PUBLICATION DRAFT

REPUBLIC OF ZAMBIA

MINISTRY OF GREEN ECONOMY & ENVIRONMENT

MASUPE LOCAL FOREST (F85)

MANAGEMENT PLAN

2024-2034

APPROVAL PAGE

MASUPE LOCAL FOREST No. F85

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 & 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 Masupe Local Forest Management Plan (MLFMP) is formulated.

Signature:

Director of Forestry

Date:.....

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 Chief Misholo, Headmen and the community around Masupe Local Forest for the commitment to support this plan and importantly the sustainable management of Masupe Local 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 Plan 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. His 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 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

Sustaining forest resources remains promising with the development of a workable Forest Management Plan. Forests, woodlands and trees are among the nation's most important natural heritage resources. The National Forestry Policy's vision is to attain sustainable forest management at 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. The 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 Masupe Local 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. 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 an imperative so as to protect the remaining forest cover of Masupe Local Forest from degradation in order for it fully 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 policies into a well thought-out strategic framework to guide the preparation of annual operational programmes for effective and efficient management of this Local 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. Through promoting community involvement in the management of Masupe Local Forest, rights to forest products and uses of the forest will be negotiated whilst agreeing obligations and other responsibilities for protection and management activities with local communities.

This 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 users and other stakeholders who are concerned with the implementation of the plan.

The Forest Management Plan was prepared through a consultative, interactive and participatory strategic planning process involving all key stakeholders. The data collection and consultation process was financed through the Zambia Integrated Forest Landscape Project (ZIFLP) a Zambian Government initiative in the Ministry of Green Economy and Environment.

Forest resource & community well being assessment

During 2019 and 2021, the Forestry Department undertook forest resource assessments, engaging surrounding local communities and their traditional leaders as part of the enquiries for the purpose of preparing this forest management plan in accordance with the Forests Act, 2015. In parallel, ZAMSTATS undertook forest livelihoods and economic surveys with communities surrounding the forest reserves.

Traditional leaders were consulted and approvals to proceed with data collection and subsequent participatory land use planning processes. 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

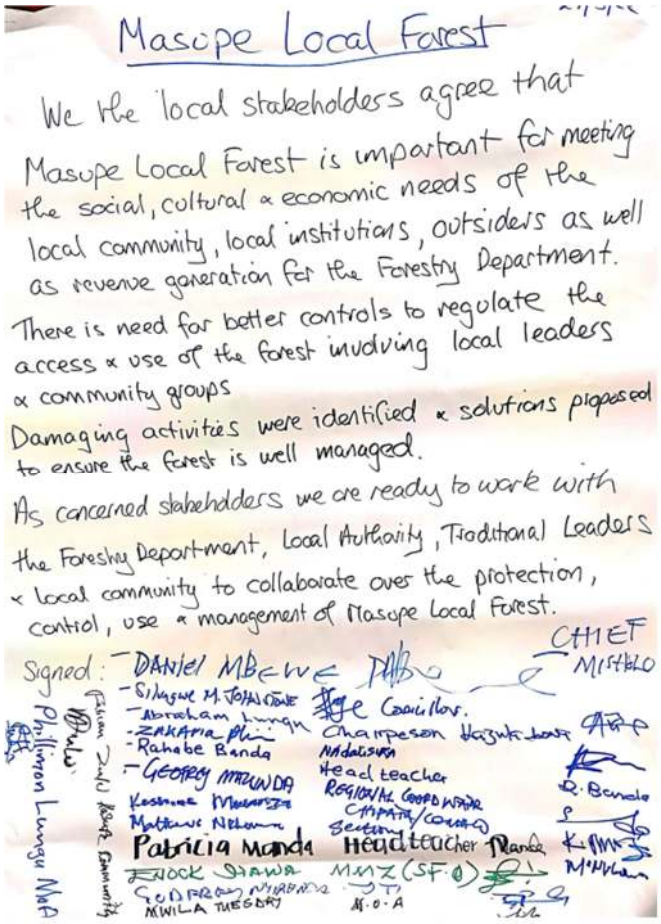
on the forest can be seen in the species abundance and size distribution in the areas assessed. These as well as the current Policies and development priorities can guide the short, medium and long term management of Masupe Local Forest.

Summary socio economic analysis

The livelihood survey conducted in October and November 2019 indicated that Masupe Local Forest is surrounded by villages and a few farming blocks with a total population of 1,225. 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 100 percent of all the households were willing if called upon to voluntarily support management of the forest reserve with Forestry Department. At time of survey, there were no squatters within the forest.

Forest change & issues analysis

A consultation meeting of stakeholders for Masupe Local Forest was held on 30th May 2022, at Jemita Lodge, in Chipata. 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.


Masupe Local Forest

We the local stakeholders agree that Masupe Local Forest is important for meeting the social, cultural & economic needs of the local community, local institutions, outsiders as well as revenue generation for the Forestry Department.

There is need for better controls to regulate the access & use of the forest involving local leaders & community groups

Damaging activities were identified & solutions proposed to ensure the forest is well managed.

As concerned stakeholders we are ready to work with the Forestry Department, Local Authority, Traditional Leaders & local community to collaborate over the protection, control, use & management of Masupe Local Forest.

Signed:

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 Masupe Local Forest.

The declaration confirmed that Masupe Local 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.

Objectives and management actions

Based on the policy and legal framework and the consultation process conducted, the General Objectives for the management of Masupe Local 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

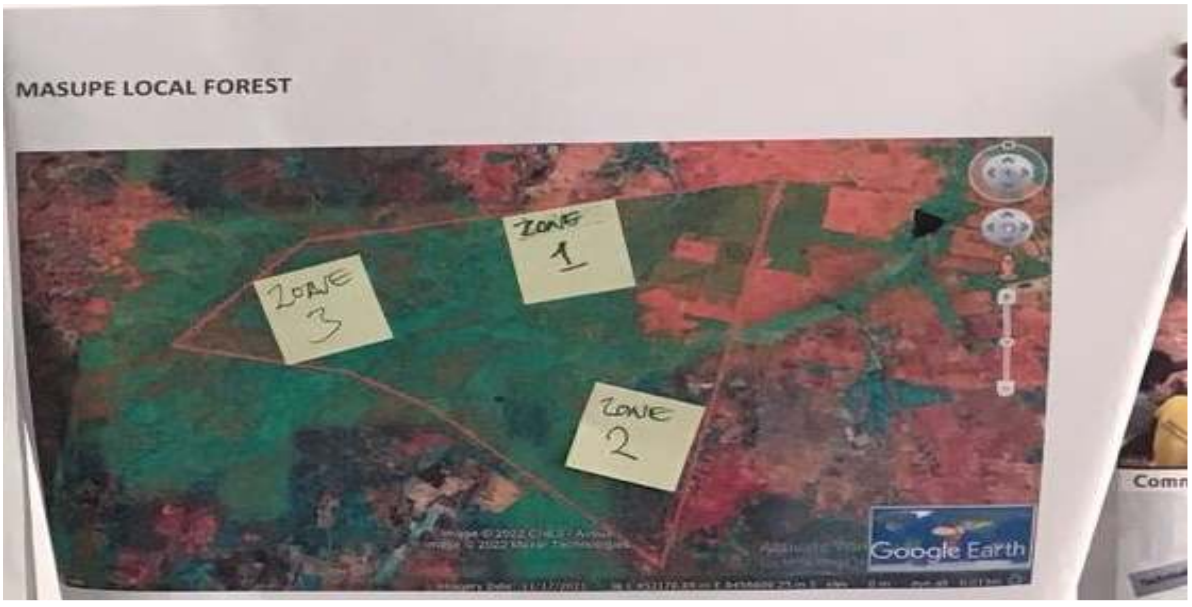
(e) To meet the social, cultural and economic needs of the local community and wider society involved in management of the Forest in a gender equitable manner.

Proposed management actions

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

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 Masupe Forest Local 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 Masupe Local 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 1 and 3 of the Local Forest;



Forest Protection, Restoration, Management and Conservation of Biodiversity

Masupe Local 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.

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.

Safeguards & other Crosscutting issues

In implementing the above management actions, cross cutting issues as well as other environmental and social safeguards 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 is core to this issue. Women shall be integrated into all aspects of management of Masupe Local Forest and empowered through equal participation in decision making, governance and benefit sharing.

Contribution to Emissions Reduction in Eastern Province

Improved management of Masupe Local Forest through the proposed interventions will directly address the need for emissions reductions through promotion of Sustainable Forest Management. This centres around expansion of community forestry and strengthening collaboration in the management of this and other protected forest areas in the Province. Carbon sequestration will also be achieved through plantation forestry and locked in timber products.

Delivering sustained results

The expected outcomes of participatory management through local stakeholder involvement in the management of this and other 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 will reduce the effects of climate change. 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 Local 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

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
FPIC	Free prior informed consent
GHG	Greenhouse gases
HFO	Honorary Forest Officers
MLFMP	Masupe Local 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>

	PROGRAMME	**COST (ZK)**
1	Forest protection	355,461.00
2	Biodiversity Conservation and Environmental education	181,562.00
3	Forest Conservation through Community participation and Livelihood Development	565,907.00
4	Human resource development	146,193.00
5	Infrastructure development	1,900,738.00
6	Research, Monitoring and Evaluation	686,163.00
	TOTAL	**3,836,024.00**

Table 1 Summary cost of forest management plan

Cost breakdown is provided in Annex VII

MASUPE LOCAL FOREST MANAGEMENT PLAN

1 INTRODUCTION

The Masupe Local Forest Management Plan (MLFMP) 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 forest reserve 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 Masupe local 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 forest reserve and the Forestry Department through the Green Economy and Environment (MGEE).

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.

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.

1.3. 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 of Masupe Local 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

Masupe Local Forest No. F85, approximately 468 hectares in extent forms part of the forest estate in eastern province. It is a protected area under Government Notice No. 264 of 1964. The Masupe Local forest located 15 kilometers from the city of Chipata along the great east road is dominantly peri-urban forest surrounded by villages and farms.

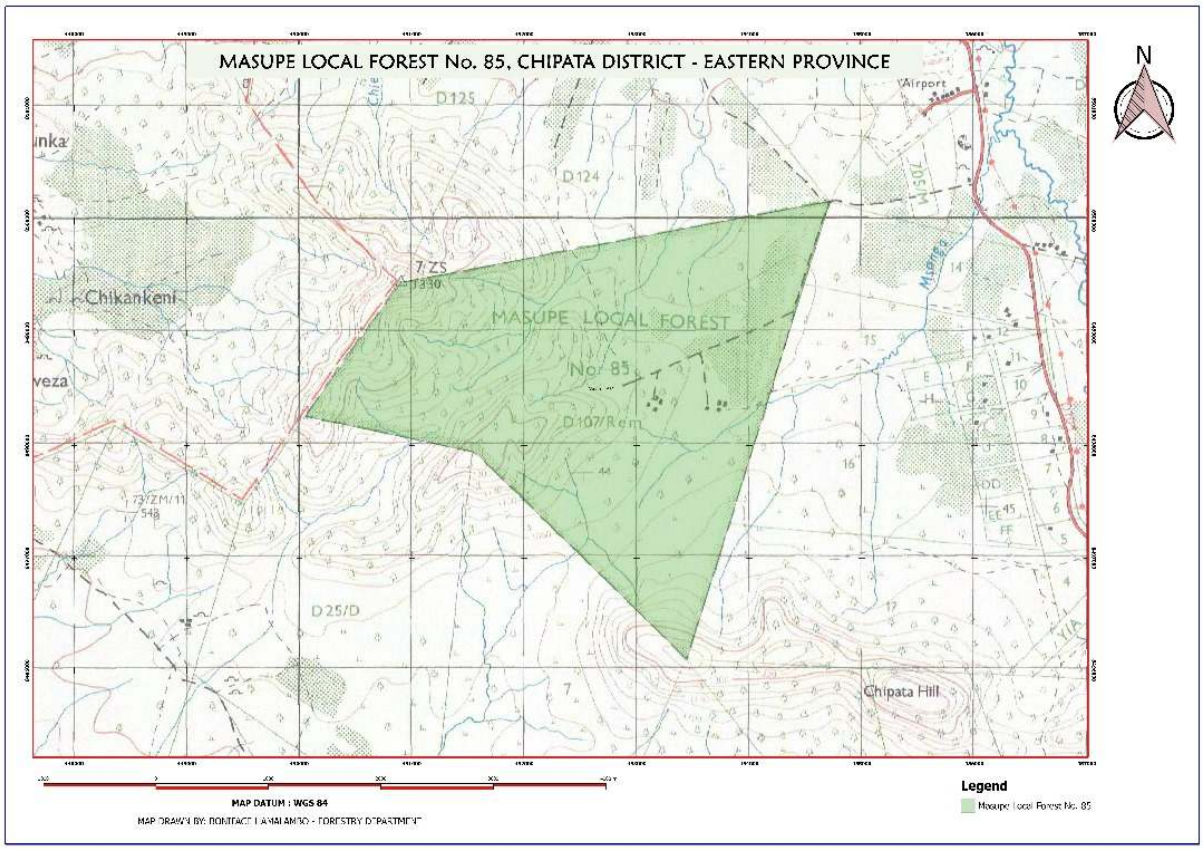


Figure 1: Map of Masupe Local Forest

A detailed description of the gazetted forest boundary is provided in Annex 1.

2.2. Physical Environment

Topography,

The Local Forest lies on a relatively flat land at an altitude of about 1050m above sea level. Part of the southern boundaries of the forest is bordered by dambo areas and has one (1) perennial stream in the forest area.

Geology

Geology of Masupe is one of the distinct and lithological complex consisting of predominant retrogressed mafic, felsic and politic granulite with biolite gneiss deformed under formed syenite.

Soils

Soils are well drained, deep to very deep, yellowish red to strong brown, friable, fine loamy and clay soils having a clear clay increase with depth. Sandy soils in some places of the forest is very evident and impacts species selection in plantation management.

