REPUBLIC OF ZAMBIA

MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

KACHOLOLA LOCAL FOREST: P64 MANAGEMENT PLAN 2025 - 2035

APPROVAL PAGE

KACHOLOLA LOCAL FOREST No. P64 - FOREST MANAGEMENT PLAN

Notice of completion

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

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

Director of Forestry

Date:_____

Registration of the Forest Management Plan

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

Minister for Green Economy and Environment

Date:_____

FORESTRY DEPARTMENT

FOREWORD

Forest resources are important because they provide essential functions and services to local communities and the country at large, for conservation of biodiversity, and supporting social and livelihood wellbeing. Natural resource management trends in all corners of the globe are moving away from the predominantly earlier practised protective 'plan and control' management approach to more collaborative and participatory management approaches. Zambia has adopted Participatory Forest Management (PFM) and Community Forestry (CF) approaches to forest management allowing for co-management of forest resources between the Zambia Forestry Department (ZFD) as custodian of Zambia's forests and communities, partnering organisations and institutions. The change in Forest management approach is driven by the need to promote sustainable use and management of forest resources in the country. The high demand for forest products and services has rendered the present use and management of forest resources unsustainable, this is because of increase in human population, and the ever changing socio-economic and environmental conditions around the country. It is for this reason that Kacholola Local Forest Management Plan (KLFMP) 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 efforts of their Royal Highnesses, Headmen and the community around Kacholola Local Forest for the commitment to support this plan and importantly the sustainable management of the Local Forest.

In addition, the Forestry Department, Eastern Province, 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 present and past officers of the Forestry Department. 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. Their 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

Forest Management Planning is a requirement of Sustainable Forest Management (SFM) and is provided under the provisions of the Forests Act No.4 of 2015. This provides for the conservation and use of forests and trees for the sustainable management of forests ecosystems and biological diversity where woodlands and trees are among the nation's most important natural heritage resources. The vision of the National Forestry Policy, 2014 is to attain sustainable forest management at all types of forests to enhance forest products and services that will contribute significantly to mitigation of climate change, poverty reduction, increased income generation, 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 Kacholola 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. These in the case of Kacholola Local Forest are critical and if not addressed immediately may result in loss of forest and the functions it was reserved to protect. Adjacent communities can play an important role in the rational utilisation of the existing forest through participation in decision-making, active management, protection and benefit sharing. Thus; community collaboration is imperative to protect the remaining forest cover of Kacholola Local Forest from degradation in order for it to 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 Kacholola 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 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 Local Forest.

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 Kacholola Local Forest.

The inventory results indicate a total standing volume for all species in Kacholola Local forest estimated at (93.7m^3/ha), with a total bole volume estimated at 39.3m^3/ha). Total Biomass for trees ≥5cm DBH is estimated 137.2 tonnes per hectare with an above ground carbon estimate of 54.9t/ha. A basal area figure of 9.9m^2 per hectare is an average figure for the type of forest. This confirms the status of Kacholola Local Forest as a forest not achieving its full growth potential.

Summary socio economic analysis

The livelihood survey conducted in 2021 indicated that Kacholola Forest is surrounded by approximately 25 villages with a total population of 2,238. 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 81 percent of all the households were willing if called upon to voluntarily support management of the forest reserve with Forestry Department. At the time of survey, there were serious encroachment in parts of the reserve including schools and clinics within the forest as well as evidence of illegal mining.

Forest change & issues analysis

A consultation meeting of stakeholders for Kacholola Local Forest was held on 19th December 2023, at Farmers Training Centre, in Nyimba District. Participants were requested to review the uses and users of the forest, the issues that are contributing to forest loss and forest degradation, but importantly to propose local solutions to these issues. Utilising forest cover imagery, participants were able to relate to the areas of forest and forest loss through agriculture and settlement across the forest and surrounding areas. This was used to focus discussion on issues, identifying different zones of use and management, possible strategies and priorities for management as well as agreeing permitted and non-permitted activities within each of the identified zones.

Stakeholders' observations and Concerns

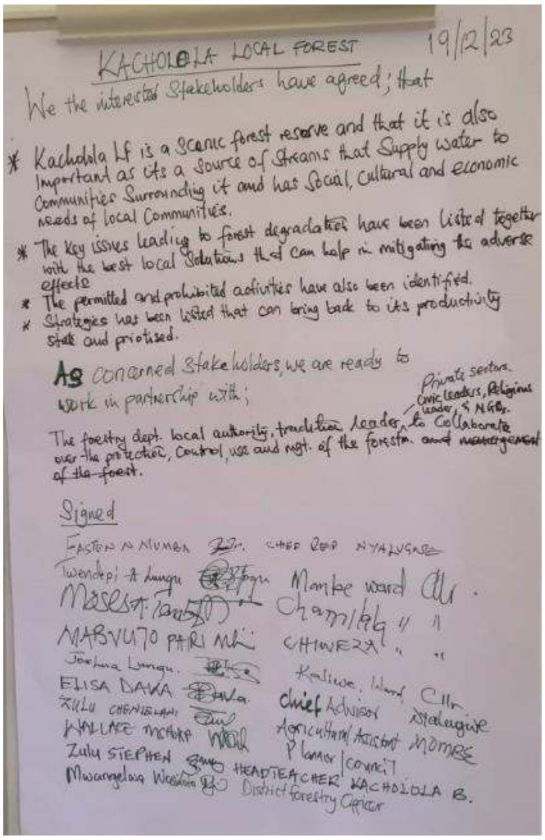
The stakeholders made several observations and raised some concerns notable among them include the following:

- The forest is important to the surrounding communities as well as a habitat for animals. Forest loss threatens everyone and everything that depends on this forest.
- There are serious encroachments in KLF, therefore there is need to protect what is remaining of the forest as well as bring it back to its former glory at the same time find a lasting solution to the illegal settlements.
- Need to change the mindset of the people for them to appreciate the grave consequences of deforestation as well as 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 KLF and need to stiffen laws.
- Headmen, senior headmen and Indunas, are allocating land to people coming from outside, in this regard consideration should be to ensure no further encroachments and means to restore the forest found.
- The community forestry model should be promoted as it also promotes local ownership.

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, Traditional leaders, and stakeholders agreed that there was 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 Kachotola Local Forest.

The declaration confirmed that Kachotola 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 Management Objectives for the management of Kachotola 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.

These in the case of Kachotola Local Forest are urgent and if not actioned immediately may result in the loss of the forest and the functions it was reserved to protect. The process is yet to be initiated by promoting community forestry in accordance with provisions of the Forest (Community Forest Management) Regulations of 2018.

Proposed management actions

The following management actions which are proposed for Kacholola Local Forest reflect the statutory purpose of the Local Forest as set out in section 19 of the Forests Act of 2015. The actions are intended to address and reverse the degrading factors threatening the current existence of the Local Forest.

1 Forest Conservation through Community Participation and Livelihood Development

Community empowerment is central to participatory forest management for the effective coordination and sustainable management of forest resources. This Plan recognizes that communities surrounding Kacholola Local Forest are key stakeholders in the conservation of this forest as well as beneficiaries from its sustainable management. This aims to meeting the social, cultural and economic needs and thereby improving the livelihoods of the communities around Kacholola 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 the Local Forest, as well as a development in the immediate surrounding area to promote greenhouse gas emission reduction interventions;

2 Forest Protection, Restoration, Management and Conservation of Biodiversity

Kacholola Local Forest is an important forest ecosystem containing 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 including 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 Kacholola Local Forest and empowered through equal participation in decision making, governance and benefit sharing.

Contribution to Emissions Reduction in Eastern Province

Improved management of Kacholola 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 Kacholola 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

CAPI	Computer Assisted Personal Interviews
CFMG	Community Forest Management Groups
CSA	Climate smart agriculture
DBH	Diameter at Breast Height
EA	Enumeration Area
EP-JSLP	Eastern province Jurisdiction Sustainable Landscape Program
FD	Forestry Department
FMP	Forest Management Plan
FPLR	Forest Landscape Protection and Restoration
FPIC	Free Prior Informed Consent
GHG	Green house gases
HFO	Honorary Forest Officers
IPCC	Intergovernmental Panel on Climate Change (UN)
KLFMP	Kacholola Local Forest Management Plan
NGO	Non-Governmental Organization
REDD	Reducing emissions from deforestation and forest degradation
SFM	Sustainable forest management
ZAMSTATS	Zambia Statistics Agency
ZIFLP	Zambia Integrated Forest Landscape Project

TABLE OF CONTENTS

List of Figures and Tables

KACHOLOLA LOCAL FOREST MANAGEMENT PLAN

1 INTRODUCTION

The Kacholola Local Forest Management Plan (KLFMP) 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 management of the forest resources of the Kacholola Local Forest in a sustainable manner whilst involving rural communities, traditional and local leadership, as well as other key stakeholders in collaboration with the Forestry Department.

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

1.2 Duration of forest management plan

The duration of the FMP is ten (10) years from the date that the plan is approved and registered in the Government Gazette. However, implementation of the Plan will be monitored periodically and evaluated at year 5 and may be adjusted accordingly as lessons are learned.

1.3 Policy Objectives

The Forest Management 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 Management Objectives

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

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

(b) To protect and conserve forest 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

Kacholola Local Forest (Reserve No. 64) forms part of the forest estates in Eastern Province, covers a land area of approximately 15,200.53 hectares in extent with total perimeter of 65.2Km, and is situated approximately 40Km south-west of the administrative centre of Nyimba District.

