solar, 40 used other
- 132 of the total sample population's main source of energy for cooking and heating was firewood, 42 electricity, 12 charcoal;
- Majority (116 households) of the sample population depended on rivers which had their sources in the KNF while 70 households used unprotected water source;

- 81.72% households of the total population expressed willingness to protect and manage the Katete National Forest;

Stakeholders' observations and Concerns:

Concerns was raised about what would happen considering that firewood was used for cooking by majority in the advent of conservation what was going to be done

4.2 Group Work

Following the sharing of the information on KNF's current condition and livelihood survey (well-being), two groups were formed to discuss the issues and threats affecting the Protected Forest Area (PFA) and identify hot spots using the following guide:-

- Identify issues and suggest possible solutions;
- Identify priorities and strategies;
- Identify uses of the forest and map where they were most prevalent
- Agree on broad zones for the forests based on the strategies that make
- Who should be involved;
- How we should work together

4.2.1 Group Presentations

The Groups made presentations to facilitate agreement of the strategies and partnership for management.

5.0 Collaboration Declaration Pledge

The facilitators summarized the presentations of the groups which they presented to the stakeholders for their reactions if it was indeed reflective of their inputs. They were informed that if they agree, the same would be adopted as a declaration of their pledge their intent.

The stakeholders responded in the affirmative. And upon their agreement

The stakeholders signed a joint declaration pledging to collaborate in the sustainable management of Katete National Forest. Below are the contents of the Declaration Pledge:

"We the local stakeholders of KNF agree that the forest is important for meeting local and outside commercial needs for wood and non-wood including grazing.

There is need for better control to regulate the access and use of the forest including local leaders and community groups.

We agree to work together to ensure that the forest is well protected and managed for sustainable utilization in partnership with Forestry Department and local Authority."

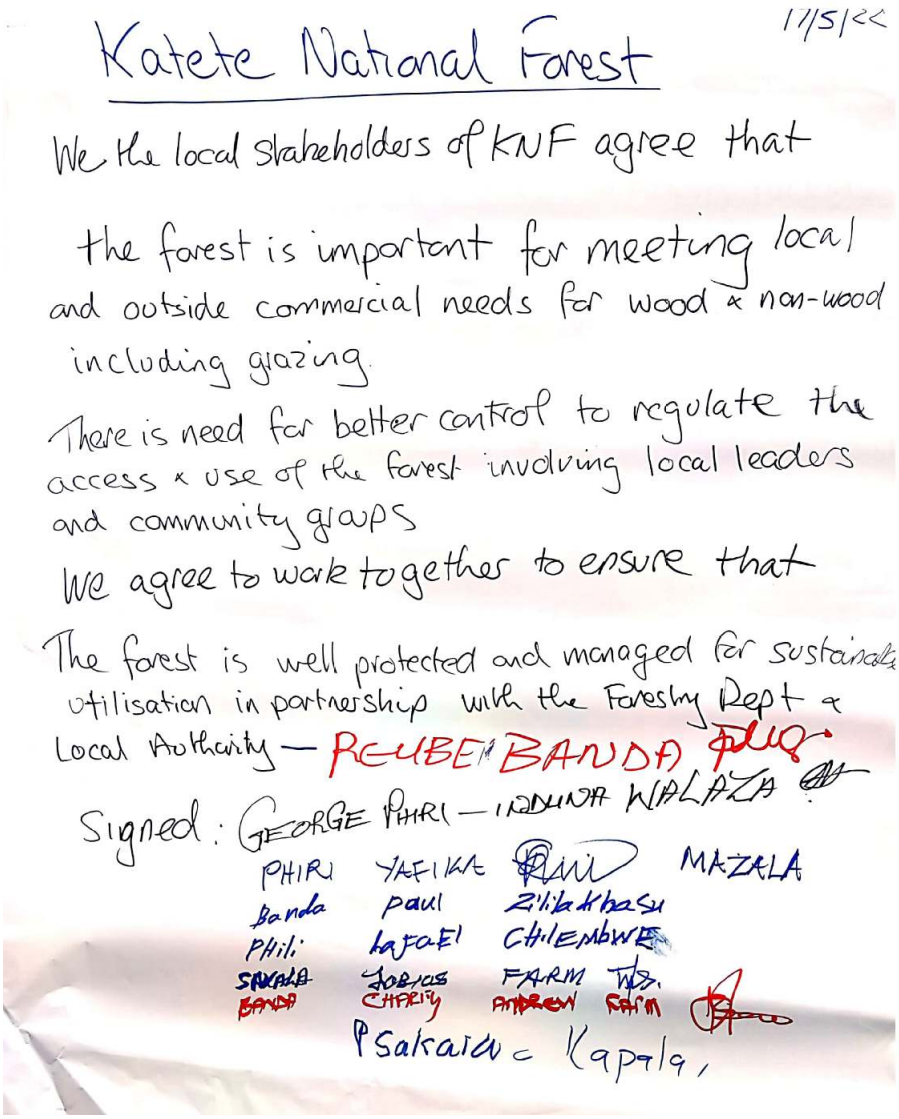


Figure 18: Stakeholders declaration to collaborate

6.0 Next steps

Mr. Anton facilitated the session on management institutional arrangements. The stakeholders agreed to the form a Management Institutional structure called "Local Community Coordinating Committee". Below were the agreed next steps/ way forward