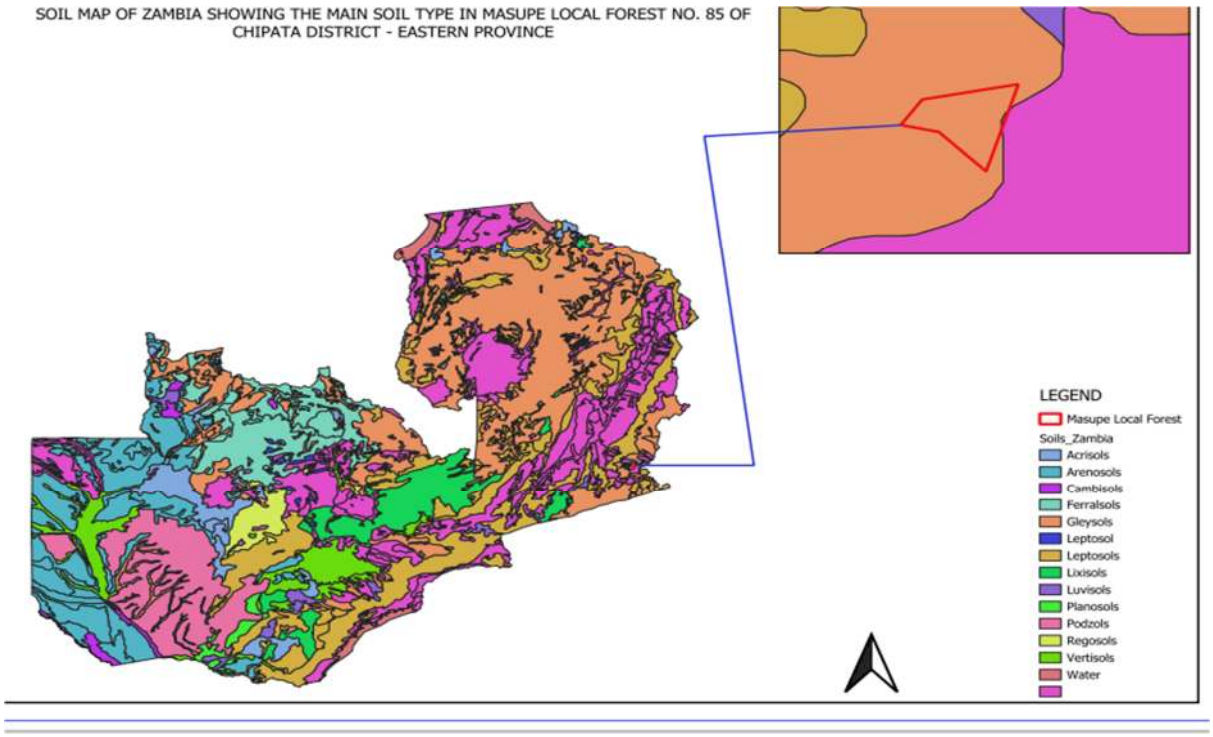


Figure 2: Masupe soil map

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.

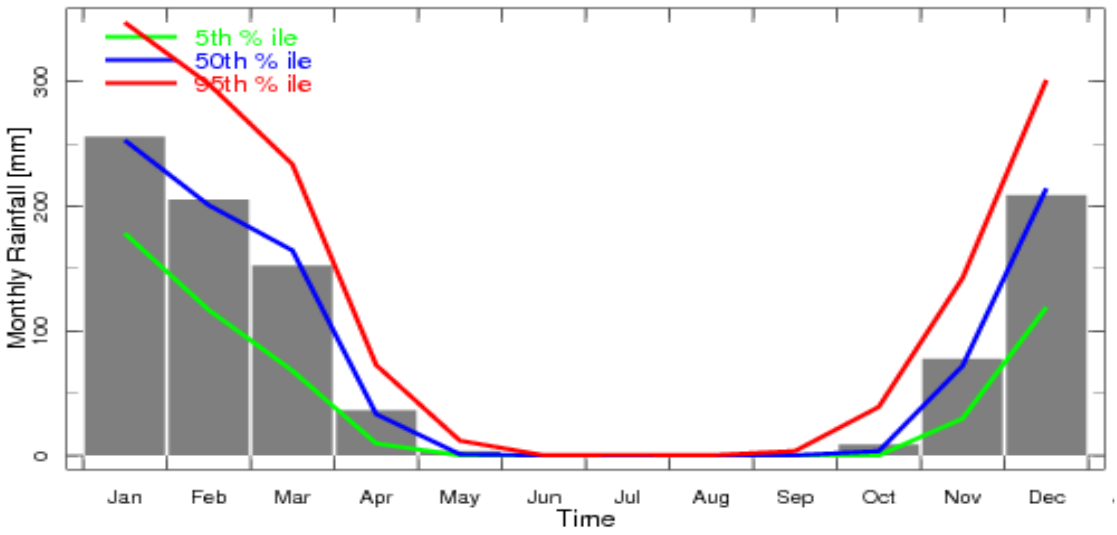


Figure 3: Monthly rainfall ***Source: The Zambia Meteorological Department***

Normally, temperatures are very high, especially during the dry months which occurs between August and December. The maximum average monthly temperature is between 27^{0}C and 34^0 C. The highest maximum temperature occurs in October. The lowest average temperature is between 10^{0}C and 17^{0}C during the cool dry season occurring especially between May and June.

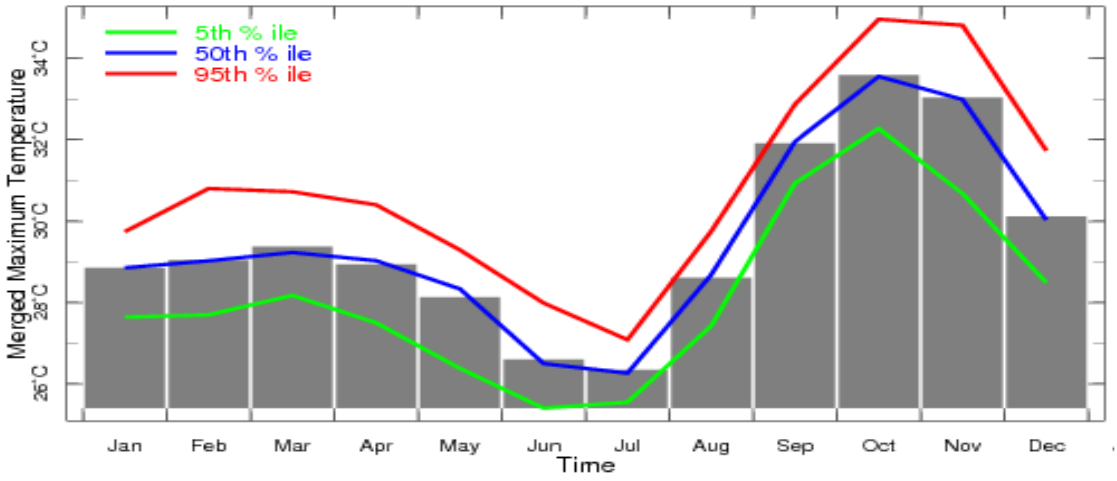


Figure 4: Monthly temperature ***Source: The Zambia Meteorological Department***

2.3. Biophysical Environment

Vegetation Type

Masupe Local Forest is a homogeneous forest. The vegetation type is Miombo woodland on the hilly and plateau with a diverse tree flora including *Julbernardia paniculata*,

B*rachystegia boehimii*, *Afzelia quanzensis*, *Parinari curatellifolia* and many other species with *Brachystegia speciformis* being the dominant species. A portion of Masupe Local Forest was planted with *Eucalyptus tetrocornis, Gmelina arborea, Khaya nyasica, solid bamboo etc* with the intention of creating a pole production plantation. Planting commenced through trials in 1978 with an intention of developing an area of 100ha, though this was not achieved.

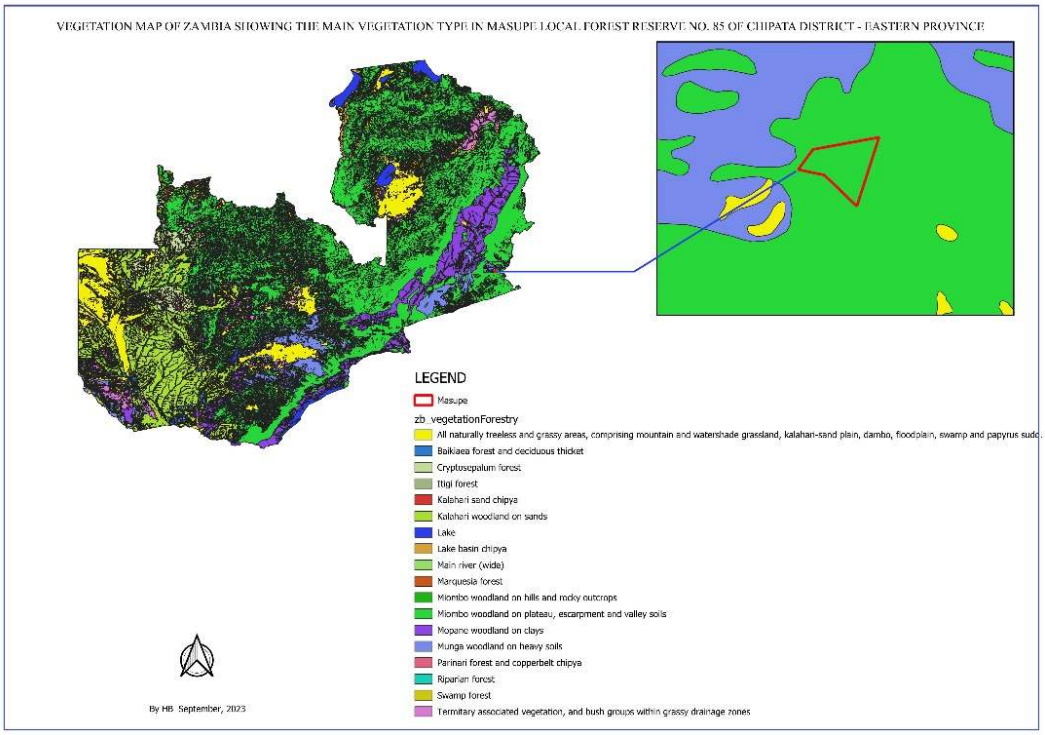


Figure 5; Masupe vegetation map

Figure 6: Gmelina & Eucalyptus compartments

During both the reconnaissance survey and the forest inventory, there was no physical observation of major wildlife. However, an indication of their presence was recorded through

observations such as foot prints and droppings as well as through oral interviews with some community members. Animals such as Monkeys, Rabbits, Guinea fowls and common Duikers are present.

Birds: Various bird species were sighted in the forest reserve. During the inventory a total of about 15 different birds species were seen Cattle egrets, Craws and Guinea fowls and

Insects: The common insects seen in the forest reserves include butterflies, Grasshoppers, Preying mantis, Bees and Ants,

Reptiles: Information on the type of reptiles in the forest reserve is poorly documented. However, the inventory team come across two reptiles Lizards and Snake were found in the forest reserve.

2.4. Infrastructure and Communication

In order to achieve the forest management objectives for Masupe Local Forest a certain level of infrastructure is required. Roads, vehicles and buildings are essential to sound management of the forest. But they cannot be maintained without considerable financial expenditure since the forest itself yields very little in terms of direct revenue.

Road and Track network: A 3.5km track road from Chipata-Mambwe tarmac providing access to Masupe Local Forest exists. The cleared boundary around the forest reserve and some firebreaks in the exotic plantations which equally act as access ways exist in the forest reserve.

Nursery and Plantation: The forest has a nursery and plantation. The nursery received a face uplift through the procurement of a green house, construction of a nursery shed, installation of a solar powered borehole with piped water and a wire fence by ZIFLP. The forest also has a plantation of 100ha though only 28ha planted.

Buildings: A new forest office has been constructed within the Local Forest meant to support day to day management of the plantation and forest area. The office was constructed in 2022 with financial support from ZIFLP. Other structures are five camp houses within the forestry office proximity.

Figure 7: Masupe offices

3 PAST MANAGEMENT

The Masupe Local Forest was declared and gazetted under S.I No.48 of 1973 as contained in the provisions of the Forests Act in force at the time. The reservation proposal of establishing Masupe Local Forest/plantation was based on consultations, including a series of meetings held with His Royal Highness Chief Misholo, the Councillor, owners of farms around and all communities living around Masupe.

- Employment Creation
- Supply of plantation poles and timber to Chipata City

Maps were later developed and in 1973 Masupe was declared as a forest reserve/plantation.

Two previous Plantation Management plans were found in the Masupe file, one was prepared in 1977-1982 and the second in 1983-1988 was submitted to the Chief Conservator of Forests.

The Public Service Reform Programme (PSRP) undertook an internal restructuring of the Department in 1997 and a number of officers were laid-off among the officers laid-off the majority of them were the ones who managed the forest stations. From 2004 and onwards dynamics changed; Economic downturn, increase in population, high poverty levels this was as a result of reduced manpower

Masupe Local Forest received support from USAID through the Forest Resource Support Programme (FRSP). The project provided resources to delineate forest boundaries, to erect beacons on the boundaries, to conduct forest patrols inside and outside the reserve, to enhance extension services and the production of information materials for communities living around protected forest areas help in promoting forest management and hence combating climate change. The project also helped in digitizing the maps of the reserve.

4 GROWING STOCK

Growing Stock Volume (GSV) is a key forest variable in the context of forest management and monitoring, it is also referred to as total volume (M3/Ha) of the bole or stem of all living trees in the forest reserve. Growing stock of the forest is important in measuring tree biomass and carbon by the density factor and it is used in ensuring Sustainable Forest Management. Additionally, Estimates on the growing stocks in Masupe Local Forest is based on the local level forest inventory which was conducted in 2019, the forest inventory 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.

From the inventory that was conducted in 2019 the estimated stocking per hectare of total volume and bole volume of 53.3m^3/ha and 17.4m^3/ha. Density or number of stems per hectare 514 with highest stems in diameter class 10 to 14. Average basal area of 7.0m^2 /ha. Biomass and carbon total 82.6 tons and 41.3 tons per hectare. The biomass and carbon stocks estimate methodological framework used is that developed by the IPCC documented in the 2006 guidelines for national greenhouse inventories volume 4, chapter 2 and 4.