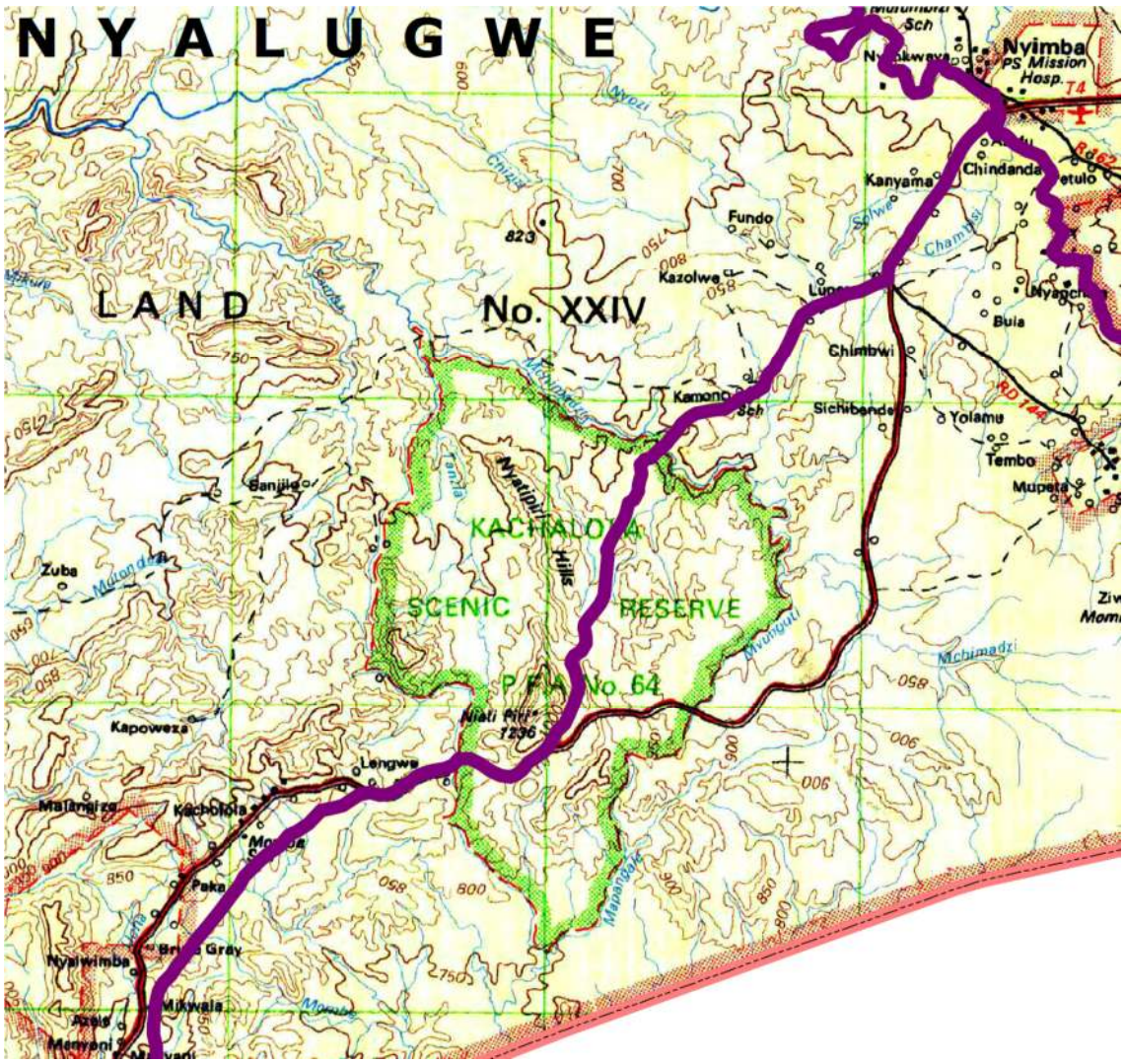


Figure 1 Map of Kacholola Local Forest

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

2.2 Ownership and control

Kacholola Local Forest No.64, was originally declared a forest reserve and gazetted under Statutory Instrument No. 2 of 1957 and deposited in the office of the Surveyor-General on Map No. FR109/1. It is a protected forest area with the designation of "Local Forest" covered by section 19 of the Forests Act, 2015. The Forestry Department is responsible for its protection and management.

2.3 Reasons for reservation

The reservation to make it a scenic reserve was to improve holiday amenities of Kacholola Hotel, making it a pleasant tourist stop as well as to protect stream catchment areas, conservation biodiversity of indigenous tree species and securing the supply of forest and non-forest products for present and future generation in particular communities around the forest reserve.

2.4 Physical and Biophysical Environment

Topography, Geology & Soils

The Forest is hilly tree clad area, deeply intersected by water courses, offers splendid local and panoramic views. Geologically the area is located on Precambrian metamorphic rocks characterized by Gneiss with igneous intrusion of Syenite. The exploratory soil map of Zambia compile by the soil survey section research branch of the Ministry of Agriculture 1971 classified the area covering Kacholola Local Forest well drained, moderately deep, red to strong brown, friable, gravelly, moderately weathered fine loamy to clayey soils (chromi-haplic ALISOLS, partly skeletic phase).

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.

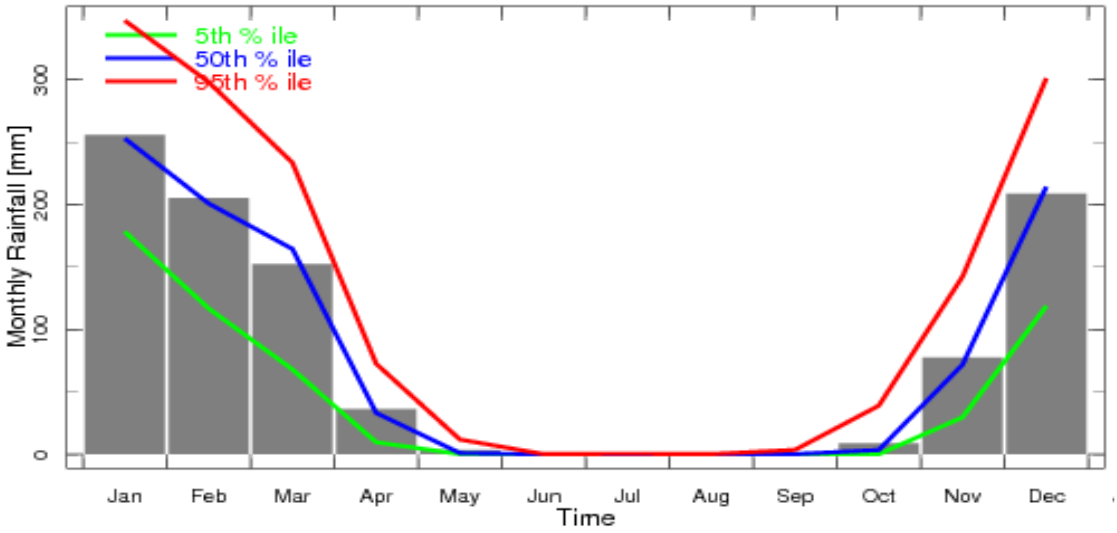


Figure 2 Monthly rainfall- Eastern Province *Source: The Zambia Meteorological Department*

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

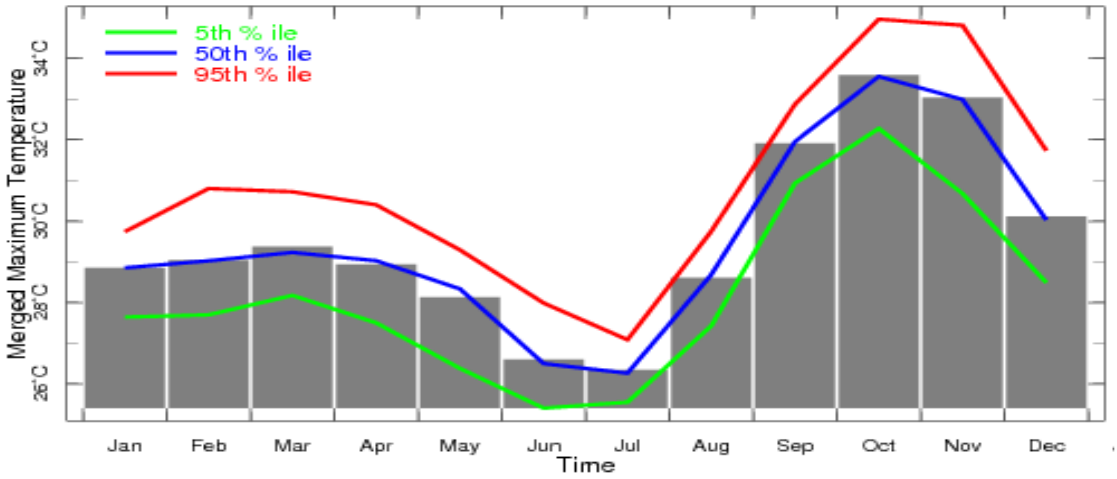


Figure 3 Monthly temperature - Eastern Province Source: The Zambia Meteorological Department

Vegetation Type

Kacholola Local Forest is a homogeneous forest. The vegetation type is miombo woodland on the plateau with a diverse tree flora including *Brachystegia allenii*, *Julbernardia globiflora, Brachytegia bussei*, *Brachystegia boehmii, Brachystegia burtii* and many other species. The forest diversity (number of tree species, shrubs and herbs) and description of composition, structure and economic value based on availability of timber, medicinal, food plants) are described in Chapter 4 for Growing stock while the future utilization as related to development of area and benefits to communities is further described under proposed management actions.

Fauna

The Local forest is important for wildlife habitat. During both the reconnaissance survey and the forest inventory, there was 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, Warthog, Bush pigs, Antelopes, Guinea fowls and common Duikers are present. Smaller animal species such as squirrels, birds, Snakes and Lizards were encountered during the surveys. The reserve is adjacent to a Game Management Area.

3 PAST MANAGEMENT

The Kacholola Local Forest was declared and gazetted in 1957. The management of the reserve has been guided by the objectives of reservation proposal as stated in the proposal at the time the forest was gazetted as a scenic reserve under notice no.2 of 1957 and subsequently under Statutory Instrument No.267 of 1964, 66 of 1975 and 148 of 1978.