- Forestry Department to record findings, issues, solutions/actions
- Representatives of heads to report to Her Royal Highness
- Form a KNF community coordination committee
- Forestry Department to development a proposal to ZIFLP for funding
- Complete and submit the FMP

7.0 Closing Remark and Prayer

Mr Katebe thanked everyone for attending the meeting and contributing through their inputs in perfecting the FMPs.

The PFO also thanked the participants for attending the meeting to discuss how to manage the forest. She emphasized that communities being the ones living in close proximity to the forest to protect it. Further she implored the stakeholders to go and teach the people in their communities about the need to protect the forest for the good of the present as well as future generations

Closing prayer by one of the stakeholders

Annex VI: References

References that were used in the collection of information for this Forest Management Plan included the following:

- Fanshawe D.B (1971), The Vegetation of Zambia, Forest Research Bulletin No. 7 Ministry of Rural Development, Republic of Zambia, Government Printer, Lusaka, Zambia
    - Hollingworth, L.T D. Johnson, G. Sikaundi, S. Siame, (2015) Fire Management Assessment of Eastern Province, Zambia. Washington. DC: USDA Forest Service.
- ILUA II (2006) Integrated Land Use Assessment Phase 1- Field Manual.
  The Food and Agriculture Organization of the United Nations and the Forestry Department, Ministry of Lands and Natural resources, Lusaka, Zambia
- ILUA II (2008) Integrated Land Use Assessment Phase 1- Report for Zambia.
  The Food and Agriculture Organization of the United Nations and the Forestry Department, Ministry of Lands and Natural resources, Lusaka, Zambia

  ILUA II (2014) Forest Biophysical Field Data Entry Booklet; Forestry Department, Ministry of Lands and Natural Resources, Lusaka, Zambia
- ILUA II (2016) Integrated Land Use Assessment Phase II- Report for Zambia.
- The Food and Agriculture Organization of the United Nations and the Forestry Department, Ministry of Lands and Natural resources, Lusaka, Zambia
- ILUA II (2016) Integrated Land Use Assessment Phase II- Technical Report for Eastern Province.

Annex VII: Cost of Implementing management actions

The various prescribed activities are outlined and their corresponding costs are indicated

Programme:	Forest Conservation through Community participation and Livelihood Development														
Specific Objective	**Prescribed treatment**	**Unit of Measure**	**Quantity**	**Frequency**	**Unit Cost**	**Total Cost Year 1**	**Total Cost Year 2**	**Total Cost Year 3**	**Total Cost Year 4**	**Total Cost Year 5**	**Total Cost Year 6**	**Total Cost Year 7**	**Total Cost Year 8**	**Total Cost Year 9**	**Total Cost Year 10**
To Enter into partnership with clear roles and responsibilities with surrounding communities	Establish community forest	No	8	1	145,000	145,000									145,000
	Forest enterprise development • Beekeeping • Mushroom collection & production		8	8	2000	16,000	17,600	19,360	21,296	23,426	25,768	28,345	31,179	34,297	37,727
To contribute towards meeting social, cultural and economic needs and improving the livelihoods of forest-adjacent communities.	Trainings; • Beekeeping • Mushroom drying • Gardening	No.	15	1	4000	60,000	66,000	72,600	79,860	87,846	96,631	106,294	116,923	128,615	141,477
To reduce carbon emissions from deforestation and forest degradation by ensuring community benefit from carbon credits.	Stake holder participatory awareness meetings(Traditional leaders, Government, NGOs and the community)	No	2	1	20000	40,000	44,000	48,400	53,240	58,564	64,420	70,862	77,949	85,744	94,318
	Establish an incentive benefit sharing mechanism			1	5,000	5,000									5,000
To reduce forest dependency by local communities.	Woodlot establishment for communities surrounding the forest.	No.	10	2	5000	100,000	110,000	121,000	133,100	146,410	161,051	177,156	194,872	214,359	235,795
Subtotal						**366,000**	**237,600**	**261,360**	**287,496**	**316,246**	**347,870**	**382,657**	**420,923**	**463,015**	**659,317**

Programme: Forest Protection, Restoration and Management and Conservation of Biodiversity