The volume of other technical characteristics or use are computed per hectare as follow: Saw log 4.1m^3, Pole 1.4m^3, Firewood 21.3m^3, Medicinal 5.9m^3, Fruit 4.0m^3 and Others 16.1m^3. The seedlings for all species per hectare is 9,376.

The following table provides a summary of results of the forest inventory that are described in the sections below were the total volume by diameter class per hectare is 53.3 cubic meters with higher in diameter class 20 and above and evenly distributed in diameter below 20. The outcome indicate that there is moderate illegal tree harvesting.

Summary of results of the forest inventory

Values	0-4	5-9	10-14	15-19	20-29	30-39	40+	Total
Total vol m3/ha	0	5.9	4.9	6.3	14.8	11.1	10.3	53.3
Bole vol m3/ha	0	1.7	1.3	1.8	4.7	4.6	3.2	17.4
Density (SPH)	0	337	76	42	38	14	5	514
Basal area (m2)	0	1.3	0.9	1.0	1.8	1.2	0.8	7.0
Biomass (tonne)	0	9.2	7.6	10.2	23.4	16.9	15.4	82.6
Carbon (Tonne)	0	4.6	3.8	5.1	11.7	8.5	7.7	41.3
Volume by Species Use								
Values	**0-4**	**5-9**	**10-14**	**15-19**	**20-29**	**30-39**	**40+**	**Total**
Sawlogs	0	0.0	0.0	0.0	2.0	2.7	0.0	4.7
Poles	0	0.1	0.2	0.1	0.0	0.0	0.0	1.4
Medicine	0	1.2	0.8	1.9	1.6	0.4	0.0	5.9
Fruits	0	0.9	0.7	0.8	1.3	0.3	0.0	4.0
Firewood	0	1.0	0.9	1.2	4.6	5.0	8.6	21.3
Others	0	2.4	2.1	2.0	5.4	3.3	0.8	16.1
Seedlings								9,377

Table 2: parameters by diameter class/ha

1. Tree species abundance

The inventory data indicates that there are over 51 different tree species that include tree seedlings in the forest. However, the ten most frequent species are shown below.

Abundant Species in the Forest Reserve

Species	Local Name	Species Code
Annona senegelensis	Mpovia	25
Bauhinia petersiana	Mpondo	34
Brachystegia boehmii	Muombo	46
Diplorhynchus condylocarpon	Mchindula	114
Diospyros mespiliformis	Nchenja	112
Lannea discolor	Shaumbu	194
Pericopsis angolensis	Mubanga	239
Pterocarpus angolensis	Mukwa	262
Julbernadia paniculata	Mutondo	189
Swatzia madagascariensis	Ndale	295

Table 3: Abundant species of the forest

2. 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.

Density by diameter class/ha for all species

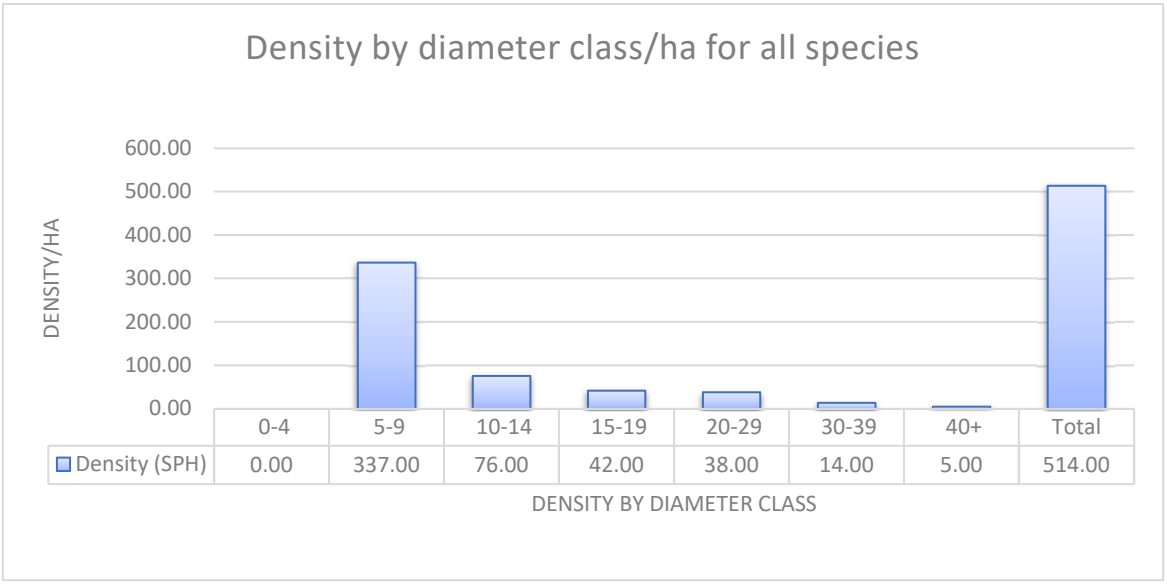


Figure 8: Density by diameter class/ha for all species

In Masupe Local Forest, a stocking density for trees ≥ 5 cm DBH was estimated as 514 stems per hectare. The density or number of stems by diameter class per hectare is higher in diameter class 05 – 14 and less from 30 and above. The outcome indicates that there is a lot of tree coppicing and regeneration especially the portion that used to be plantation.

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

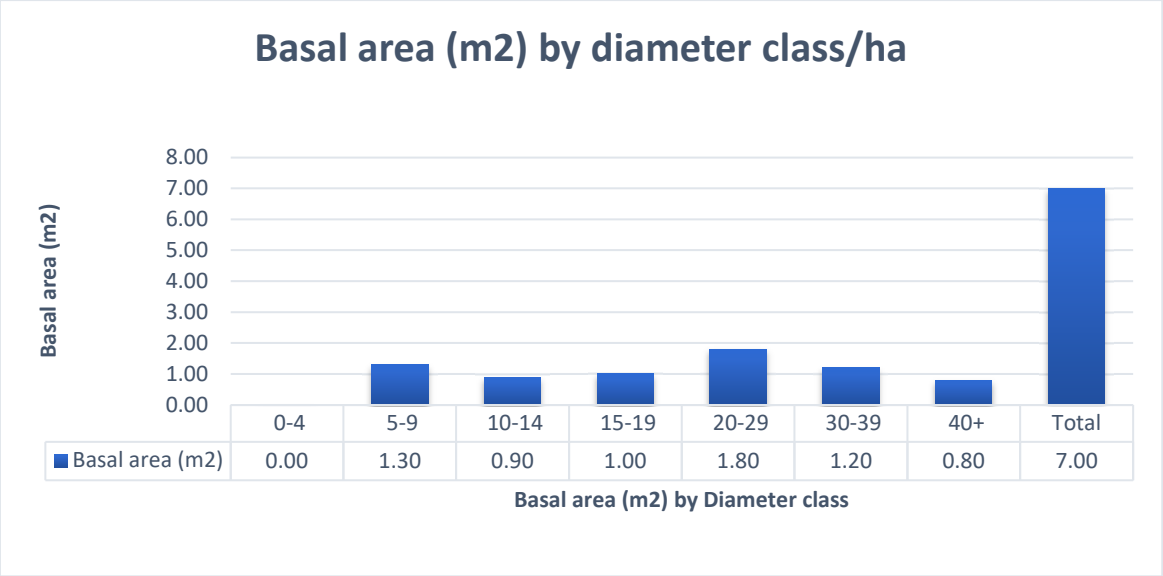


Figure 9: Basal area (m3) by diameter class/ha for all species

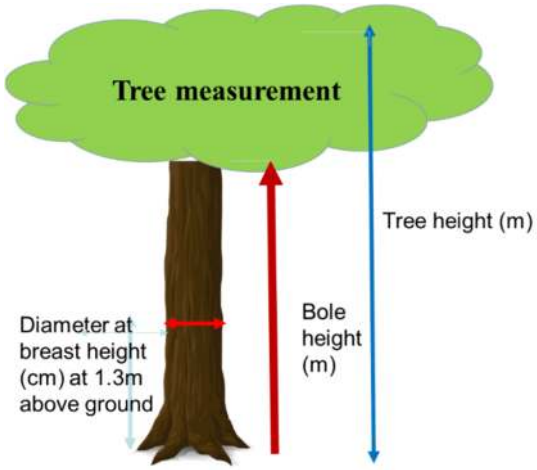
The basal area by diameter class per hectare for all species is 7.0 with higher in diameter class 20 - 29. The outcome indicates that there is a moderate of mature trees. The stocking by diameter class basal area per hectare is more in 20 – 29cm class. The data indicates that there has been not much tree harvesting. This indicates that the forest in terms of growth potential is in a relatively healthy condition allowing succession from one size class to the next higher one. The data also indicates this is a secondary forest.

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.

A figure of 7.0 m^2 per hectare is a high figure for basal area in a similar type of forest type by over a factor of 10. This confirms that there is a barometer of environmental sustainability.

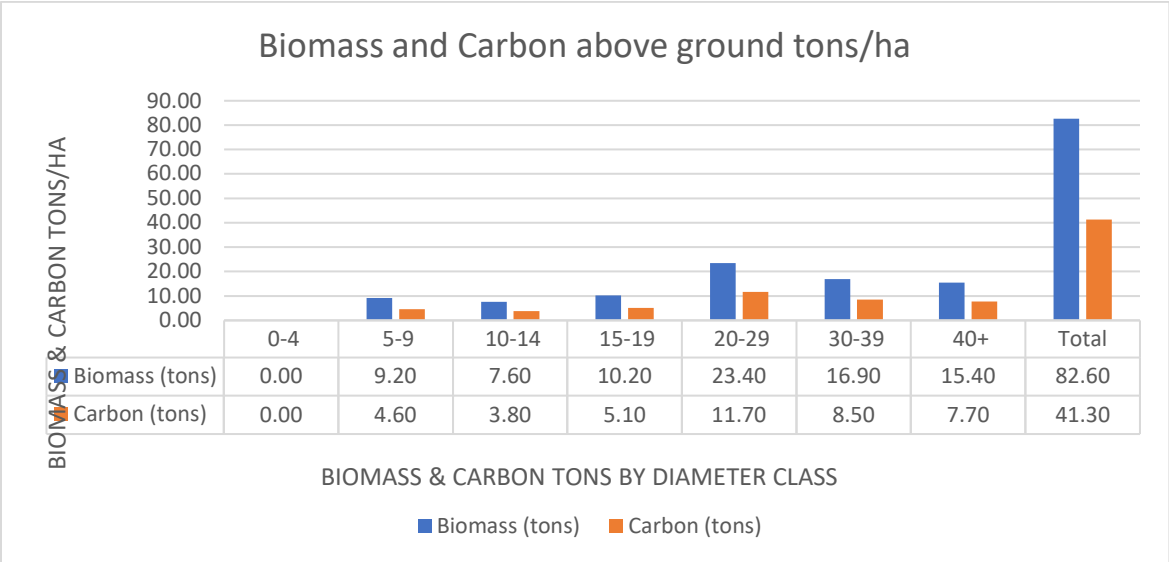
3. Total Volume, Biomass and Carbon estimate of all Species

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 Masupe is estimated at 53.3m³ /ha, with a total bole volume estimated at 17.4m³ /ha. Total Biomass for trees ≥5cm DBH is estimated 82.6 tonnes/ha and it has an above ground carbon estimate of 41.3 tonnes/ha.

Biomass and Carbon total (tons) by diameter class/ha for all species



	0-4	5-9	10-14	15-19	20-29	30-39	40+	Total
Biomass (tons)	0.00	9.20	7.60	10.20	23.40	16.90	15.40	82.60
Carbon (tons)	0.00	4.60	3.80	5.10	11.70	8.50	7.70	41.30

Figure 10: Biomass & carbon total (tons) by diameter class/ha for all species

Based on the inventory data, the biomass and carbon distribution by DBH class per ha are summarised in the Figure Note, this is standing carbon and not the amount of carbon that may be traded under carbon trading schemes which are based on measured reduction of emissions as well as carbon sequestered.

Technical characteristics or use (m³) by diameter class/ha for all species

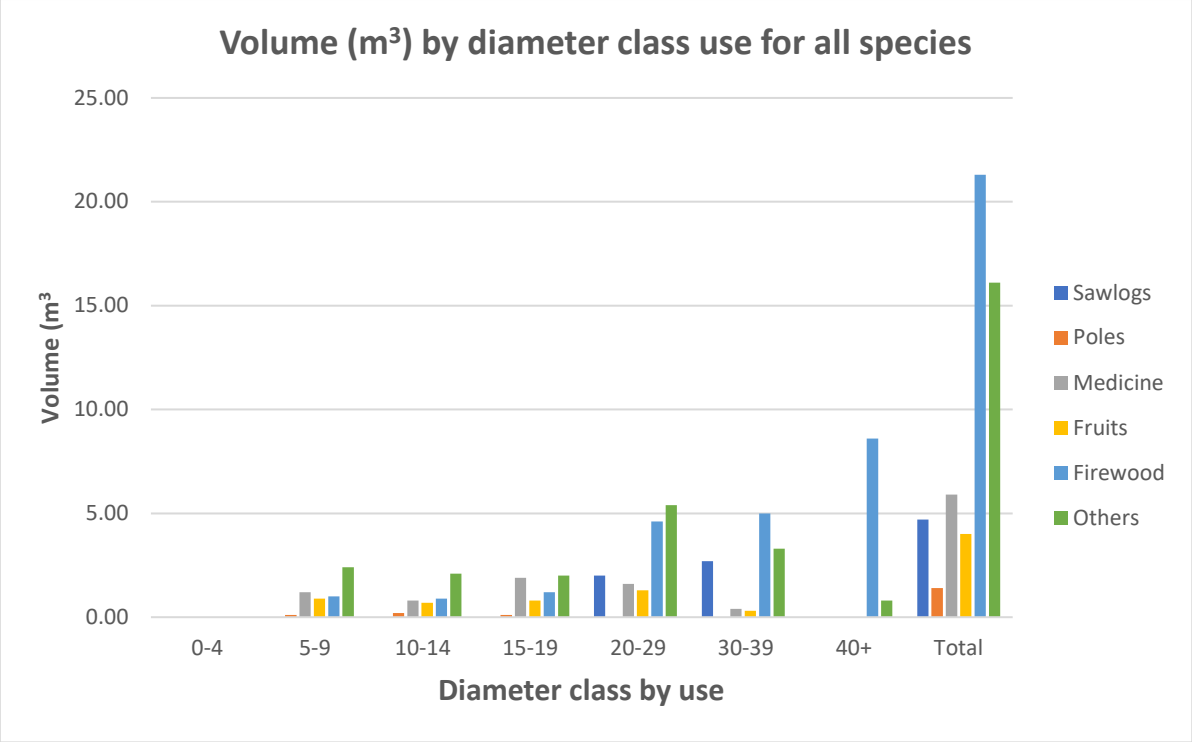


Figure 11: Volume (m³ by diameter class/ha for all species)

The volume of other technical characteristics or use are computed per hectare as follow: Saw-log 4.7m3, Pole 1.4m3, Firewood 21.3m3, Fruit, 4.0m3, Medicinal 5.9m3 and Others 16.1m3. The saw log is very minimum and cannot support commercial timber exploitation.