The original reasons for reservation centered around the overnight stop that had already been established to cater for travellers on business between Lusaka and Fort Jameson (Chipata), known as Kacholola Hotel. Therefore the intention was to make this area a Scenic Reserve, to improve the holiday amenities of Kacholola Hotel, in particular to make it a pleasant tourist stop at which travellers to and from the main game watching camps and the Lake can break their journey for a day. The files indicate that the intention was to make local beauty spots, picnic sites, view points and construction of footpaths and small shelters and campsites for tourists.

The Public Service Reform Programme (PSRP) in 1997 and economic downturn, had an adverse impact on the management of the Local Forest. This combined with an increase in population, high poverty levels resulted in increase pressure on the forest compounded by a Department of reduced manpower. With the result, Kacholola Local Forest has over the years been partially encroached by influx of migrants from surrounding districts as well as Chiefdoms. Agriculture, timber logging and informal land allocation for settlement are the major challenges facing the Local Forest for some time, with recent evidence of illegal gold mining.

Various initiatives have taken place to address including meetings with Chiefs, stakeholder meetings and in 2018 a programme of issuing notices to those illegally settled within the Reserve. In addition, a number of settlements with associated infrastructure including community schools are located with the gazetted forest area.

4 GROWING STOCK

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

A forest inventory was conducted by the Forestry Department in 2021 with financial support from the Zambia Integrated Forest Landscape Project. The following section provides the results and analysis from the data collected. The location of sample plots is provided in Annex 1. Measurement of trees and soils followed the Department's Guidelines and the software *forestcalc* (version 6.4.1) used to process the data to provide the summary information contained in this chapter. The information collected allows assessment of the condition of the forest, the value of the forest both economic as well as biodiversity value in terms of species diversity and abundance. Past management, exploitation as well as current management and pressures on the forest can be seen in the species abundance and size distribution in the areas assessed. These as well as the current Policies and development priorities can guide the short, medium- and long-term management of Kacholola Local Forest. The following table presents the summary information from the forest inventory:

4.1 Stratum total by all species

Stratum total by diameter class per hectare for all species

Diameter Class	**0-4**	**5-9**	**10-14**	**15-19**	**20-29**	**30-39**	**40+**	**Total**
Total Vol (m^3)/ha	0.00	3.89	8.36	12.51	24.66	19.14	25.17	93.71
Total Bole Vol (m^3)/ha	0.00	1.53	3.40	5.13	10.41	9.01	9.84	39.34
Density/SPH	0.41	183.56	106.83	66.70	56.24	20.70	10.03	444.49
Basal (m^2)/ha	0.00	0.74	1.24	1.54	2.57	1.84	2.06	9.99
Biomass, (Tons)/ha	0.00	5.77	12.21	18.14	36.11	27.93	37.01	137.20
Carbon, Total (Tons)/ha	0.00	2.89	6.11	9.07	18.06	13.97	18.50	68.60
Vol (m^3) Sawlogs/ha	0.00	0.11	0.44	1.01	8.83	11.81	18.27	40.49
Vol (m^3) Poles/ha	0.00	1.39	2.37	3.41	3.21	0.73	1.26	12.37
Vol (m^3) Fruits/ha	0.00	0.24	0.50	0.41	0.49	0.33	0.36	2.33
Vol (m^3) Medicinal/ha	0.00	1.61	3.56	5.03	6.34	2.01	1.97	20.56
Vol (m^3) Firewood/ha	0.00	0.47	1.47	2.64	5.63	4.26	3.31	17.79
Vol (m^3) Other/ha	0.00	0.04	0.01	0.00	0.14	0.00	0.00	0.20
Seedlings								4,281

Table 1 Stratum total for all species

4.2 Tree species abundance

The inventory data indicates that there are over 80 different types tree species that include tree seedlings in the forest. However, the ten most frequent species are shown below.

Species	Local Name(Nyanja)	Species Code
Brachystegia buseii	Mukongolo	47
Brachystegia boehmii	Mufendalunzi	46
Brachystegia floribunda	Musamba	48
Brachystegia manga	Kamponi	50
Pseudolachnostylis maprouneifolia	Msolo	258
Pterocarpus angolensis	Mukwa	262
Julbernadia globiflora	Mutondo	188
Kirkia acuminata	Muzumba	192
Combretum zeyheri	Kalama	89
Cassia abbreviata	Mleza	68

Table 2 Top Ten Abundant Species in the Forest Reserve

4.3 Tree and Sampling Distribution by Size Classes

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

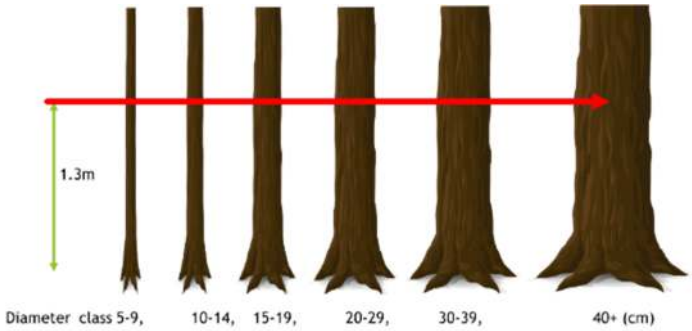


Figure 4 Size class distribution graphic

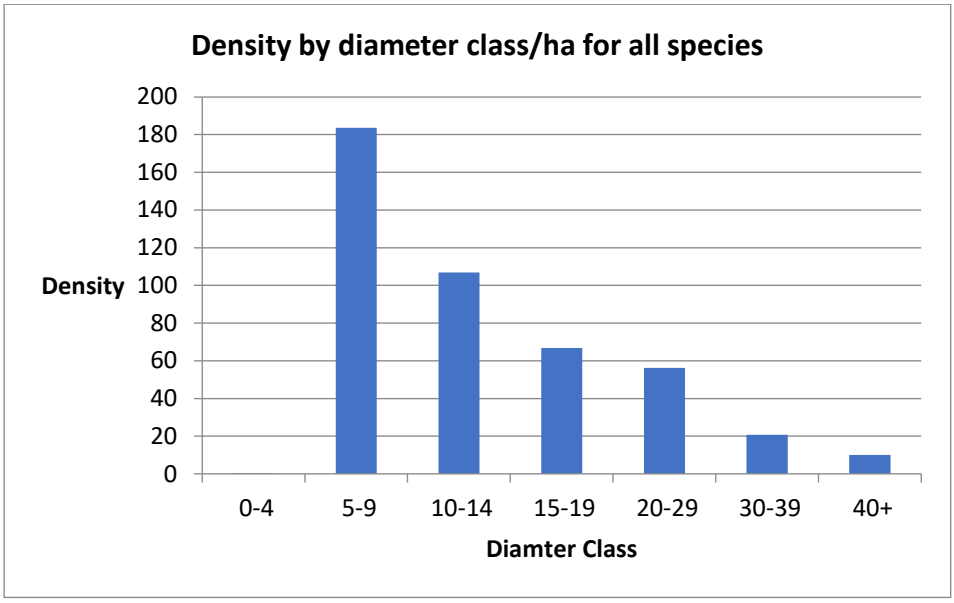


Figure 5 Density by diameter class/ha for all species

In Kacholola Local Forest, a stocking density for trees ≥ 5 cm DBH was estimated at 444 stems per hectare.

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

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

A total figure of 9.9m^2 per hectare is a moderate to good figure for basal area in a similar type of forest. This confirms the status of Kacholola Local Forest as a well stocked forest, however, the forest of concern following past and most likely current high levels of exploitation of large sized trees.

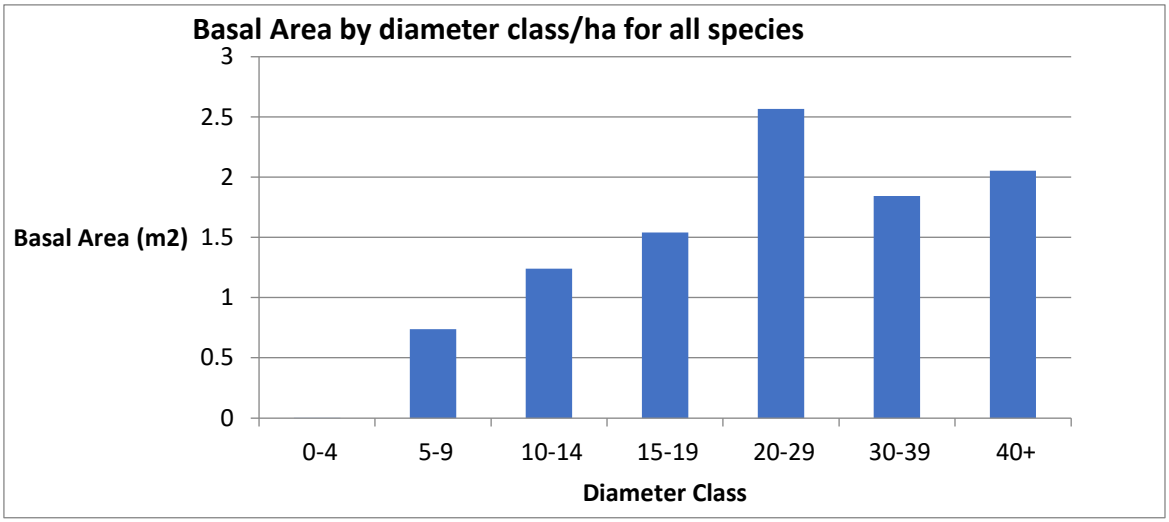


Figure 6 Basal area (m2) by diameter class/ha for all species

The stocking by diameter class basal area per hectare is more in 20 –29cm class. The data indicates that there has been less historical tree harvesting resulting in availability of trees with diameter class 30-40 which are categorized for timber potential. 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 primary forest. The species with the high density is *Diplorhynchus condylocarpon* with 44.9 stems per hectares, this is followed by *Bauhinia petersiana and Combretum zeyheri.*

4.4 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 per hectare for all species in Kacholola Local Forest is estimated at 93.7m³/Ha., with a total bole volume estimated at 39.4m³/Ha. Total Biomass for trees ≥5cm DBH is estimated at 137 tonnes/ha and it has carbon estimated at 68.6 tonnes/ha.