Specific Objective	Prescribed treatment	Unit of Measure	Quantity	Frequency	Unit Cost	Total Cost Year 1	Total Cost Year 2	Total Cost Year 3	Total Cost Year 4	Total Cost Year 5	Total Cost Year 6	Total Cost Year 7	Total Cost Year 8	Total Cost Year 9	Total Cost Year 10
To secure the boundary and define the extent of the boundary and prevent possible encroachment.	Carry out annual external boundary maintenance in accordance with the boundary maintenance schedule	km	7	1	1500	10,500	11,550	12,705	13,976	15,373	16,910	18,601	20,462	22,508	24,758
	Forest beacon maintenance	No.	14	1	650	9,100	10,010	11,011	12,112	13,323	14,656	16,121	17,733	19,507	21,457
	Erection of sign post on roads entering the Forest	No.	15	1	300	4,500	4,950	5,445	5,990	6,588	7,247	7,972	8,769	9,646	10,611
To significantly reduce levels of illegal forest product harvesting.	Conduct sensitization meetings	No.	24	1	2000	48,000	52,800	58,080	63,888	70,277	77,304	85,035	93,538	102,892	113,181
	Conduct forest patrols	No	72	6	1100	475,200	522,720	574,992	632,491	695,740	765,314	841,846	926,030	1,018,633	1,120,497
To reduce carbon emissions from agric soils and dependency on inorganic fertilizer	Promotion of Climate Smart Agriculture	No.	8	4	3000	24,000	26,400	29,040	31,944	35,138	38,651	42,516	46,767	51,443	56,587
To protect Forest Reserve from late fires	Conduct prescribed and early burning.	596Ha	1	1	5500	5,500	6,050	6,655	7,321	8,053	8,858	9,744	10,718	11,790	12,969
	Training the local communities on fire management techniques	No	5	1	2500	12,500	13,750	15,125	16,638	18,301	20,131	22,145	24,359	26,795	29,474
To ensure protection against pests, fire, and human damage for the sustainability of forest	Inspections for diseases and pests, and detection of possible illegalities.	No	4	4	15,000	240,000	264,000	290,400	319,440	351,384	386,522	425,175	467,692	514,461	565,907
To improve forest cover in the fringe areas of the forest reserve	Woodlot establishment for communities surrounding the forest.	No	20	1	1500	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738
To conserve and enhance the biodiversity of the forest reserve.	Promote local participation and ownership through meetings.	No	8	4	2000	64,000	70,400	77,440	85,184	93,702	103,073	113,380	124,718	137,190	150,909
Improve local awareness of biodiversity and its value.	Awareness on biodiversity with regard to indigenous knowledge through drama.	No.	8	4	2500	80,000	88,000	96,800	106,480	117,128	128,841	141,725	155,897	171,487	188,636
	Conduct meetings and drama performances to assess community understanding on forest use and	No	12	1	2500	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738
Subtotal						**1,033,300**	**1,136,630**	**1,250,293**	**1,375,322**	**1,512,855**	**1,664,139**	**1,830,553**	**2,013,607**	**2,214,967**	**2,436,464**

Programme: Plantation establishment and Mangement															
Specific Objective	**Prescribed treatment**	**Unit of Measure**	**Quantity**	**Frequency**	**Unit Cost**	**Total Cost Year 1**	**Total Cost Year 2**	**Total Cost Year 3**	**Total Cost Year 4**	**Total Cost Year 5**	**Total Cost Year 6**	**Total Cost Year 7**	**Total Cost Year 8**	**Total Cost Year 9**	**Total Cost Year 10**
To promote nursery management as a tree seedling production facility for the plantation and wider distribution	Exand and manage the existing tree nurseries	No.	1	1	10000	10,000	11,000	12,100	13,310	14,641	16,105	17,716	19,487	21,436	23,579
To incereasep roductivity in demarcated plantation areas	Undertake Silvicultural operations to maximise the production potential of the demarcated plantation areas.	No		1	250000	250,000	275,000	302,500	332,750	366,025	402,628	442,890	487,179	535,897	589,487
To improve livelihoods of the local community adjacent to the forest	Create employment for income generation to the communities around the forest.	No	1	1	80000	80,000	88,000	96,800	106,480	117,128	128,841	141,725	155,897	171,487	188,636
Subtotal						**340,000**	**374,000**	**411,400**	**452,540**	**497,794**	**547,573**	**602,331**	**662,564**	**728,820**	**801,702**
Grand Total						**1,739,300**	**1,748,230**	**1,923,53**	**2,115,358**	**2,326,895**	**2,559,582**	**2,815,541**	**3,097,094**	**3,406,802**	**3,897,483**

Ministry of Green Economy & Environment

The Zambia Integrated Forest Landscape Project is a Government initiative which provides support to rural communities in the Eastern Province to allow them to better manage the resources of their landscapes so as to reduce deforestation and unsustainable agricultural expansion; enhance benefits they receive from forestry, agriculture, and wildlife; and reduce their vulnerability to climate change.

Simultaneously the project is creating the enabling environment for emission reduction purchases to be done through the subsequent phase - the Zambia Eastern Province Jurisdictional Sustainable Landscape Programme (EP-JSLP).

Forestry Department

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