Total bole volume by diameter class/ha for all species

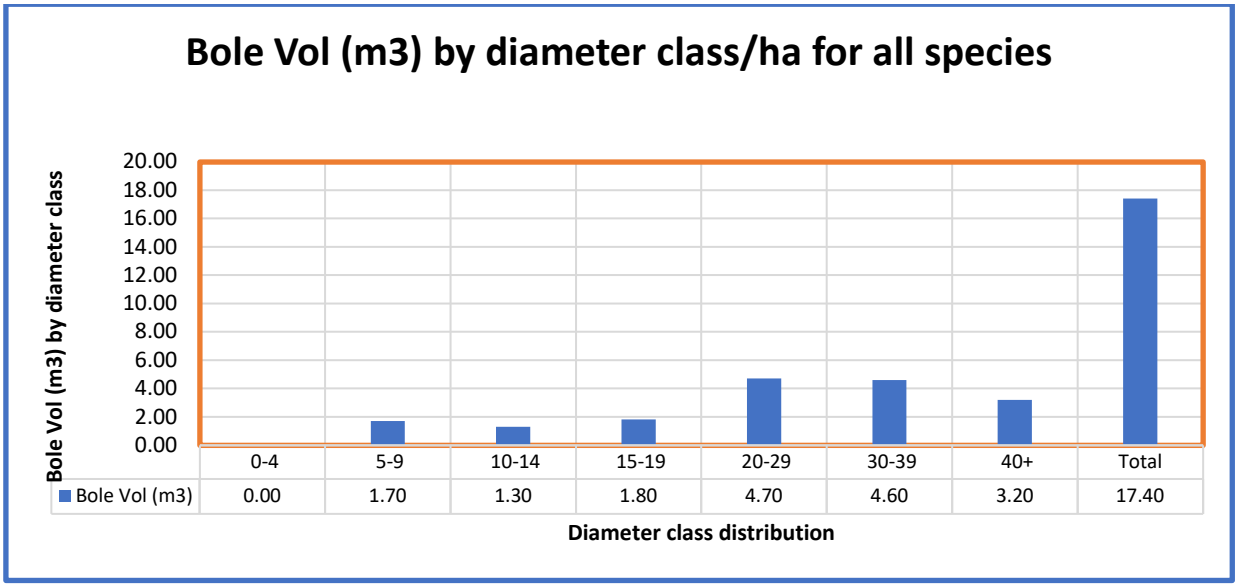


Figure 12: Bole volume (m3) by diameter class/ha for all species

The total bole volume by diameter class per hectare is 17.4 cubic meters with higher in diameter class 20 and above. The outcome indicates that there is moderate of illegal tree harvesting.

4. Volume of all species by merchantable quality

Trees in Masupe Local Forest are relatively straight, about 67% of the trees assessed are straight and 0% are bent and 31% are crooked.

Trees in Masupe Local Forest are relatively straight, about 68% of the trees assessed are straight and 0%are bent and 32% are crooked.

No	Description	Volume (m^3)/ha.	Explanation
1	Straight	35.7m^3	The entire bole length of these trees is straight
2	Bend	0m^3	-
3	Crooked	17.1m^3	These trees have bad form, they are crooked and cannot be sawn

Table 4; Volume of species by merchantable quality

5. Presence of Commercial Tree Species

Based on the inventory data, species used for high valued sawlogs such *Pterocarpus angiogensis and Swatzia madagascariensis* are only two (2) in the forest. Therefore,

harvestable volume for sawlog is 4.7m^3/ha. Masupe Local Forest in its current condition can sustain logging operations or timber concession for 2 years on a sustainable basis.

Volume of all species by use per hectare

No	Description	Volume (m^3)/ha.	Explanation
1	Sawlogs	4.7m^3	These are merchantable trees with the average diameter of 30-39cm but less than 40cm
2	Poles	1.4m^3	These are tree species with relative straight bole length with the average diameter at breast height of 5cm to 29cm
3	Fruits	4.0m^3	The tree species include all fruit bearing either edible or not edible
4	Medicinal	5.9m^3	All medicinal plants
5	Firewood	21.3m^3	These include all dead and or diseased trees which can be used for firewood
6	Others	16.1m^3	These include all tree species which are not classified in any of the above categories

6. STAKEHOLDER DEMOGRAPHICS

Introduction & Methodology

Forestry 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 Masupe Local Forest population and to measure the utilization and management of trees resources. Also, to determine the benefits the surrounding communities derive from 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 Masupe Local Forest can be translated as having an Average size of the household membership of about 5 per household.

i) Methodology

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

Data analysis

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.

ii) Household and Population dynamics

Masupe Local Forest as at 2019 livelihood survey was surrounded by villages and farms as indicated with a total population of 3,755. 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, Tobacco and groundnuts. The land tenure of the population surrounding the Masupe forest reserve is mostly under customary land tenure system, also partly owned by TBZ (Tobacco Board of Zambia 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 Masupe Local Forest was found to be mainly primary level that contributed **54 percent**, while tertially contributed about **4 percent**. The rest being No formal education and secondary education indicating 16 **percent** and **26 percent respectively**. As shown in the figure below:

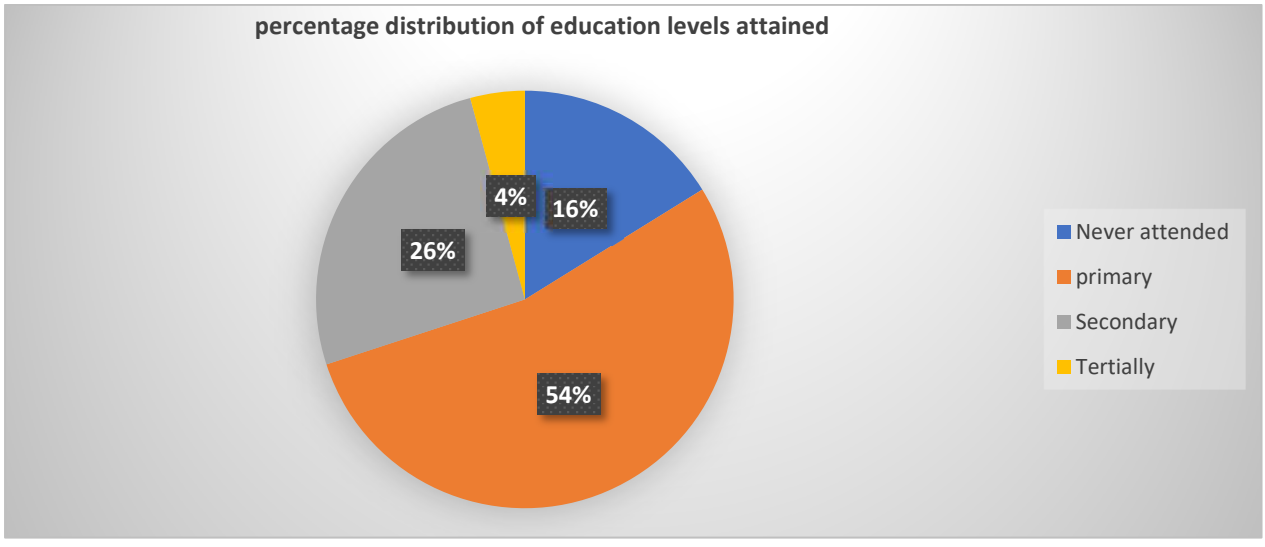


Figure 13: percentage distribution of education levels attained

Economic activity

Masupe Local Forest population depends on farming as their main occupation. The results showed that 83 percent of the household population surrounding Masupe Local Forest had farming as their main occupation, while the rest of economic activities contributed 6 percent those in paid employment and 8 percent in small businesses.

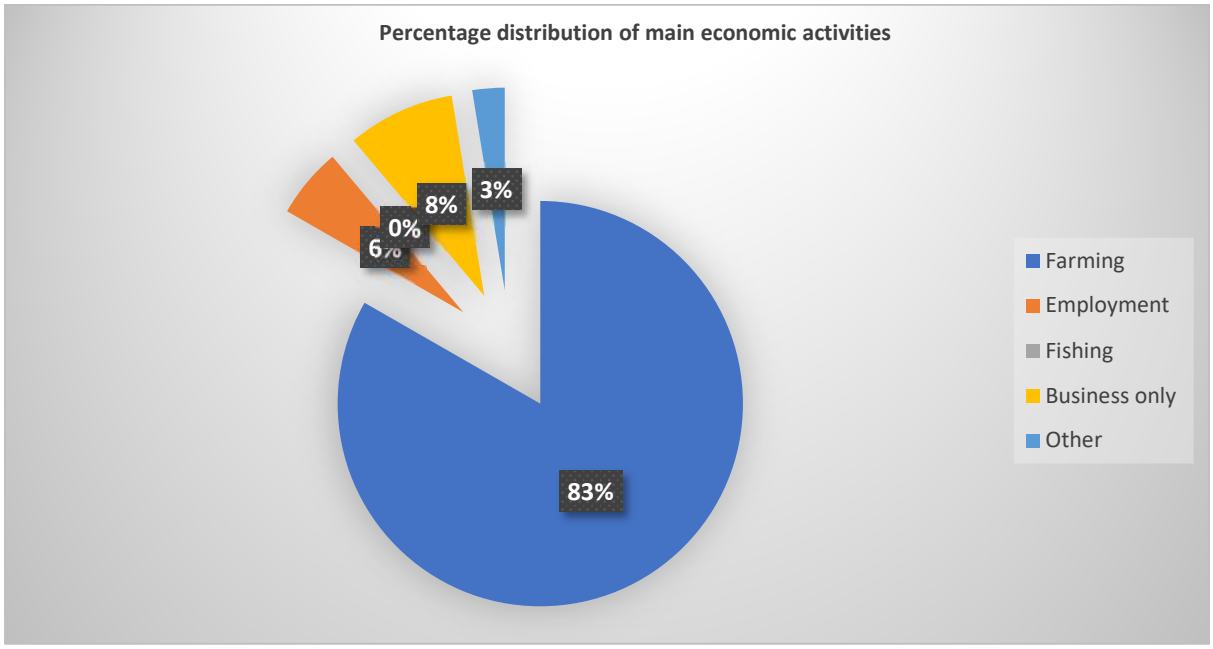


Figure 14: Percentage distribution of main economic activity

iii) Utilization and zoning of forestry resources

Masupe Local Forest consultative meeting held on 26th May, 2022, the stake holders identified the uses of the forest reserve and zoned the Masupe LF reserve as shown below:

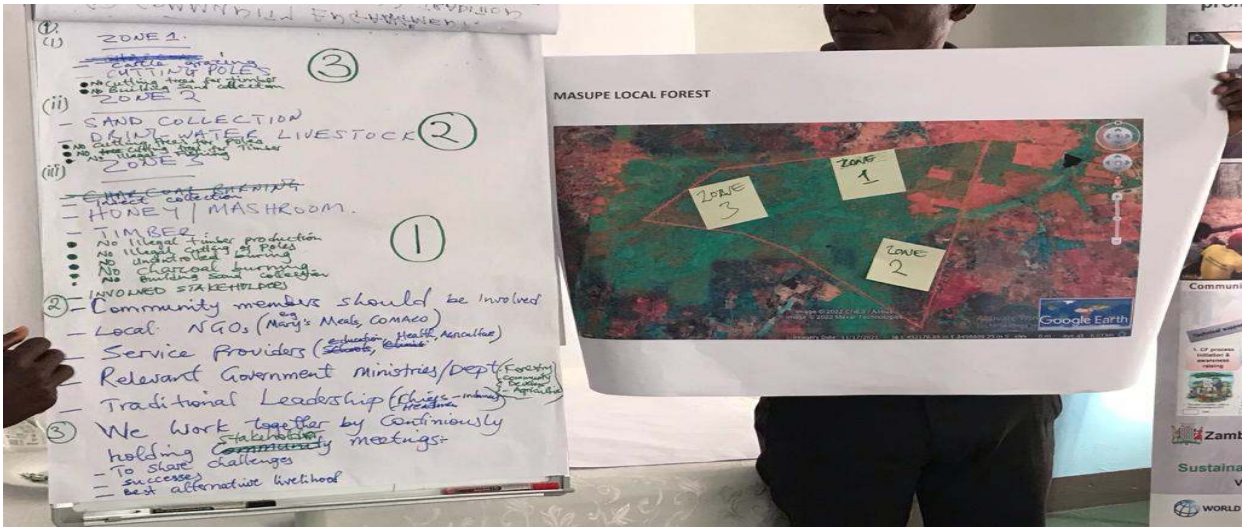


Figure 15: Community zoning of the Local Forest

The zones where identified for the following activities

Zone 1. Upper part

- No illigal timber harvesting
- No illigal harvesting of poles
- No uncontrolled burning
- No charcoal burning
- No building sand collection

Zone 2. Botton part

- Animal grazing and water for animals
- No illigal fishing
- Medicine

Zone 3.