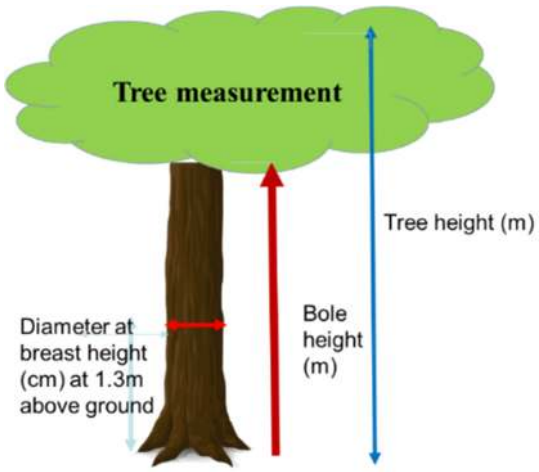


Figure 7 Tree measurement graphic

Technical characteristics

The volume of other technical characteristics or use are computed per hectare as follow: Saw-log 40.48m³, Pole 12.36m³, Firewood/charcoal 17.7m³, Fruit 2.32m³ and others 0.20m³. The poles are evenly distributed mainly in diameter class 5 to 29 and less above 30. The sawlog are above 5 cubic meters per hectare. This indicates that the forest can support timber harvesting.

Diameter Class	05-09	10-14	15-19	20-29	30-39	40+	Total
Medicinal	1.61	3.56	5.03	6.34	2.016	1.98	20.55
Fruit	0.25	0.49	0.41	0.49	0.33	0.36	2.33
Sawlog	0.12	0.44	1.02	8.82	11.82	18.27	40.48
Pole	1.38	2.38	3.41	3.22	0.72	1.26	12.37
Others	0.05	0.01	0	0.15	0	0	0.20
Fuel wood	0.47	1.47	2.64	5.63	4.25	3.316	17.79

Table 3 Volume according to uses per hectare

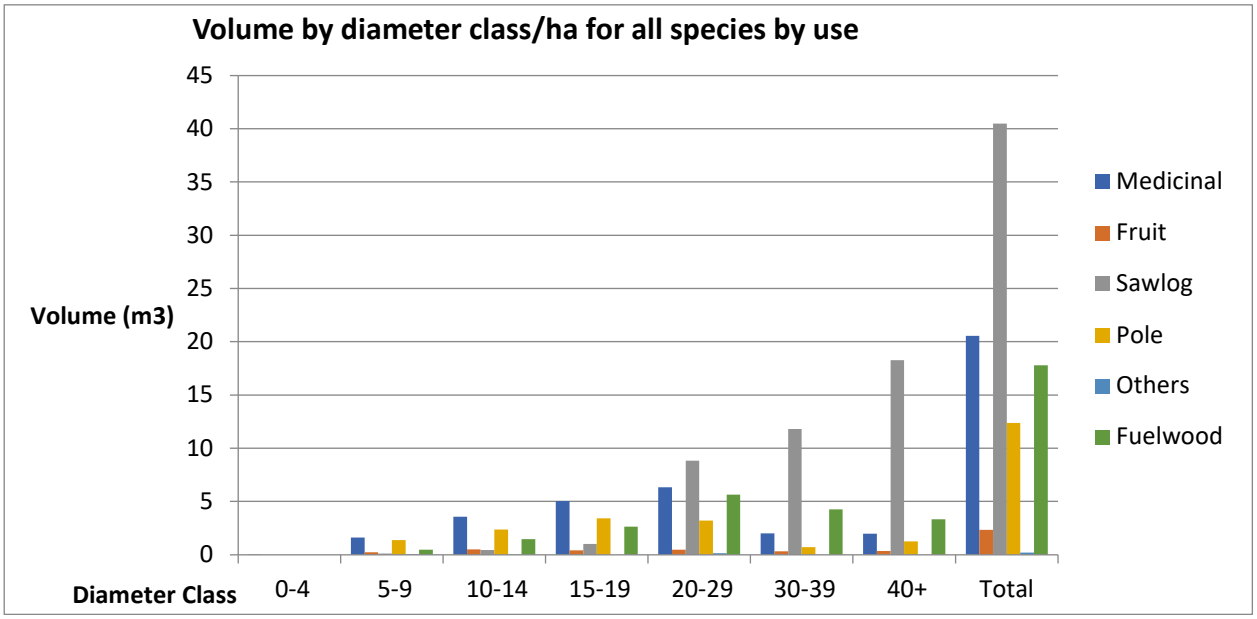


Figure 8 Volume (m^3) by diameter class/ha for all species by use

4.5 Bole volume total by diameter class/ha for all species

The total bole volume by diameter class per hectare is 39.35 cubic meters with higher in diameter class 40+ and less from 5-9. The outcome indicate that the forest can support limited timber harvesting if included in the management regime.

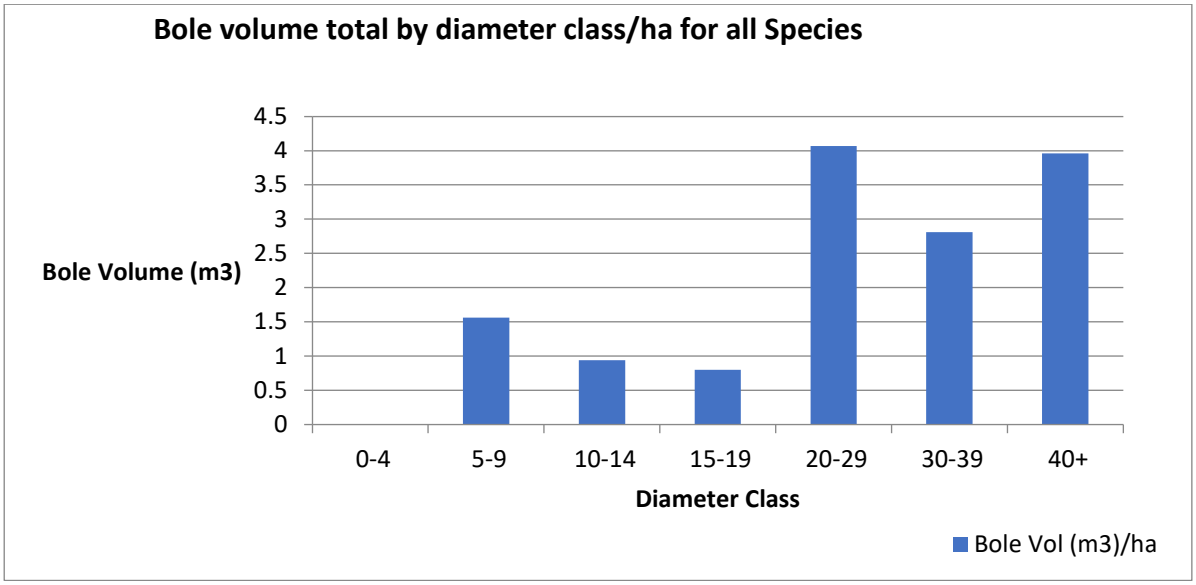


Figure 9 Bole volume (m^3) by quality diameter class for all species

4.6 Presence of Commercial Tree Species

Based on the inventory data, species used for high valued sawlogs such *Pterocarpus angolensis*, *Colophospermum mopane*, *Swartzia madagascariensis*, *Pterocarpus chrysothrix* are not abundant but the medium valued are *Brachystegia manga* and *Julbenadia globiflora*, are abundant in the forest. Therefore, Kacholola Local Forest in its current condition can sustain small scale timber harvesting operations or timber concession.

Volume of all species by use

No	Description	Volume(m^3/ha)	Explanation
1	Sawlogs	40.49	These are merchantable trees with the average diameter of 30cm dbh and above and are of exceptionally high valued suitable for timber production
2	Poles	12.37	These are tree species with relative straight bole length with the average diameter at breast height of 5cm to 29cm
3	Fruits	2.33	The tree species include all fruit bearing either edible or not edible
4	Medicinal	20.56	All medicinal plants
5	Firewood	17.79	These include all dead and or diseased trees which can be used for firewood
6	Others	0.20	These include all tree species which are not classified in any of the above categories

Table 4 Trees in Kacholola Local Forest in terms of forest product categories.

Biomass and carbon above ground

Based on the inventory data, the biomass and carbon figures by size class and total are summarised below. Note, this figure is standing carbon above ground and not the amount of carbon that may be traded under carbon trading schemes which are based on measured reduction of emissions.

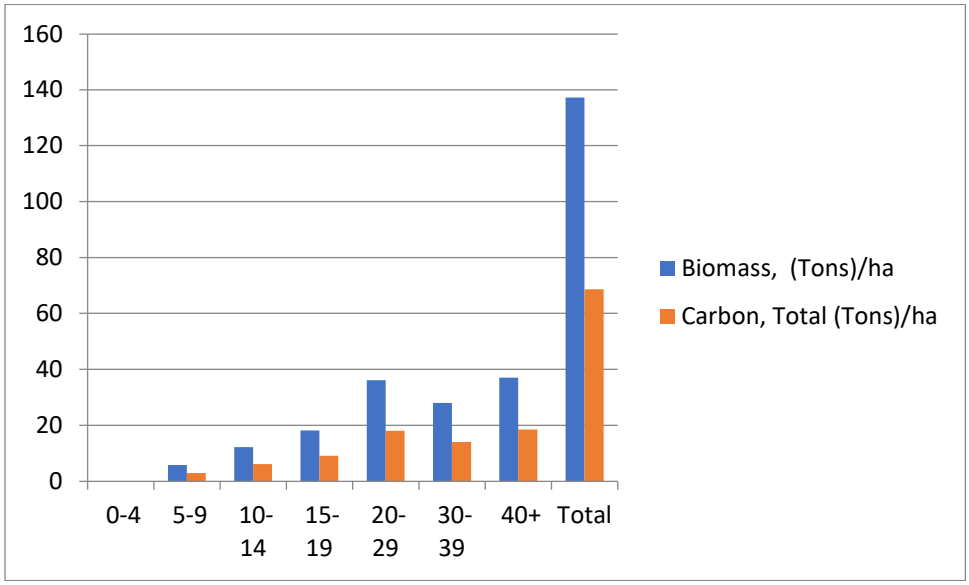


Figure 10 Biomass and Carbon above ground by diameter class/ha for all species

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

The total biomass and carbon stocks per hectare respectively of 31.12 t/ha and 15.56 t/ha estimates methodological framework applied is that developed by the IPCC documented in the 2006 guidelines for national greenhouse inventories volume 4, chapter 2 and 4. The correlation of total biomass and carbon both above and underground is in the figure above is within the IPCC requirement of half of biomass constitute carbon stock.

4.7 Forest condition and restoration assessment

To supplement the forest inventory data, a land cover assessment was conducted using Sentinel-2 2025 images (date filtered: 2024-01-01 - 2025-07-01) at a resolution of 30 meters. The area of different land classes was calculated using Compute Geometry in ArcMap. The results indicated the following:

Land cover category	Estimated area	Percentage
Forest	14,245.6	95.7
Cropland	628.4	4.2
Degraded forest (open)	14.3	0.1
Degraded (scrub)	0.4	0
Total	**14,888.7**	**100.0**

Table 5 Forest condition analysis 2025 by land cover

While the current levels of forest loss and degradation is relatively low, the pressure on the forest is expected to increase and risk of further loss and degradation will expand. The management approach for Kacholola Local Forest is to secure areas with forest cover and restore areas of lost forest cover with people's participation in order to improve environmental, social and economic impacts. The land cover analysis allows for identification of restoration strategies. These are outlined in the chapter on proposed management options.

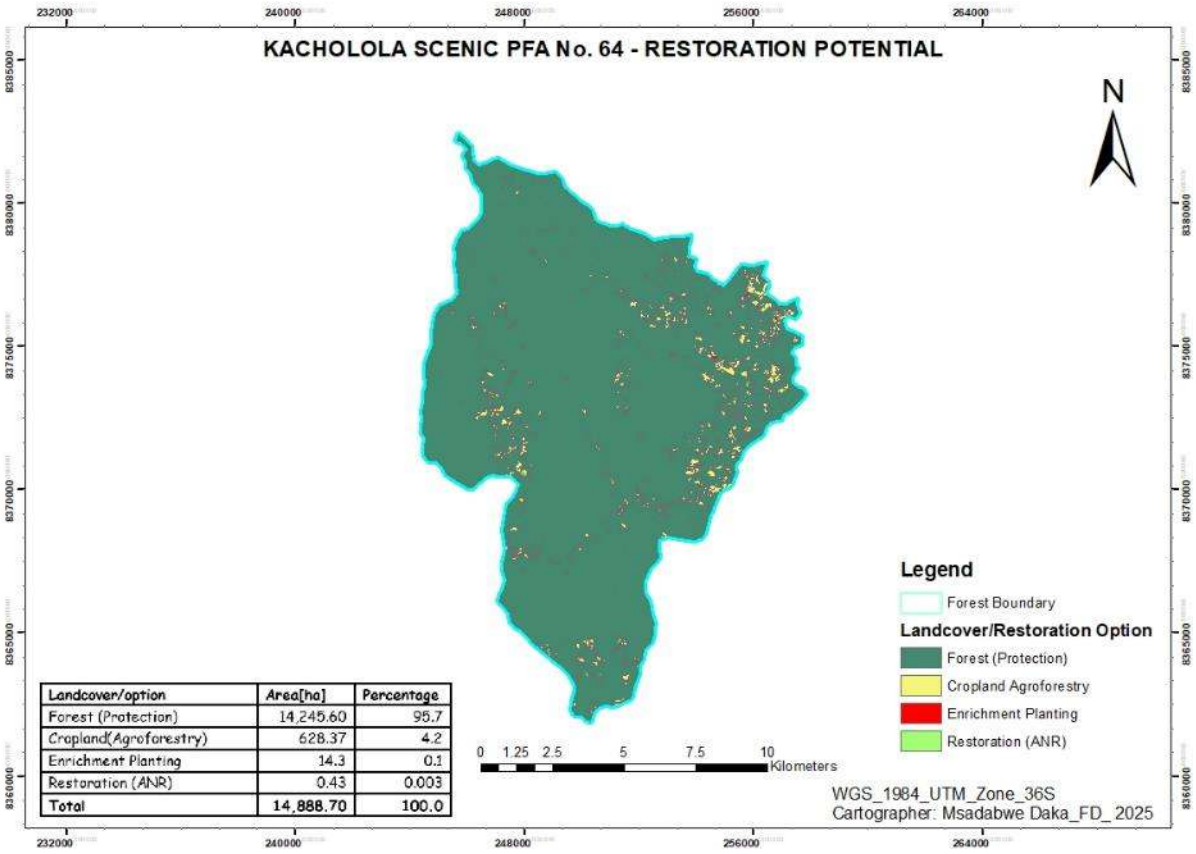


Figure 11 Restoration Potential Map for Kacholola Local Forest

NOTE: Projected restoration potential map was developed using Sentinel-2 2025 images (date filtered: 2024-01-01 - 2025-07-01) at a resolution of 30 meters. Land use land cover (LULC) classification was performed using a supervised classification method for accurate IPCC classes, with all computations performed in Google Earth Engine. The Normalised Difference Vegetation Index was calculated for: Forest Land, Cropland, Grassland, Wetlands, Settlements, and Other Land. Since forest shapefiles were utilised, the area of different land classes was calculated using Compute Geometry in ArcMap. Therefore, the combined area may not necessarily be the same as the original gazetted forest area

5 SOCIO-ECONOMIC CONDITIONS

5.1 Household and Population dynamics

Forestry livelihood survey was conducted by the Zambia Statistics Agency (ZAMSTATS) Eastern Regional office, in November 2021. The main objective of the Forestry livelihood Survey is to measure the well-being of the communities dependent on Kacholola Local Forest 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 Kacholola Local Forest can be translated as having an average size of the household membership of about 5 per household.

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

Equation 1 Sampling enumeration areas

Data analysis

The 2021 forest livelihood survey was collected using Computer Assisted Personal interview (CAPI), using Tablets android Ver9. The CAPI system allows quality check of the data at the server (HQ) as it is collected. It also minimizes data entry errors after data collection, the data were subjected to extensive checks on their validity and consistency as it was synched to the server. Analysis was undertaken using statistical package SPSS version 24.

Kacholola Local Forest as at 2021 livelihood survey was surrounded by approximately 25 villages and farming blocks as indicated in Annex: III with a total population of 2,238. The main ethnic groups in the area are Nsengas. 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, Soya beans and groundnuts. The land tenure of the population surrounding the

Kacholola Local Forest is mostly under customary land tenure system. Those households within have formal 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 Kacholola Local Forest was found to be mainly primary level that contributed 52.5 percent, while tertiary contributed about 1.3 percent. The rest being No Formal Education and secondary education indicating 28.8 percent and 17.5 percent respectively. As shown in the pie chart below:

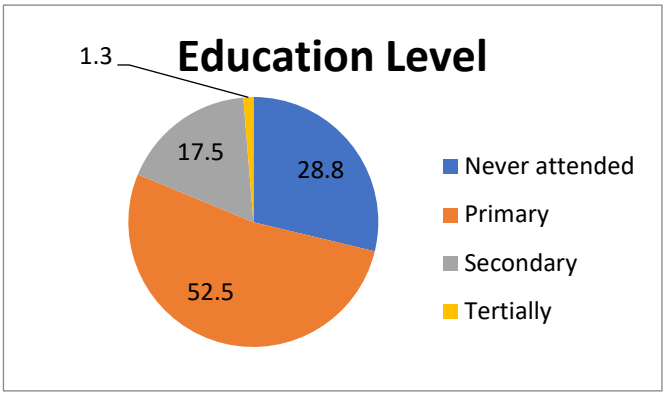


Figure 12 education levels attained.

Economic activity

Kacholola Local Forest reserve population depends on farming as their main occupation. The results showed that 70.0 percent of the household population surrounding Kacholola Local Forest reserve had farming as their main occupation, while the rest of economic activities contributed 1.3 percent those in paid employment and 28.8 percent in small businesses.

Main economic activity	Percent
Business	28.8
Employment	1.3
Farming	70.0
Total	100.0

Table 6 percentage distribution of main economic activity

The survey indicates that the majority depend of farming as main source of income as shown in the table above.

Types of energy used for cooking

Almost all households in the localities surrounding Kacholola Local Forest use firewood as their energy for cooking. The livelihood survey revealed a percentage of about 89.0 percent using firewood as energy for cooking while 11.0 percent use charcoal as energy for cooking. It shows how threatened the forest is as every household depends on the forest for cooking energy.

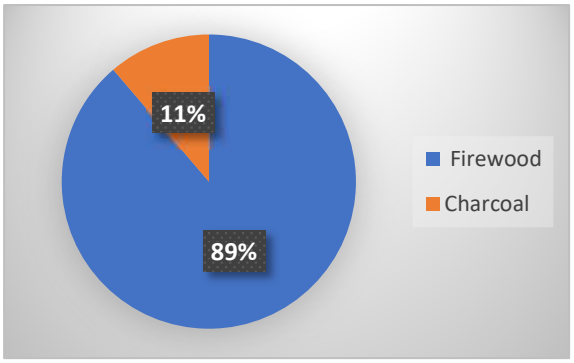


Figure 13 Types of energy used for cooking

Main tree resources used for firewood

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

FIREWOOD SPECIES
Brachystegia Boehmii
Brachystegia Bussei
Brachystegia Spiciformis
Diplorynchus Condylocarpon
Combretum Collinum
Combretum Molle
Pericopsis Angolensis
Coleospermum Mopane
Acacia Poliacantha
Pterocarpus rotundifolius

Table 7 Main tree resource used for firewood.