- Animal grazing
- No illigal timber harvesting
- No illigal building sand collection
- Mushroom collection

iv) Types of Energy Used for Cooking

Almost all households in the localities surrounding Masupe Local Forest use firewood as their energy for cooking. The livelihood survey revealed a percentage of about 92 percent using firewood as energy for cooking, while 2 percent using electricity (national grid) while 6 percent use charcoal as main source of energy for cooking. The results show that there is more demand for firewood among the Masupe population

As in figure below.

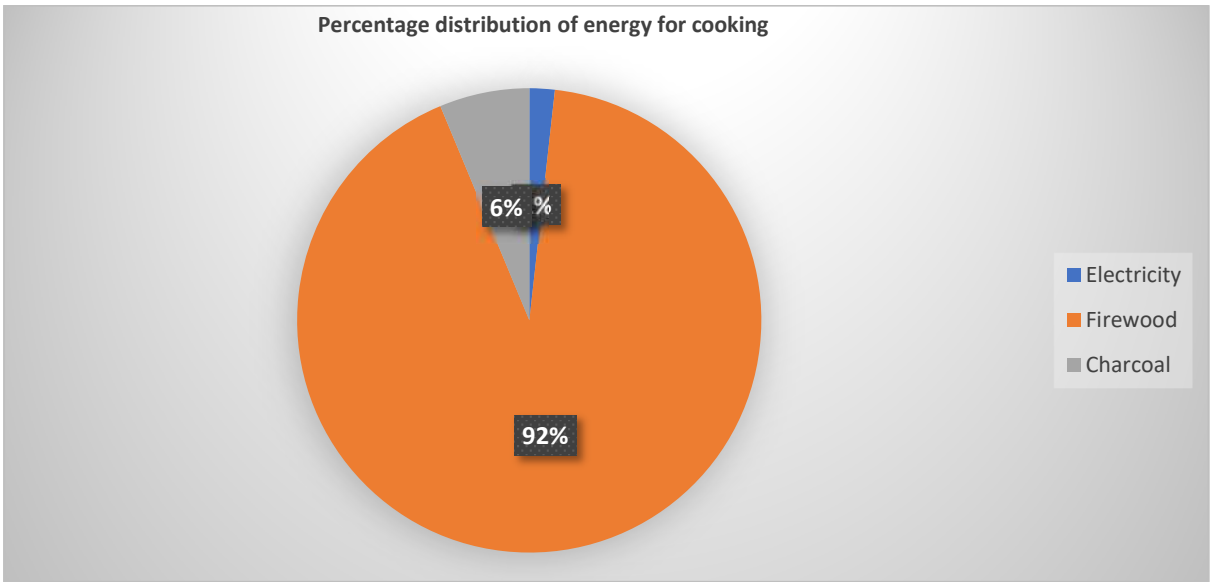


Figure 16: Percentage distribution of cooking energy

Main tree resources used for firewood

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

Main Tree Resources Used – Masupe Local Forest	
Brachystegia	*Bohemii*
Brachystegia	*spiciformis*
Julbernadia	*globiflora*
Diplorynchus	*condlocarpon*
Pericopsis	*angolensis*
Pseudolachnostylis	*maprouneifolia*
Combretum	*collinum*
Bauhinia	*petersiana*
Piliostigma	*thoningii*
Brachystegia	*manga*
Parinari	*curatellifolia*
Julbenadia	*paniculata*
Albizia *Afzelia*	*antunesiana* *quanzensis*

Table 5: Main tree resource by use

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

Non wood Forest products

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

Non wood forest products used by households surrounding the Masupe LF

Non wood Forest products
Mushroom Fruits Grass

Medicine Caterpillars

Table 6: Non wood forest products used

v) Willingness of community to participate in forest Management of the forest

The livelihood survey revealed that 90 percent of all the households surrounding the Masupe LF were willing if called upon to voluntarily support management of the forest reserve with forest department and other stake holders in the community.

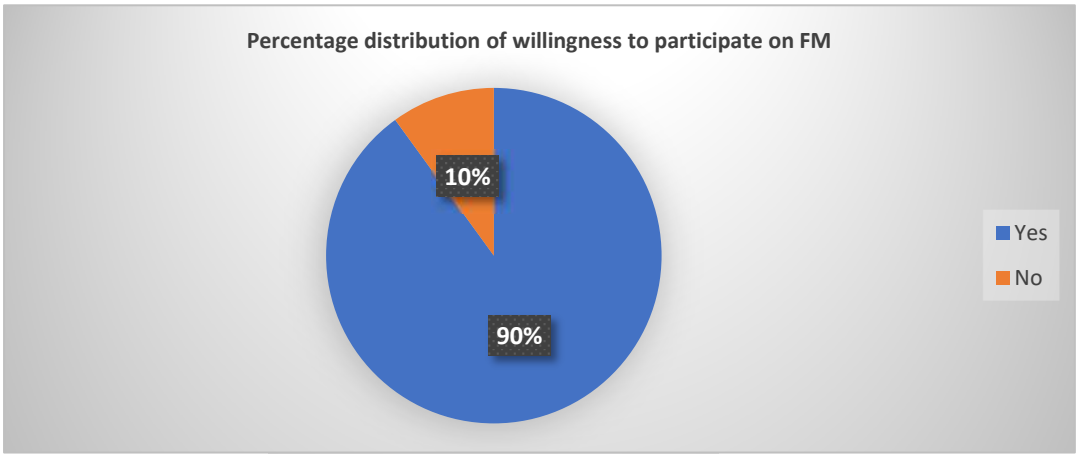


Figure 17: percentage distribution of willingness to participate on FM

vi) Land Ownership and Use

The livelihood survey for the communities surrounding the Masupe Local Forest revealed that most of the land owned by the households was for Agricultural activities which indicated 69 percent, followed by other uses at 17 percent, fallow land 9 percent, Land maintained as Natural forest 3 percent and land used for growing trees at 2 percent.
See figure below.

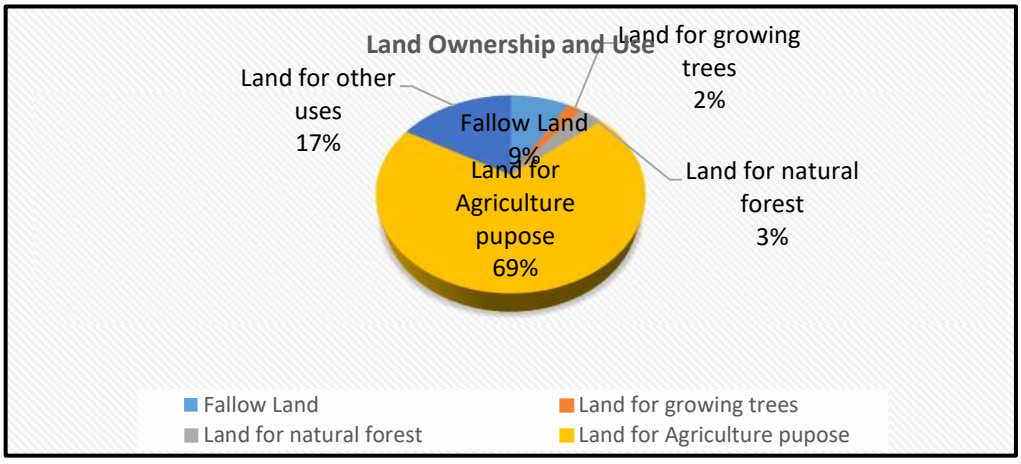


Figure 19: Land ownership and use

7. PROPOSED MANAGEMENT ACTIONS

The following management actions proposed for Masupe Local Forest reflect the statutory purpose of the Local Forest as set out in section 19 of the Forests Act of 2015. These include:

> **19.** Subject to the other provisions of this Act and any other written law, all land comprised in a Local Forest shall be used for the conservation and development of forests for— Purpose of Local Forest
>
> *(a)* the security of forest resources;
>
> *(b)* the protection of ecosystems, particularly the protection of land and water supplies of local strategic importance;
>
> *(c)* the utilisation of forest resources at the local level; and
>
> *(d)* meeting the social, cultural and economic needs of the local community.

i) Zoning the forest

This management plan recognizes the 3 zones identified during the stakeholder consultation of May 2022, which identified use of the forest, the main users of the forest, issues affecting Masupe Local Forest, local solutions and permitted activities. A further zone (4) covers the immediate area surrounding the Local Forest to act as a buffer which will the focus of development and emissions reductions related activities.

Zone 1: Plantation production zone

Zone 2: Indigenous forest sustainable use area

Zone 3: Indigenous forest sustainable use area

Zone 4: Development buffer zone

S/N	Species planted	Local name	Area (Ha)	Year planted	Key management activities
1	*Gmelina arborea*	Malaina	3.5	2018/2019	Fire protection measure (Weeding/ boundary maintenance
2.	*Khaya nyasica*	Mubaba	2	2018/2019	Fire protection measure (Weeding/ boundary maintenance
3	Solid Bamboo	Nsungwi	1	2018/2019	Fire protection measure (Weeding/ boundary maintenance
4	*Senna siamea*	Makheche	0.5	2018/2019	Fire protection measure (Weeding/ boundary maintenance
5	*Pinus kesiya*	Pine	0.5	2018/2019	Fire protection measure (Weeding/ boundary maintenance
6	*Albizia lebbake*	Mutangatanga	0.5	2018/2019	Fire protection measure (Weeding/ boundary maintenance
7	*Gmelina arborea*	Malaina	6.5	2019/2020	Fire protection measure (Weeding/ boundary maintenance
8	*Khaya nyasica*	Mubaba	3	2019/2020	Fire protection measure (Weeding/ boundary maintenance
9	*Tectona glandis*		1	2019/2020	Fire protection measure (Weeding/ boundary maintenance
10	*Albizia lebbake*	Mutangatanga	1	2019/2020	Fire protection measure (Weeding/ boundary maintenance
11	*Gmelina arborea*	Malaina	6	2020/2021	Fire protection measure (Weeding/ boundary maintenance
12	*Eucalyptus tereticornis*	Mbulugamu	1.5	2020/2021	Fire protection measure (Weeding/ boundary maintenance
13	*Khaya nyasica*	Mubaba	0.5	2020	Fire protection measure (Weeding/ boundary maintenance

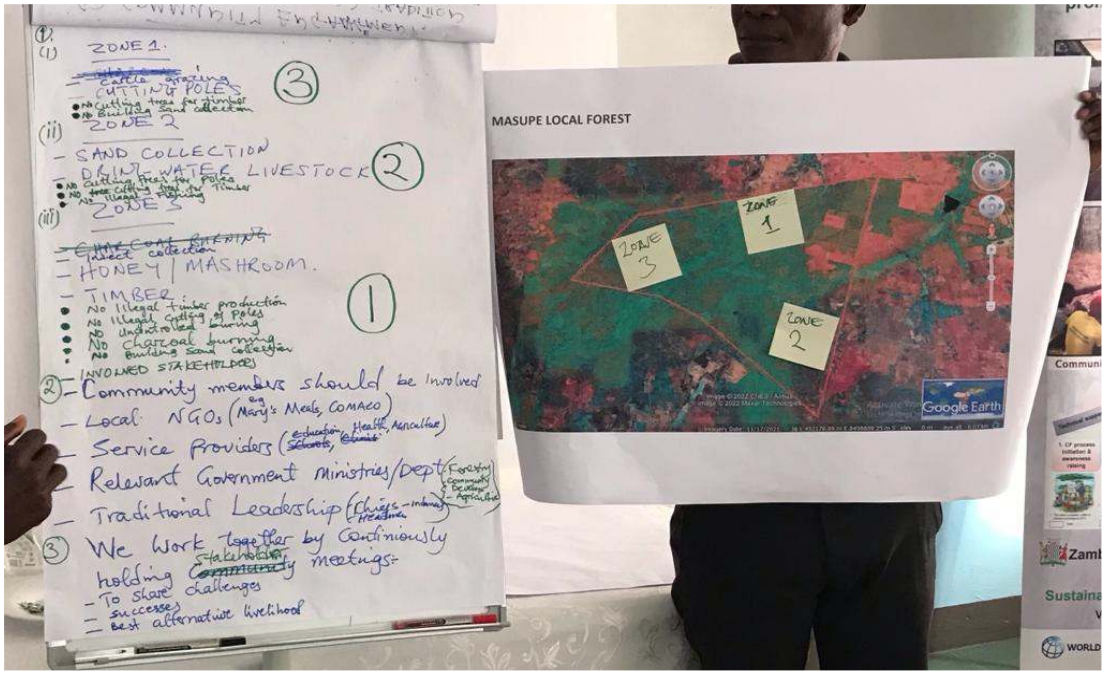


Figure 20: Zoning of Masupe forest based on community consultations

The following management approaches are proposed for the identified zones:

Zone 1: **Production forestry:** In order to fulfil its regulatory mandate of establishing plantations 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 Chipata and support local enterprise development. The plantation production zone includes the recently upgraded tree nursery, water reticulation system and office.

ii) Plantation Area

Masupe have about 100ha hectares for plantation expansion. The first plantations established at Masupe were in 1978 were 40ha of *Ecalyptus glandis* and 40ha of *Pinus Occarpa* was planted. The 80ha was since harvested. In view of the systematic sampling system followed, the plantation areas were not assessed separately. Currently a relatively small area totaling about 28ha. The much of the plantation area has overgrown indigenous

iii) Plantation Management (Compartments planted from 2018)

A plantation production plan will be developed to assist production forecasting and compartment management. This will assist timber supply to Chipata and surrounding areas.

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. Annual work plans will be developed by the community with technical guidance from the Forestry Department to ensure the sustainable management of these zones. Below is a map showing the extents of the community forest area and the production area

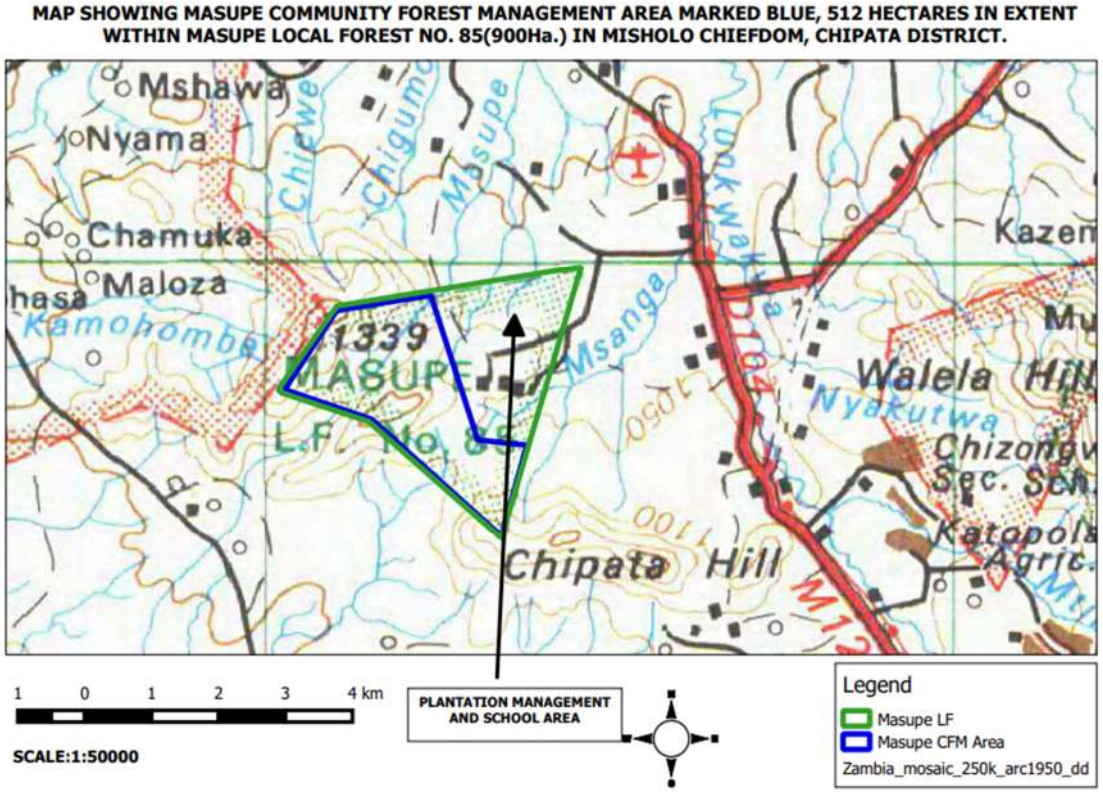


Figure 21: Masupe community forest management area

Zone 4: **Development buffer area:** This is the area immediately surrounding the reserved forest area where farming and settlements are located. These will be the focus for

forest extension activities, creation of community and household woodlots, use of energy efficient stoves, promotion of agroforestry and other climate smart agricultural activities.

iv) Core forest management actions

The identified management actions are described as follows:

Action 1: Forest Conservation through Community Participation & 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 Masupe Local 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 Masupe Local Forest. Within this management action, the following interventions will be undertaken in Zones 2 and 3 of the Local Forest as well as extension services and activities in Zone 4, the areas surrounding Masupe Local 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;

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 credits.	Establish an incentive benefit sharing mechanism through the carbon trading scheme to be established by Government in Eastern province	Stake holder participatory awareness meetings (Traditional leaders, Government, NGOs and the community)	FD/NGOs	Tonnage of GHG sequestered increased thereby income shared to community is improved year on 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 establishmen t.	FD/ Adjacent communities	Number of people dependent on the forests reserve reduced by half at mid-term review

Action 2; Forest Protection, Restoration, Management & Conservation of Biodiversity

Masupe Local 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. In addition, awareness of the importance of ecosystem services, conservation of biodiversity and climate change mitigation services of Masupe Local 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 (Zone 4).
- Promotion of energy saving cook stoves and production biomass for energy (Zone 4).
- 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 the Local Forest 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 boundary and define the extent of the boundary and prevent possible encroachment	Involve forest adjacent communities in Forest protection and management.	-Carry out annual Boundary maintenance. -Beacon maintenance - Erection of sign post on roads entering the Forest	FD/ Community	Distance in 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 reduce levels of tree cutting for wood energy.	Promotion of energy efficient Cook stoves and Alternative energy sources.	Training community members in construction of Permanent energy cook stoves. Provide incentives to people using the improved cook stoves.	FD/ DoE/ community	Volume of 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. Establishment of agroforestry tree nursery species in Masupe nursery.	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	FD	Hectarage of forest in the fringe areas increased year on year.

			surrounding the forest. Training the communities in assisted natural regeneration		
9	Improve local awareness of biodiversity and its value.	Seek greater participation of local communities in research and other biodiversity activities Such as eco-tourism, with the result that biodiversity values will become of more direct relevance to them.	1.Conduct research that documents and utilizes the indigenous knowledge of Forest-adjacent communities. 2.Promote local participation and benefits from eco-tourism as a means of creating better awareness of biodiversity	FD/Forestry Research	Levels of community participation in forest management activities is sustained over time.

Action 3: Forest plantation establishment & management

Forest plantations are important for the supply of poles, timber and firewood. Due to its proximity to Chipata City, the demand for construction timber and wood energy will increase over time there by increasing the pressures on Masupe Local Forest. Investment in the plantation area is therefore critical in order to meet future demand. The programme will involve the rehabilitation of plantations in Zone 1 from which the products will be derived. The following shall be the interventions which will be employed;

- Production forecasting, market analysis and development for a plantation management plan.
- 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, 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	Create employment for income generation to the	Silvicultural and forest protection operations	FD/Community	Income of local community adjacent to the forest increased

adjacent to the forest	communities around the forest.			

v) Environmental and social safeguards and other crosscutting issues

The Forestry Department shall ensure that the management of Masupe Local Forest is carried out in accordance with the Environmental and Social Standards (ESSs) in relation to national policies as well as international standards and agreements, both multilateral and bilateral as appropriate. Existing requirements are set out in the National Strategy to Reduce Deforestation and Forest Degradation, 2016 as well as new requirements that may come into force through the Eastern Province Jurisdictional Sustainable Landscapes Programme. In implementing the indicated management actions, these safeguards and other cross cutting issues will be mainstreamed in all aspects of forest management. In view of the participatory approaches applied in the development of the FMP and follow-up actions to promote community forestry it is expected that this FMP will have a positive impact upon local livelihoods and to provide support for the development of more sustainable or alternative livelihoods, where needed.

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 Masupe 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 Masupe Local 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 for social equity wellbeing and empowerment through sustainable development	Ensure that all environmental and social impacts, risks and liabilities are identified and mitigated. Identify training needs. Promote ownership and access to forest products and services.	Awareness raising Short courses Exchange visits Refresher courses	FD/NGOs	All crosscutting issues mainstreamed in all forest management aspects. Zero grievances raised. Grievances addressed and closed within 3 months

vi) Environmental Education

Environmental education is the key to ensuring the future of Masupe Local Forest. With improved understanding and appreciation of its importance especially amongst the surrounding local communities, there will be less pressure on this forest with regards to destructive activities. In the long term, improved environmental education will lead to a better understanding of the importance of conserving Masupe Local 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	1. To target a wider range of groups in the community through different	-Conduct meetings and drama performances to assess community understanding on	FD/MOE/NGOs	Number of awareness raising activities undertaken

	the forest, its importance, and the need for its conservation	actions including school children, and headmen.	forest use and conservation. -Sensitization on Climate change through radio. - Produce pamphlets on the 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 and climate change. Conduct study visits to other areas and projects to gather practical and potentially useful experiences from elsewhere.	FD/ Other Partners	Number of awareness raising activities undertaken

vii) Infrastructure Development

In order to achieve the forest management objectives for Masupe Local 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 Masupe 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

8. STAKEHOLDERS ROLES AND RESPONSIBILITIES

All key stakeholders will be involved in the implementation of the Masupe 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 with oversight from Provincial 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 Forest is a natural resource asset within the district boundary supporting local economic development and wider wellbeing of the community.

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 cannot 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 Local 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 Masupe Local 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 Masupe Local Forest and therefore wellbeing of surrounding communities.

9. 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 also be based on annual work plans that will be prepared for Masupe Local Forest which will operationalize the management actions described in Chapter 6.

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 MLFMP including the impact of the FMP on the wellbeing 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.

Evaluation

The MLFMP 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.

Monitoring 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.

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.	Records, reports and photographs. -Community Visits.	The Plan is successfully implemented Availability of funds

	-Crop and livestock yields.		
Environmental Education	Number 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.
Infrastructure Development	Number and type of infrastructure Developed/ maintained	Records Monitoring and evaluation reports	The Plan is successfully implemented Availability of funds
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

Table 7 Strategic monitoring indicators

10. ANNEXES

Annex I: Declaration Order, Topo Map & Inventory Map

SECTIONS 5 AND 6-THE LOCAL FOREST NO. F85:

MASUPE (DECLARATION) ORDER

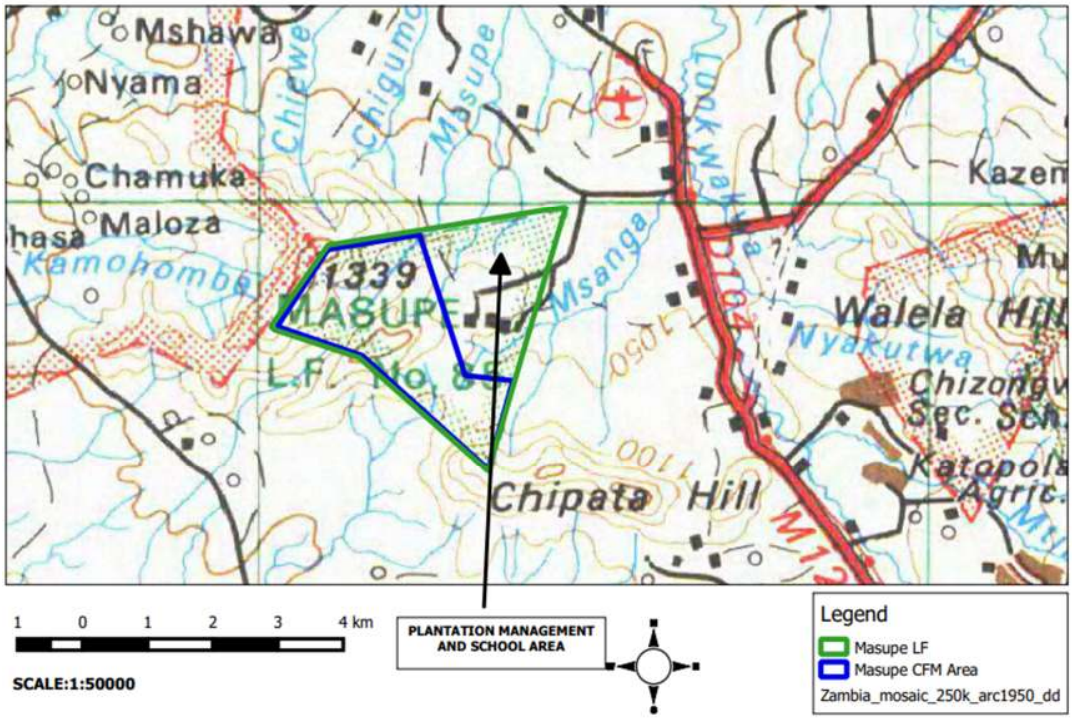
Order by the Minister

***Statutory Instruments* 48 *of* 1973, 66 *of* 1975**

LOCAL FOREST NO. F85: MASUPE-BOUNDARY DESCRIPTION

Commencing at a point on the Capita Hill the boundary proceeds in an easterly direction on a bearing of 79 degrees for a distance of 3,840 metres to Beacon TN; thence on a bearing of 197 degrees for a distance of 4,267 metres to Beacon T3; thence on a bearing of 314 degrees for a distance of 2,621 metres to Beacon S; thence on a bearing of 282 degrees for a distance of 1,524 metres to Beacon R; thence on a bearing of 36 degrees for a distance of 1,447 metres to the Capita Hill, the point of starting. All bearings and distances are approximate. The above described area, in extent 900 hectares approximately, is shown bordered green on Plan No. FR357, deposited in the office of the Surveyor-General, signed by him and dated 27th October, 1972.

MAP SHOWING MASUPE COMMUNITY FOREST MANAGEMENT AREA MARKED BLUE, 512 HECTARES IN EXTENT WITHIN MASUPE LOCAL FOREST NO. 85(900Ha.) IN MISHOLO CHIEFDOM, CHIPATA DISTRICT.