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 Kacholola Local Forest are as shown in the table below.

Non wood Forest products
• Mushroom • Caterpillars • Fruits

Table 8 Non-Wood Forest Products used by households surrounding the Kacholola Local Forest

Willingness of community to participate in forest Management of the forest reserve

The livelihood survey revealed that 81 percent of all the households interviewed were willing if called upon to voluntarily support management of the forest reserve with the Forest Department and other stake holders in the community. This is a lower percentage than found around other Forest Reserves in the Province.

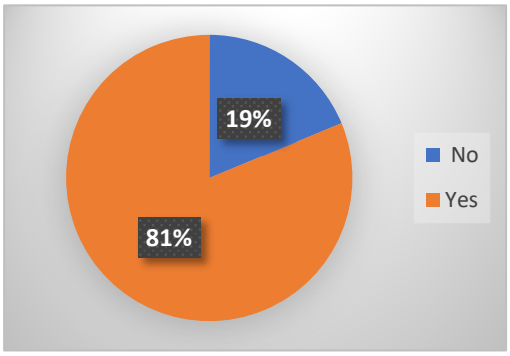


Figure 14 Distribution of willingness to participate when called upon to support FM

Land Occupation and Use

The livelihood survey for the communities surrounding the Kacholola Local Forest revealed that most of the land occupied by households is under customary arrangements (80 percent) compared to those who don't at 20 percent. All land occupied by households is mainly used for agriculture purpose.

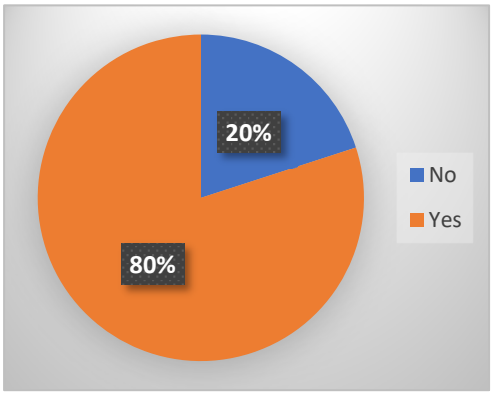


Figure 15 Land occupational use

Willingness to plant trees on land owned.

The survey revealed the willingness to planting trees by the households owning land. Those willing to plant trees on their land contributed 72 percent, while those not willing to plant trees had 28 percent contribution as shown in the below:

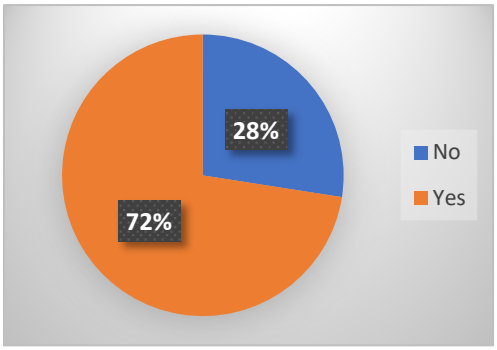


Figure 16 willingness to plant trees on land occupied by households

5.2 Utilization, issues and solutions proposed by stakeholders

Kacholola Local Forest consultative meeting held in December 2023, the stakeholders identified the uses and users of the forest reserve.

–

Uses of the forest

- Firewood
- Charcoal
- Fruits
- Mushroom
- Medicine
- Timber and poles
- Farming
- Thatch grass
- Honey

The Users of the forest:

1. The community surrounding Kacholola Local Forest
2. People from outside
3. Government institutions
4. Illegal miners
5. Hunters (wildlife)

Issues	Solutions
- Uncontrolled cutting of trees for charcoal and timber	- Afforestation, creation of woodlots, Alternative livelihood eg Beekeeping, poultry, fish farming - Strengthening already existing laws
- Late fires	- Early burning/fire break
- Illegal settlement	- Engagement with His Royal Highness, Forestry Department, Community representative
- Loss of forest land to agriculture	- Promoting Climate Smart Agriculture
- Illegal Mining	- Law enforcement to ensure procedure is followed

Table 9 Issues and solutions identified

5.3 Enterprise opportunities

A healthy forest ecosystem provides a strong foundation for income generation through forest products by maintaining biodiversity, soil fertility, and water resources essential for their sustainable production. When forests are in good ecological condition, they support the growth of high-value timber and Non Timber Forest Products (NTFPs) which local communities and others can harvest and commercialize in a regulated manner. A well-managed forest ensures a continuous supply of these resources without depleting them, allowing for long-term economic benefits.

Kacholola Local Forest provides a number of income generation/enterprise opportunities based on the current forest condition, the interests of local communities and other stakeholders, but particularly based on the commitment to sustainable forest management through agreed institutional arrangements already described. The foundations for community based forest enterprises can be built on the elements of forest resource condition and associated forest product availability, access to markets, an identified enterprise group and importantly, overall governance arrangements to regulate access, use and protection of the forest.

Through the resource assessment and mapping exercise, combined with the socio-economic survey, stakeholder consultation as well as the community forestry management planning process, the following enterprise opportunities have been identified:

Potential Forest product enterprises

- Beekeeping
- Wood biomass energy production
- Wild fruit and mushroom harvesting
- Nature based eco-tourism through public, private, community partnerships

The development of the above identified opportunities would be subject to conduct of specific forest product value chain analysis and enterprise development assessment to ensure a viable and financially feasible forest based enterprise could be promoted in line with the Forestry Department Forestry Enterprise Strategy for 2025-2030. This strategy seeks to promote sustainable forest management while enhancing value addition in forestry value chains through empowering local communities.

Respecting the overall condition of the forest, the size and location as well as recognizing the original reasons for reservation as a scenic reserve, there could be good opportunity for nature based /ecotourism related activities. The forest was originally reserved as it was the mid point between Chipata and Lusaka, and was therefore originally the location for a Government resthouse. It is believed the reservation proposal was based on the scenic nature of the location of the resthouse and was aimed at securing the natural heritage of the area, hence the scenic reserve being part of the name of the forest. Therefore Kacholola represents an opportunity

for developing one or more nature based enterprises through a Public, Private Community Partnership arrangement as a means to safeguard the environment, attract investment and protection measures while offering potential and innovative benefit sharing arrangements as envisaged by the National Forestry Policy, 2014.

5.4 Encroachment – illegal settlement and cropping

Kacholola Local Forest has over the years been lightly encroached by influx of migrants from surrounding areas and Chiefdoms. This said, agriculture, timber logging and informal land allocation for settlement and illegal mining will be the major challenges facing the Local Forest as land is limiting in other parts of the country. Over the years, various initiatives have taken place to address including meetings with traditional leaders, stakeholder meetings and a programme of issuing notices to those illegally settled within the Reserve. In 2018 a programme of issuing notices to those illegally settled within the Reserve was conducted following a nationwide instruction from the Minister of Lands and Natural Resources.

The steps to involve stakeholders in the protection and management as well as economic development of Kacholola Local Forest through approaches such as Community Forestry are yet to begin. Initiatives to address and reverse the situation with a view to sustain the ecological functions of the Local Forest as well as meeting the social, cultural and economic needs of the local community are set out in the following chapter.

6 PROPOSED MANAGEMENT ACTIONS

In view of the expected increase in the human pressures on this Local Forest, the overall objective is to secure the ecological functions of the forest through engaging local stakeholders and surrounding communities and agree new strategies for management of the Local Forest. This includes applying the approaches such as the community forestry process which supports community control, use and management of forest areas in partnership with the Forestry Department as well as involving private sector entities as appropriate. This approach and other associated interventions conform to the stated purpose of a Local Forest as described in section 19 of the Forests Act, 2015, and follow the requirements of the Forest (Community Forest Management) Regulations, Statutory Instrument no 11 of 2018:

Purpose of Local Forest

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—

(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.

Figure 17 Purpose of a Local Forest Section 19, the Forests Act, 2015

The emphasis will be on Forest Landscape Protection and Restoration (FPLR) as a process for securing ecological functionality, increasing availability of resources and therefore enhancing values across the forest landscape of KLF. The approach will be to secure areas with forest cover and restore areas of lost forest cover with people's participation in order to improve environmental, social and economic impacts. In order to achieve these impacts, the main management strategies identified focus on steps to protect, restore and replant, as follows:

- **Protect** - areas where the forest is intact with local stakeholder involvement;
- **Restore -** the forest where it is degraded by promoting regeneration encouraging regrowth of local species or reafforestation with people's participation.
- **Replant** - increase forest cover through planting tree species in fields where cropping is taking place. This aims to increase tree cover, soil fertility, provide fodder and small biomass for energy needs. Further, reafforestation through planting of indigenous or exotic species in abandoned fields in a plantation environment where practical.

Opportunities for collaboration with partners and seeking investment in nature based activities as well as through climate financing through climate change mitigation / emissions reduction trading will be explored to provide the investment, incentive and reward for sustainable land management in the forest. Sharing benefits from the Jurisdictional Sustainable Landscape Programme will be core to the process of incentivising and rewarding good practices in mitigating the effects of climate change and providing the mechanism for monetary benefits to accrue to local communities and other service providers from carbon trading by Government.

6.1 Zoning the forest for effective management

This management plan recognizes the 2 major zones identified during the stakeholder consultation of December 2023, which identified use of the forest, the main users of the forest, issues affecting Kacholola Local Forest, local solutions and permitted activities. A further zone (3) covers the immediate area surrounding the Local Forest to act as a buffer which will be the focus of development as well as emissions reductions related activities.