Map of Masupe Local Forest with inventory sample plot layout

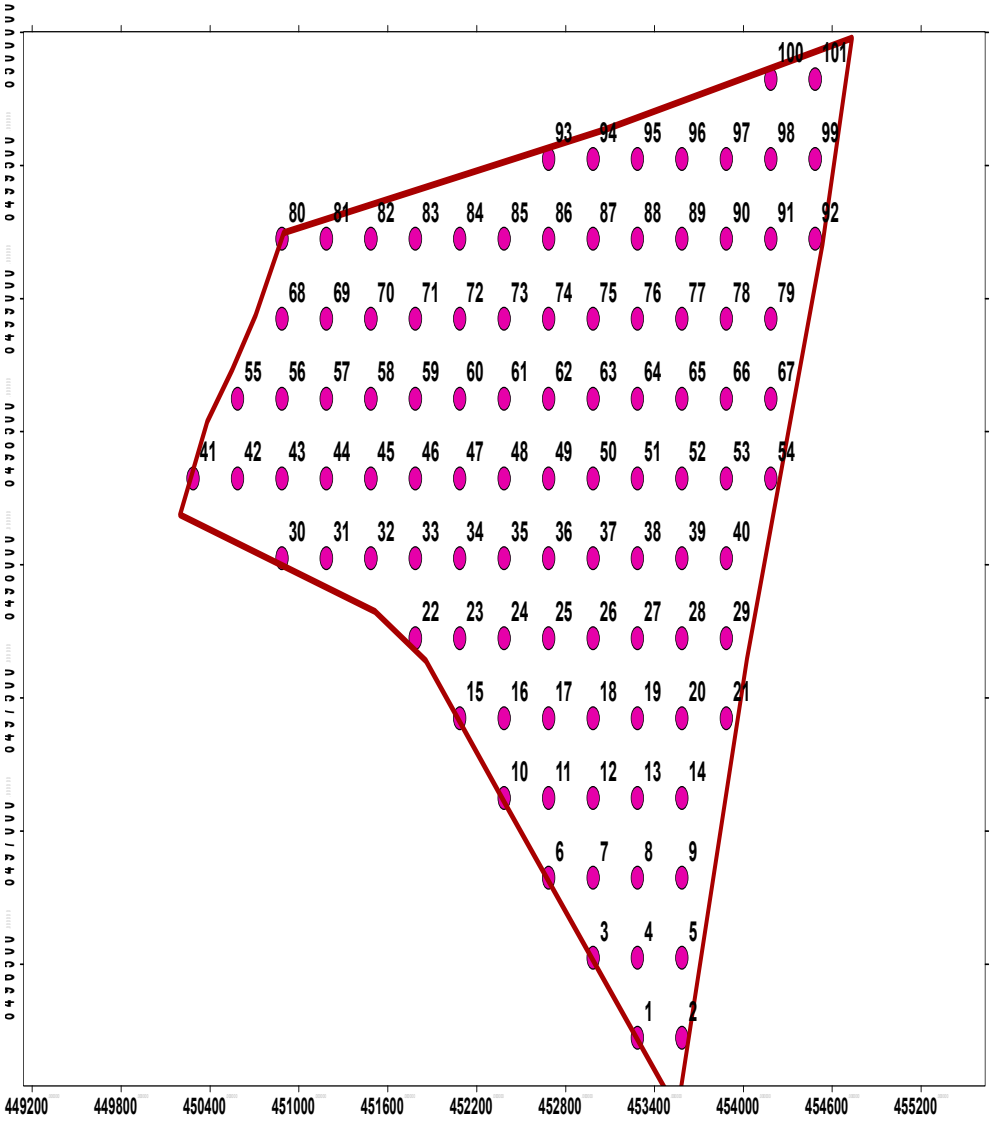


Figure 22; Masupe forest inventory sample plots layout

Annex II Stakeholder validation meeting

REPORT FOR THE MASUPE LOCAL FOREST MANAGEMENT PLAN STAKEHOLDERS' VALIDATION MEETING HELD AT JEMITA LODGE, CHIPATA DISTRICT ON 26TH MAY 2022

Introduction:

The Forestry Department in 2019 undertook a forest inventory exercise to take stock of the forest resources in Masupe local forest, Msipazi local forest and Lutembwe local forest, 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 Masupe, Msipazi and Lutembwe local forests was organized to validate the FMP which was developed by the Forestry Department.

The Stakeholders Validation Meeting in Chipata brought together 78 participants: 20 females and 58 males drawn from government departments, faith-based organisation, and traditional leaders.
Opening prayers were done by Mr. Loties katebe.

Official Opening: District Commissioners officially opened the Validation meetings for all three forest reserves i.e. Masupe, Msipazi and Lutembwe Local Forest.

Figure 23: Stakeholder discussion

Meeting's Expectations

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

i) learn how to manage their local forests

ii) why National Forests were established and what happens in the National forests

iii) what should be done to those who have settled in the forest

iv) importance and benefits of such forests

Workshop Objectives

Mr. Katebe presented the three workshop objectives namely: -

- Engage stakeholders to solicit their inputs on the draft FMP for three forest reserves i.e. Masupe, Msipazi and Lutembwe local forests.
- To avail stakeholders with the proposed programmes contained in the Draft FMP for LNF and hear their views.
- To provide a platform for stakeholders to consider the contents, of the FMP for LNF in line with the existing legal framework.

Structure of Meeting

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

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

Policy and Legal Context

The presentation on Policy and legal context was done by Mr. Alastair Anton, Community Forest Technical Advisor, and 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 objectives 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 LNF. It was highlighted that LNF was gazetted as a forest in 1953 to rain catchment area servicing Lundazi, Mpika, Miyombe, Serenje Mkushi and Kabwe; supporting vegetation cover for Luangwa and Muchinga Eascapements, game management area, water catchment area for Luangwa valley drainage system, part of the trans-frontier conservation areas;
- The workshop 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;

Stakeholders' Observations and concerns

- It was evident that the forest was encroached, why were the permanent structures such as government schools allowed when they contravene PFA reasons.

  Political pressure has to a large extent contributed to the establishment of schools in PFAs contrary to the law. The underlying problem is the traditional leaders (headmen and indunas) allocating land in PFAs.

- Isn't issuing of concession licenses contributing to the forest degradation and deforestation?

  Ideally, tree harvesting for timber is selective and sustainable by nature through control and regulation. Today's tree harvesting with impunity, is what was threatening the existence of the forests in the country.

The exercise of developing FMPs was intended to control access for sustainable harvesting of forest resources -both timber and non-timber products in line with existing laws and policies

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:

- Total number Protected Forest Reserves in eastern province was 73: 11 NFs and 62 LFs covering 469,142 ha which translates to 9.2% of the total surface area of the eastern province. the total boundary area covers 2,042.7km;
- LNF was initially gazetted in 1953 with total hectarage of, which was first altered in 1970 and later in 1978. The land surface area of LNF which is the Eastern Province was 84,840 while 289,960 ha falls in Chama in Muchinga Province;
- How volume was calculated/measured was demonstrated
- Also briefly explained was the history of FMPs in Zambia, were it was highlighted that there were two types: District FMPs and Plantation Management Plans.
- 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 LNF during the inventory
- Total CO_2 value was estimated at USD 24,006,788 for 6,001,697tons
- The summary of the findings of the survey were that: there was increased deforestation; LNF was one of the most highly encroached PFAs with agriculture encroachment covering 29,693ha,

b) Social-Economic Profile.

Mr. Mully Phiri from Zambia Statistics Agency made the presentation on Social-Economic Profile for Masupe, Msipazi and Lutembwe local Forests. Noteworthy highlights from the presentation included the following:

- The Province undertook the Socio-Economic Survey in Masupe, in 2019 alongside the Forest Inventory.
- At the time of the survey villages surrounding Masupe with a total population of 1537 (1261 females and 724 males) and derived benefits from the forest.
- The survey involved a total of 350 (306 were male headed and 44 were female headed) households were.
- The main source of livelihood for 341 (97%) of the people surrounding the Forest were dependent on agriculture as their main source of livelihood while 3.1% depended on small business
- Majority 292 (83.43%) households depended on forest resources for traditional housing
- 100% of the total sample population's main source of energy for cooking and heating was firewood;
- Majority (97.7%) of the sample population's depended on rivers which had their sources in the LNF;
- As much as 343 households (98%) of the total population expressed willingness to protect and manage these local Forests.

Stakeholders' observations and Concerns:

The stakeholders made several observations and raised some concerns notable among them include the following:

- The current status of the forest is very clear and its importance to the forest to the communities. The forest was the habitat for animals. Alteration of the forest threatened everyone and everything that depended on this forest.
- There were serious encroachments in NF & LF, there was therefore need to protect what was remaining of the forest to bring it back to its former glory at the same time find a lasting solution to the illegal settlements
- Sensitizations to change the mindset of the people for them to appreciate the grave consequences of deforestation was imperative
- There was need to provide sustainable/alternative livelihoods

- To resolve the inadequate human resource issue there was need to be re-introduce forest guards to police the LF.
- Is biomass calculated annually?
- There was need to stiffen laws,
- There was need to probe to find the underlying issues such as population growth that were leading to the problem which were not there in the 1950s
- Is there carbon value for areas that are restored? *Carbon value for restored places was higher value because they increase the carbon sinks and the effort for bringing more land and sustainable management*

4.2 Group Work

Following the sharing of the information on LF 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.

COCERNS FROM THE COMMUNITIES

- Management of the forest is going on well with the local communities surrounding the forest.
- Management should be extended to all for better outcome.
- Incentives to the community came out strongly.

GROUP WORK

Identify in Masupe local Forest

What- Uses of the forest

- Firewood
- Poles

- Mushroom collection
- Caterpillars
- Fruits
- Charcoal production
- Water catchment
- Animal grazing
- Small scale farming
- Plantation(Exotic)
- Habitant for small animal
- Building sand
- Honey
- Timber
- Medicine
- Carbon sequence

Who- Uses the forest?

- Local community around the forest
- People from other places
- Department of Forestry

Where- it is used/harvested

- Local community surrounding the forest
- Townships also uses the forest.

ISSUES	**Solutions/opportunities**
Illegal charcoal burning, timber harvest,firewood,field expansion	- Enforcement of existing laws - Sensitization of community members - Voluntary local guarding - Traditional by- laws
Unplanned settlements	- Sensitization - Signage along walking paths.
Late fires for the purpose of hunting small animals	- Sensitization - Intensification of patrols - Introduction of volunteer fire guards - Erection of fire tower
Over grazing	- Recruitment of more staff - Volunteer local guards.
Sand collection	-

Solutions

- Sensitization
- Afforestation
- Formation of CFM-Teams

- Benefit sharing mechanism for protecting the forest.

Permitted practices in Plantation zone

- Nursery mgt.
- Early burning
- Boundary maintenance

Permitted practices in an intact forest- zone

- Mushroom, Wild fruits collection.
- Sustainable harvesting of Timber, poles, fibre wood , medicine
- Bee keeping
- Fish farming
- Water points for livestock
- Early Burning

Prohibited in an intact forest zone

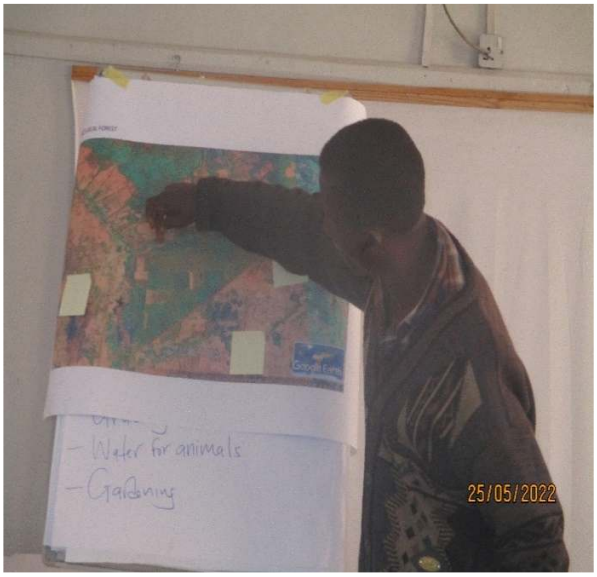
- Farming
- Grazing
- Late fires
- Indiscriminate harvesting

3. List suggestions/strategies to improve productivity/management of the forest.

- **What should be the priority?**
  - Putting up of a Committee (Management)
  - Capacity Building of the Local Community
  - Beefing up of Human Resource at Kaluwe
  - Promotion of Non – wood Forest enterprises (bee Keeping) and fish farming
  - Raising of assorted tree seedlings for planting and selling
  - Plantation expansion
- **Who should be involved?**
  - Traditional Leaders
  - Forestry Department
  - Local Authority
  - NGOs (Marys meals, COMACO)
  - Local Communities
  - Ministry of Agriculture
  - Fisheries and Livestock Department
  - Service providers(Education, Health, Agriculture)

- **How do we work together?**
  - By having quarterly meetings with all stakeholders

- Visiting villages around
- Sensitization through posters
- Sensitization through media such as Radio



5.0 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 team to capture the issues, strategies and recommendations from the meeting and report the Permanent Secretary, Provincial Forestry Office and the Forestry Department Headquarters and accordingly update the draft FMP for NF & LF.
- Representatives of the Chiefs to report the proceedings of the meeting to their respective chiefs
- Plans developed to take forward recommendations and secure resources
- Form the NF & LF coordinating Committee
- Undertake community sensitization

6.0 Collaboration Declaration Pledge

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

"*We the interested stakeholders of LF are concerned with the prevailing situation. LF are a forest of local and national importance. There is need to restore and increase the socio-economic and environmental values for the current and future generations.*

Permitted and prohibited activities have been identified should be widely adopted through community sensitization and enforcement.

As concerned stakeholders we are ready to work in partnership with the Forestry Department, Local Authorities, Traditional Leaders to collaborate over the protection, control, use and management of protected forest areas.