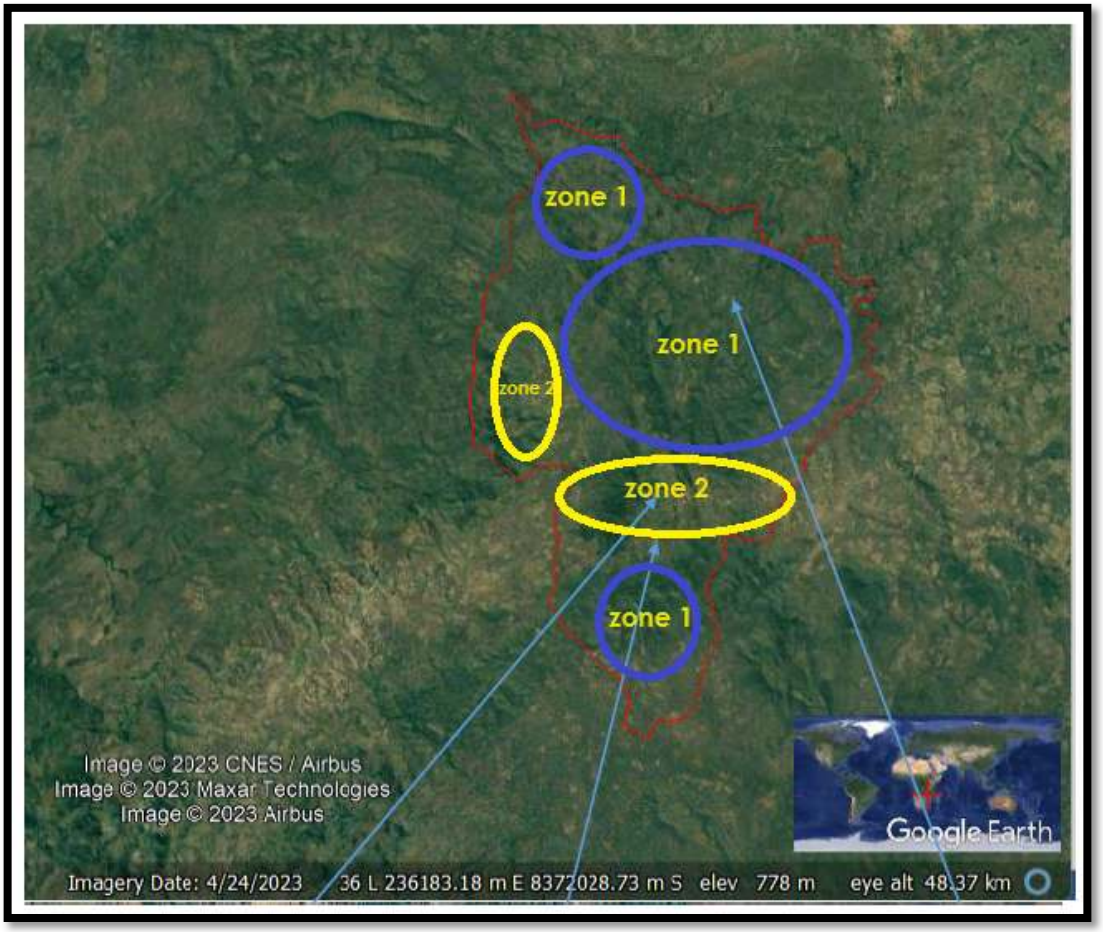


Figure 18 Zoning of Kacholola Local Forest based on community consultation

Zone 1: Forest Protection, Management and Conservation of Biodiversity

Kacholola Local Forest is an important forest ecosystem. 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 stakeholders and 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 this protection zone. This zone also has potential for promoting nature based economic activities and will be investigated for potential public, private community partnerships.

Zone 2: Forest restoration zone

This covers the areas already impacted by human activity including seasonal and permanent farming and in some case informal settlement. The main focus within this zone is to re-establish tree cover and therefore conform with the purpose of the Local Forest. This will involve promoting forest restoration approaches, agroforestry and tackling the core issue of encroachment through a variety of initiatives. Continuation of environmentally harmful crops such as cotton and tobacco growing within the Local Forest should be reviewed.

Zone 3: 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.

Management Zones 1 & 2: 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 workplans will be developed by the community with technical guidance from the Forestry Department to ensure the sustainable management of these zones.

6.2 Forest landscape restoration guiding principles

Successful forest landscape restoration (FLR) integrates a number of guiding principles, including:

- *Focus on the entire landscape*. Consideration of protection activities including restoration across the entire landscape of Kachololа Local Forest as opposed to individual sites. This entails balancing a mosaic of land uses across the gazetted forest and surrounding areas, such as securing intact forested areas, regenerating degraded forests, promoting agroforestry systems, climate smart agriculture, well-managed plantations where appropriate. This will include identifying ecological corridors and riparian strips to protect watercourses and waterways.
- *Sustaining and restoring ecological functions.* Sustain and restore the ecological functionality of the landscape, such as its richness as a habitat, its ability to contain erosion and floods, and its resilience to climate change and various disturbances. This can be done in many ways, one of which is to restore the landscape "back" to the "original" vegetation, but other strategies may also be used, ranging from natural regeneration to tree planting.
- *Allowing for multiple benefits.* Increasing tree cover across the landscape including existing cleared farmed areas, without necessarily forming a forest canopy, in order to enhance food production, reduce erosion, provide shade, and produce firewood. In other places, trees may be added to create a closed canopy forest capable of sequestering large amounts of carbon, protecting downstream water supplies, and providing rich wildlife habitat.
- *Promoting stakeholders involvement.* Actively engaging local stakeholders in decisions regarding restoration goals, implementation methods, and trade-offs for sustainable land management practices, which provides incentives and performance benefits.
- *Adaptively managing* the restoration strategy over time as environmental, social and economic conditions evolve supported through continuous monitoring and learning through the restoration process.

The forest condition analysis conducted to supplement the data from the forest inventory (displayed in section 4.7) indicates the location of different types of potential interventions aiming to promote Forest Protection, Management, Conservation of Biodiversity and Restoration. This helps guide more detailed planning that will take to implement the various management actions.

6.3 Core forest management actions

The identified management actions are described as follows:

Action 1: Forest Protection, Management & Conservation of Biodiversity

Kacholola Local 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. However, the awareness of the importance of ecosystem services, conservation of biodiversity and climate change mitigation services of Kacholola 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.

Therefore the following are the 7 steps that the stakeholder communities have to be taken through in order to develop a full partnership for shared management:

1. Stakeholder engagement, community awareness raising and mobilisation;
2. Stakeholder mapping including forest use, users and geographic interest.
3. Forming community level institutions to coordinate, manage and control local resource use in partnership with the Forestry Department.
4. Developing forest product and issues based operational management plans for areas of interest.
5. Agreeing roles, rights, responsibilities and obligations for shared management.
6. Implementing practical forest protection and management interventions that bring value and other environmental and social benefits.
7. Conducting joint monitoring and evaluation of management and benefit sharing measures to ensure a sustainable partnership.

These 7 steps to establishing shared management responsibilities and benefit sharing directly mirrors the 7 steps of the National Guidelines for Community Forestry in Zambia. Therefore tangible steps will be taken to incentivise and reward local stakeholder communities in the protection and management of Kacholola Local Forest through following the community forestry development steps and processes.

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

No	Specific Objectives	Strategy	Actions	Responsible	Indicators
1	To develop a shared management approach to forest protection, management and utilisation.	1. Stakeholder engagement, community awareness raising and mobilisation;	Conduct awareness meetings with traditional leadership & communities	FD	Meetings conducted
		2 Stakeholder mapping including forest use, users and geographic interest.	Conduct meetings to determine effective span of management control across KLF	FD	FPIC Meetings conducted
		3. Forming community level institutions to coordinate, manage and control local resource use in partnership with the Forestry Department.	Through participatory processes, form local committee responsible to coordinate and assist management of the KLF	Community groups & FD	
		4. Developing forest product and issues based operational management plans for areas of interest.	For each Zone and area of shared management, development management plans and resource use rules		
		5. Agreeing roles, rights, responsibilities and obligations for shared management.			Signed CFM agreements. Annual work plan reports
		6. Conducting joint monitoring and evaluation of management and benefit sharing measures to ensure a sustainable partnership.	See monitoring section of KLFMP		

No	Specific Objectives	Strategy	Actions	Responsible	Indicators
2	To protect the Forest from late fires	Practice 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
3	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
4	To conserve and enhance the biodiversity of the forest reserve through environmental awareness and education.	Enhance understanding of the forest ecosystem and its function and benefits to community groups and schools.	-Awareness on biodiversity with regard to indigenous knowledge. -Promote local participation and ownership through meetings.	FD/NGOs	
5	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 damage
6	To significantly reduce levels of illegal forest product harvesting.	Involve local communities in the management to create a sense of ownership. Engage honorary forest Officers	-Conduct sensitization meetings. -Conduct forest patrols.	FD/ community and other security wings	Number of illegal harvesters/ activities reduced
7	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 on indigenous knowledge of Forest-adjacent communities. 2.Promote local participation and benefits from eco-tourism as a means increasing awareness of biodiversity	FD/ Forestry Research	Levels of community participation in forest management activities is sustained over time.

Table 10 Management action 1 activities

Action 2: Forest Restoration 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 and within Kacholola 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 and within Kacholola Local Forest. Within this management action, the following interventions will be undertaken in Zone 2 of the Local Forest as well as extension services and activities in Zone 3, the areas surrounding Kacholola Local Forest;

- Promotion of community forestry and the establishment of a community forest management group;
- Promote interventions with community groups to protect, restore and replant, as follows:
    - **Protect** - areas where the forest is intact with local stakeholder involvement;
    - **Restore -** the forest where it is degraded by promoting regeneration encouraging regrowth of local species or re-afforestation with people's participation.
    - **Replant** - increase forest cover through planting agroforestry species in fields where cropping is taking place. This aims to increase tree cover, soil fertility, provide fodder and small biomass for energy needs. Further, re-afforestation through planting of indigenous or exotic species in abandoned fields in a plantation environment where practical.
- Promote 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;
    - Nature based ecotourism.