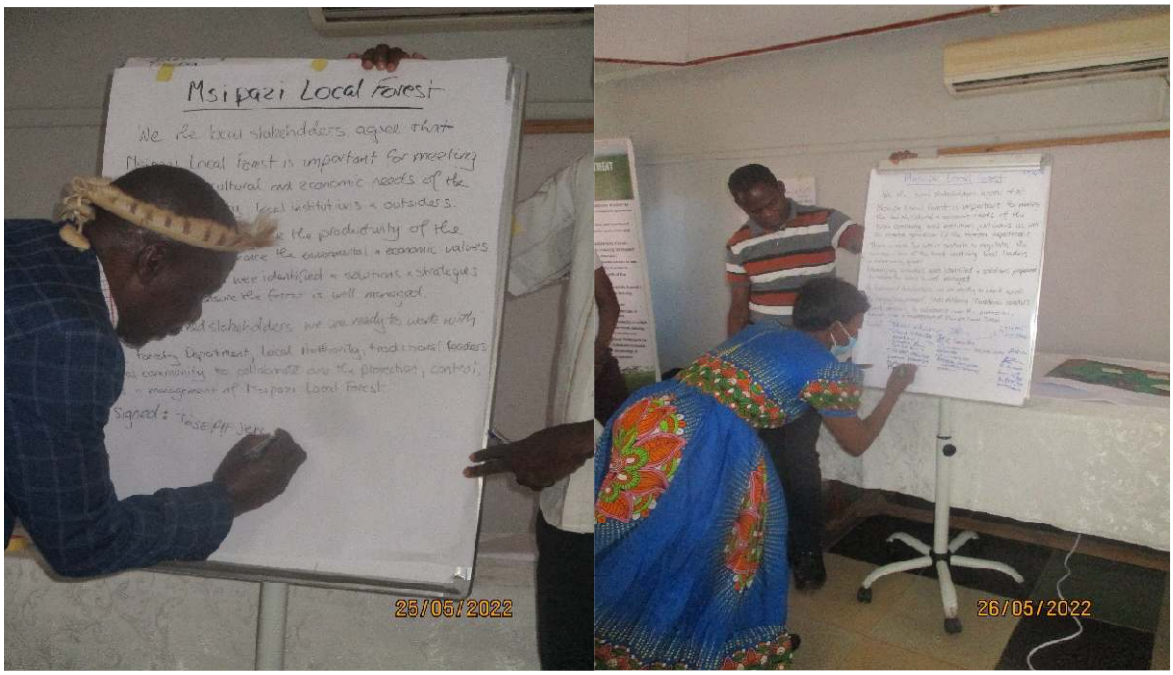


Figure 24: Signing of the declaration pledge by the stakeholders

7.0 Closing Remark and Prayer

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

Annex III: Demographics of major forest fringe communities

Household Distribution of major forest fringe localities of Masupe Local Forest

NAME OF COMMUNITY	HOUSEHOLDS		TOTAL NUMBER OF HOUSEHOLDS
	TOTAL NUMBER OF MALE HEADED HOUSEHOLDS	TOTAL NUMBER OF FEMALE HEADED HOUSEHOLDS	
TOTAL	568	168	736
PJ FARM	1	0	1
ABALE FARM	2	1	3
ABEL PHIRI	3	0	3
ABRAM NGWIRA	1	0	1
AGNESS MWANZA	0	2	2
AGNESS NGWIRA	0	1	1
AIRPORT COMP	7	0	7
AIZA BANDA	1	2	3
AJAT FARMS	7	3	10
ALALANDS FARM	4	0	4
AMAI KATWISHI	0	1	1
AMEDI FARM	8	0	8
AMON S	1	0	1
ANDREW MWALE	2	0	2
ASIBU BANDA	1	0	1
BANDA	3	2	5
BANDA FUNUEL	1	0	1
BANDA JOSEPH	1	1	2
BESI FARM	3	1	4
BWALYA	1	0	1
BWEZANI FARM	5	1	6
CALHAM FARM	10	4	14
CHARITY	0	1	1
CHEHALE FARM	7	0	7
CHIBEZA	48	16	64
CHIGANGENI	24	6	30

CHIGUMU	11	6	17
CHILIPONJE MWALE	1	0	1
CHIMALA	9	5	14
CHIMZELE FARM	1	0	1
CHIPWELE	5	3	8
CHISHIMBA	1	0	1
CHISOMO FARM	1	1	2
CHITEWE	11	4	15
CHITUNGULU	2	0	2
CHOTA	1	2	3
CHRISTOPHER M	1	0	1
CHULU	4	0	4
COWHAM FARM	4	0	4
DANIEL MOYO	2	0	2
DANIEL MWALE	4	0	4
DANNY	1	0	1
DAVISON PHIRI	1	0	1
DAYA FARM	2	0	2
DEKHANI FARM	2	0	2
DENESI NJOBVU	0	1	1
DOSON PHIRI	1	1	2
EDWARD FARM	1	0	1
ESNART SHUMBA	2	1	3
EU BANDA FARM	5	1	6
FABIANO FARM	1	1	2
FATNESS FARM	3	2	5
FELIX DAKA	2	0	2
FIDELIS PHIRI	1	0	1
FORCE FARM	1	0	1
FOSTER	1	1	2
FRANCIS SAKALA	2	0	2

FUSE PHIRI	1	0	1
GABRIEL NKUNDA	10	2	12
GULAM FARM	3	0	3
HARRISON MWANZA	3	0	3
ISAACBANDA	3	0	3
ISAAC NJOBVU	1	0	1
ISAAC PHIRI	4	0	4
JAMES NJOBVU	1	0	1
JIMOLI	17	5	22
JOHABIE AREA	1	1	2
JOHABIE FARM	2	1	3
JOSEPH DAKA	1	0	1
JOSEPH LUNGU	2	0	2
JULIUS BANDA	0	1	1
JULIUS MBEWE	4	0	4
JULIUS NYIRENDA	3	0	3
KABAYI	0	1	1
KACHALI FARM	2	0	2
KADONGOLA	5	1	6
KADYODYO FARM	2	0	2
KAMWALA	3	0	3
KANYEMBA FARM	2	1	3
KAWALA FARM	2	1	3
KELVIN NJOBVU	3	0	3
KENNEDY PHIRI	3	0	3
KHONDOWE	2	1	3
KOSAM NGOMA	1	0	1
KWAPULANI	0	1	1
KWEZEKANI M	1	1	2
LAISON BANDA	2	0	2
LAMECK BANDA	2	0	2

LANDILANI MITI	1	0	1
LASTON L	3	0	3
LUNETI FARM	1	0	1
LYSON	1	1	2
MABVUTO FARM	4	1	5
MACGRAGOR FARM	0	1	1
MACHONA	1	0	1
MADANDAULO	2	1	3
MADUMA	6	8	14
MAGALASI FARM	1	0	1
MAGRUZA	0	1	1
MALIGE	5	2	7
MALIGETA FARM	2	0	2
MALIKA FARM	1	0	1
MALOZA	11	5	16
MANDA FARM	1	1	2
MANGI FARM	3	2	5
MASUPE FOREST	3	0	3
MATEWS LUNGU	2	0	2
MATHIAS PHIRI	2	0	2
MAZYOPA FARM	7	2	9
MBULO FARM	4	1	5
MIKAELO NYIRENDA	2	0	2
MILANZI FARM	3	0	3
MISI FARM	1	2	3
MKANDAWIRE	3	0	3
MKOMBOLA SEC	10	3	13
MKUNIKA FARM	2	0	2
MLONYENI	7	3	10
MOFFAT BANDA	1	0	1
MOFFAT ZULU	4	0	4

MORIS NJOBVU	1	0	1
MOVERS FARM	1	7	8
MPALEPALE	13	1	14
MPAYABANTHU	10	4	14
MPHOFU FARM	2	0	2
MSHANGA FARM	1	0	1
MTENDERE	2	1	3
MULEZA FARM	1	0	1
MUMBA DAKA	2	0	2
MWALE FARMS	1	0	1
MZECHE FARM	4	1	5
NDEMBELA	25	6	31
NEBERT FARMS	1	0	1
NGONDO	2	0	2
NGULUBE FARM	6	1	7
NGWENYA JUMA	1	1	2
NJOVU FARM	1	0	1
NKHATA FARM	4	0	4
NKHOMA	1	0	1
NKOMA FARM	1	0	1
NYAMAPOPA F	4	0	4
NYAMASOKA	0	1	1
PATEL FARM	5	1	6
PATRICIA	0	1	1
PATUKANI BANDA	1	0	1
PAULO MKANDAWIRE	1	1	2
PETER TEMBO	1	0	1
PETROLBANDA	1	1	2
PINDULANI	4	0	4
PUMULA	2	0	2
RAYMOND PHIRI	1	2	3

RCZ CHURCH	3	0	3
RICHARD JERE	2	0	2
ROYD FARM	2	0	2
SAKALA	1	0	1
SALOME FARM	2	0	2
SAM PHIRI FARM	2	2	4
SHAWA FARM	3	0	3
SHUMBA FARM	1	2	3
SMART SOKO	2	1	3
SOGOLELANI	3	0	3
SOKO SHARON	0	1	1
SUNSHINE FARM	3	1	4
TBZ COMPOUND	4	2	6
TEMBO	1	0	1
TEMBO FIRE	4	1	5
THOMAS CHANDA	1	0	1
VAISON BANDA	2	0	2
VINCENT MWALE	1	0	1
VINCENT PHIRI	2	1	3
WAISON K PHIRI	2	0	2
WATSON CHIRWA	1	1	2
WHEAT FARM	1	0	1
YAMENE FARM	4	1	5
YOHANE	1	2	3
YUSUFU FARM	1	0	1
ZAKALIYA PHIRI	1	0	1
ZAMNTHAKA	3	1	4
ZIKO PHIRI	2	0	2
ZIMBA FARM	2	1	3
ZIYAMBUKA	2	0	2
ZONGANI	2	0	2

ZULU FARM	1	0	1
ZULU JOSTERN	1	0	1

Table 8: Distribution of major forest fringe communities

Annex IV Cost of implementing management plan

Forest Protection and Management

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	9	1	1,500	13,500	14,850	16,335	17,969	19,765	21,742	23,916	26,308	28,938	31,832
	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	0	0	0	0	0	0	0	0	0
To significantly reduce levels of illegal forest product harvesting.	Conduct sensitization meetings	No.	24	1	2,000	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	1,100	475,200	522,720	574,992	632,491	695,740	765,314	841,846	926,030	1,018,633	1,120,497
To protect Forest Reserve from late fires	Conduct prescribed and early burning.	Ha	596	1	0	0	0	0	0	0	0	0	0	0	0
	Training the local communities on fire management techniques	No	5	1	2,500	12,500	13,750	15,125	16,638	18,301	20,131	22,145	24,359	26,795	29,474
	Sensitizing the local community on the importance of early burning.	No.	5	1	2,000	10,000	11,000	12,100	13,310	14,641	16,105	17,716	19,487	21,436	23,579
To ensure protection against pests, fire, and human damage for the sustainability of forest resources	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	1,500	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738

Biodiversity Conservation and Environmental Education

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 conserve and enhance the biodiversity of the forest reserve.	Promote local participation and ownership through meetings.	No	8	4	2,000	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	2,500	80,000	88,000	96,800	106,480	117,128	128,841	141,725	155,897	171,487	188,636
To create wider awareness of	Conduct meetings and drama performances to assess community understanding on forest use and conservation.	No	12	1	2,500	30,000	33,000	36,300	39,930	43,923	48,315	53,147	58,462	64,308	70,738
the forest, its importance, and the need for its conservation	Sensitization on Climate change. Produce pamphlets on the need for forest Conservation. (Local language).	No.	10	1	25,000	250,000	275,000	302,500	332,750	366,025	402,628	442,890	487,179	535,897	589,487
	Facilitate the formation of forest conservation clubs in surrounding schools.	No	5	1	3,000	15,000	16,500	18,150	19,965	21,962	24,158	26,573	29,231	32,154	35,369
	Conduct school quiz on forest conservation/climate change.	No	3	3	10,000	90,000	99,000	108,900	119,790	131,769	144,946	159,440	175,385	192,923	212,215
	Conduct study visits to other areas and projects to gain practical and potentially useful experiences from	No	1	1	50,000	50,000	55,000	60,500	66,550	73,205	80,526	88,578	97,436	107,179	117,897
Subtotal						**579,000**	**636,900**	**700,590**	**770,649**	**847,714**	**932,485**	**1,025,734**	**1,128,307**	**1,241,138**	**1,365,252**

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 contribute towards meeting subsistence needs and improving the livelihoods of forest-adjacent communities	Training forest-adjacent communities in sustainable forest enterprises such as beekeeping, gardening and other non- wood forest enterprises	No	15	3	10,000	450,000	495,000	544,500	598,950	658,845	724,730	797,202	876,923	964,615	1,061,076
Reduce forest dependency by local communities	Involve local communities in woodlot establishment.	No.	15	1	4,000	60,000	66,000	72,600	79,860	87,846	96,631	106,294	116,923	128,615	141,477
Subtotal						**510,000**	**561,000**	**617,100**	**678,810**	**746,691**	**821,360**	**903,496**	**993,846**	**1,093,230**	**1,202,553**

Table 4. Human Resource 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 Improve skills for effective management	Short courses Exchange visits, Refresher courses	No	2	2	30,000	120,000	132,000	145,200	159,720	175,692	193,261	212,587	233,846	257,231	282,954
To build capacity in the local members for effective performance	Training.	No.	5	2	8,000	80,000	88,000	96,800	106,480	117,128	128,841	141,725	155,897	171,487	188,636
Subtotal						**200,000**	**220,000**	**242,000**	**266,200**	**292,820**	**322,102**	**354,312**	**389,743**	**428,718**	**471,590**

Infrastructure 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 establish and maintain the infrastructure necessary to achieve the multiple objectives of forest management.	1. Lobby for Maintenance the access roads to forest reserve.	Km	7	1	30,000	210,000	231,000	254,100	279,510	307,461	338,207	372,028	409,231	450,154	495,169
Subtotal						**210,000**	**231,000**	**254,100**	**279,510**	**307,461**	**338,207**	**372,028**	**409,231**	**450,154**	**495,169**

Research, Monitoring & Evaluation

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 conduct research to enhance regeneration potentials of important tree spp.	Identify the important trees based on demand for the research and their locations in the reserve.	No.	3	3	4,000	36,000	0	0	0	0	0	0	0	0	0
	Lay plots at the identified locations.	No	3	3	5,000	45,000	0	0	0	0	0	0	0	0	0
	Regeneration potentials of the identified trees would be observed.	Ha	0			0	0	0	0	0	0	0	0	0	0
Continuously conduct research on community interactions in forest reserve.	Identify all forest fringe communities.	No	0	0	0	0	0	0	0	0	0	0	0	0	0
	Socio-economic survey would be conducted for the forest fringe community with assistance from CSO	No	1	1	0	0	0	0	0	0	0	0	0	0	0
To attain improved understanding of the forest and its usage, in conformity with the Management Plan.	Implement the Management plan and monitor activities	No	1	4	30,000	120,000	132,000	145,200	159,720	175,692	193,261	212,587	233,846	257,231	282,954
	Evaluate the implementation	No	2	2	80,000	320,000	352,000	387,200	425,920	468,512	515,363	566,900	623,589	685,948	754,543
Subtotal						**521,000**	**484,000**	**532,400**	**585,640**	**644,204**	**708,624**	**779,487**	**857,436**	**943,179**	**1,037,497**
Grand Total						**2,862,800**	**3,055,030**	**3,360,533**	**3,696,586**	**4,066,245**	**4,472,869**	**4,920,156**	**5,412,172**	**5,953,389**	**6,548,728**

REPUBLIC OF ZAMBIA

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).

The ZIFL- Project is a product of cooperation between the Government of Zambia, the World Bank & partners.

Forestry Department

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