  Note: See section 6.4 below for more detail.

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 protect, restore and replant forest cover in the fragmented forest areas of the Local Forest	To Provide Forest extension services.	Training the communities in assisted natural regeneration Promotion of agroforestry and Woodlot establishment for communities surrounding the forest.	FD	Hectarage of forest in the fringe areas increased year on year.
3. 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 Nyimba DFO nursery.	FD/ Agric/ CSO's/ community	Tonnage of GHG emissions in the forest reserve reduced by 15% by mid year review.
4. 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 midterm review
5 Reduce forest dependency by local communities.	Promoting diversification of activities, particularly on-farm activities such as agroforestry and establishment of	Involve local communities in woodlot establishment.	FD/ Adjacent communities	Number of people dependent on the forests reserve reduced by half at

Specific Objectives	Strategy	Actions	Responsible	Indicator
	wood-lots, to create alternative Sources for forest products.			midterm review
6. To contribute towards meeting social, cultural and economic needs and improving the livelihoods of forest-adjacent communities.	Forest resource condition is 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.
7. 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.

Table 11 Management Actions 2 Activities

6.4 Promoting Forest Based Enterprises

Based on the condition of the forest including plant species as well as information gathered during the socio economic assessment and stakeholder consultation meetings, a number of enterprise opportunities were identified and described earlier. Therefore through the proposed management actions where appropriate in the relevant zones, forest based enterprises will be promoted within the context of the purpose of a Local Forests as described in the Forests Act, 2015. These relate to utilisation of forest resources at local level in order to meet the social, cultural and economic needs of the local community whilst ensuring the protection of ecosystems, particularly the protection of land and water supplies of local strategic importance. These reflect the importance of the principles of sustainable forest management. Therefore the following enterprise initiatives are highlighted for promotion through local stakeholder involvement:

Forest product/ enterprise	**Beekeeping**	**Wood biomass energy production**	**Wild fruit harvesting**	**Nature based tourism**
Market/ demand	High, local & urban (Lusaka and other towns)	Medium local, potential supply Lusaka	To be determined beyond local area	Potential visitors from Lusaka, traveller stopover, photo-safari
Product supply	Patches of flowering trees with suitable pollen fodder, water restricted to certain areas	Through agroforestry & forest restoration activities	See inventory	Scenic reserve, hiking, game reserve potential
Potential entrepreneurs	CFMG plus individual beekeepers	CFMG plus individual households	Individual households	Private sector investors
Opportunities	Honey off-takers are available in the district as a ready market.	Planned forest restoration works including agroforestry in cropped areas, potential bamboo sites, Tobacco growers in Kasenengwa. Trading opportunity on Mambwe - Chipata road	Existing livelihood activity conducted by women. Trading opportunity on Mambwe - Chipata road	Extensive area of high scenic value, adjacent to Luangwa river, Increasing international tourism interest in Zambia, Community game reserve (see nearby Nyalugwe Community Game Ranch)
Challenges	Investment in sufficient hives, Honey bulking centre and water reticulation system investments, technical & business skills training	Seedlings, marketing	Drying, processing and packaging facilities	External investment and tourism development capability with marketing expertise
Source of investment finance	Development projects & partners, CDF	Development projects & partners, CDF	Development projects & partners, CDF	Private investment partners, CDF

Table 12 Promoting potential forest based enterprises

In the case of Kacholola Local Forest, the enterprise development process will form part of the community engagement and strengthening of community forestry practice and strong involvement in any public, private community partnerships in the reserve. This provides for monitoring and mentoring, development and review of annual work plans and periodic review of CF Management plans. These include a forest product importance, use and management matrix and forest enterprise development activities. Once there is consensus on developing an enterprise concept, an assessment of market and value chain issues will be formed into a bankable business opportunity. Importantly the support to business development and investment will primarily focus on four key areas of strengthening capacity for viable community based forest enterprises:

- Enhancing technical skills in production, harvesting, processing;
- Building business capacity, including business planning, marketing, financial management, reinvestment and profit sharing:
- Strengthening governance arrangements and membership, conflict resolution mechanisms;
- Improving forest protection, management and monitoring arrangements upon which the business depends on.

Based on the above, formulation of detailed bankable business and investment plans can be developed and supported through financing opportunities from development projects, private sector partners and though Community Development Funding through the local authority.

6.5 Fire management strategy

Fire has a critical impact on the forest environment, the condition of the forest and the services that it provides. While fire is frequently naturally occurring in the dryland forests of Eastern Province, it has been used as a management tool technically by foresters as well as by communities for different socio-economic and cultural needs. However, fire that occurs late in the year when the forest is dry causes the greatest harm to the health of the forest as well as the succession process influencing the future productivity, abundance of forest products and therefore its economic contribution locally and nationally. Further, forest fire is a key source of emissions of greenhouse gases (GHGs) in Eastern Province, that affects weather patterns, locally, regionally and globally. Therefore if managed correctly as a management tool, prescribed fire can reduce these emissions and impacts, safeguarding the forest resources, biodiversity while providing enhanced opportunities for local economic development.

Therefore a **fire management strategy and plan** is essential for the proper management of the forest incorporating elements of fire protection and fire suppression. Recognising the important role the forest plays in support to surrounding communities, the fire management strategy for the Local Forest will be developed through stakeholder consultation and implementation participation with

clear roles and responsibilities. The **fire protection strategy** should indicate: priority areas for protection – valuable and fire sensitive species, newly planted areas, enrichment planting, areas of fire sensitive natural regeneration, as well as high risk areas based on access, use and past frequency of fires. Based on the participatory assessment, protection measures such as: firebreaks – both internal and boundary should be planned, areas for prescribed (early) burning identified as appropriate. An action/ activity plan with roles, responsibilities and timings should be discussed and agreed with stakeholders.

The **Fire suppression strategy** details the response should a wild-fire start which threatens the forest area. This will detail the pre-planned procedures along with roles and responsibilities. It will include the following:

- **A fire detection system:** The process and procedures to report the incidence of fire to promote prompt reaction and therefore protection.

- **Procedures in response to a fire alert:** How to alert stakeholders and local community members to assist with fire suppression including the availability and location of equipment to fight the fire.

- **Fire fighting strategy:** This will include details of various approaches to tackling fires using the materials and equipment that are available locally.

- **Methods to fight fires:** This will cover different fire suppression methods depending on the nature of the fire (Frontal attack, Flank attack, Indirect attack – back burning). These will have been explained and key personnel trained in each of the approaches. This will also include risk assessment methods and requirements for personal protective equipment.

A Fire Education Strategy will be developed at the start of the implementation of the FMP: This aims to raise awareness of the community on the impact of fire and the need to protect the forest from fire. Groups which represent a higher risk should be targeted for education, eg, honey collectors, charcoal burners, mice collectors, schoolchildren etc.

6.6 Law enforcement strategy

This Law Enforcement Strategy aims to protect and sustainably manage Kacholola Local Forest; P64, through effective enforcement of legal provisions, regulations, and community participation. Ensuring compliance is essential to prevent illegal activities such as illegal logging, poaching, and forest encroachment.

1.1. Objectives

- To prevent illegal exploitation of forest resources.
- To promote community participation in enforcement.
- To ensure timely and fair response to violations.

2. Key Enforcement Strategies

2.1 Regulation of Forest Activities

- Designating legal zones for access, logging, and charcoal production.
- Issuing permits and licenses for activities like harvesting, collection, and tourism.
- Enforcing restrictions on cutting, hunting, or collecting forest products outside authorized zones.

2.2 Monitoring and Surveillance

- Regular patrols by forest rangers and enforcement officers.
- Using technology such as drones, and GPS tracking.
- Engaging Honorary Forest Officers in reporting illegal activities.

2.3 Community Involvement in Law Enforcement

- Strengthening community forest groups' role in patrols and reporting.
- Providing incentives for communities that actively participate in enforcement.
- Publicizing penalties to serve as deterrents.

2.4 Collaboration with Stakeholders

- Coordinating with police, community groups, NGOs, and traditional leaders.

Promoting joint patrols and awareness campaigns.

6.7 Environmental and social safeguards and other crosscutting issues

The Forestry Department shall ensure that the management of Kacholola 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 Kacholola 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 Kacholola 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 work plan 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

Table 13 Grievance redress mechanism

6.8 Sources of revenue

Climate change emissions reduction trading

The Government of the Republic of Zambia has identified climate financing as a potential source of revenue to support climate change mitigation and adaptation activities to safeguard the natural environment and importantly the ecosystem services that society as a whole and specifically rural communities depend on for their livelihoods and well being. In the Eastern Province, the Ministry of Green Economy and Environment is implementing the Jurisdictional Sustainable Landscape Programme (EP-JSLP). The Programme Development Objective (PDO) is "to promote greenhouse gas (GHG) emissions reduction or removals in the Eastern Province, while simultaneously improving rural livelihoods including forest and wildlife conservation and management. These emissions reductions are being measured, verified, traded and revenue distributed according to an agreed Benefit Sharing Plan. An estimate has been made of the potential revenue that might be generated through the GRZ emissions reduction trading under the JSLP benefit sharing mechanism. The GHG baseline inventory indicated that the major emissions

in the Province are coming from forest land through degradation from forest fires. Implementing improved forest management, conducting fire management and protecting the integrity of the forest areas including from forest loss, degradation and encroachment can be measured and monetised.

In the case of Kacholola Local Forest and based on the intact forest area of 90% may generate emissions reduction of 13,680 tonnes of carbon equivalent which may be monetised to generate around $41,040 or ZMW 1,026,000 annually. This may increase as prescriptions of forest restoration may result in increased carbon sequestration that can be measured and monetised.

6.9 Summary Budget of Forest Management Plan Implementation

Based on the proposed management actions described above, a budget has been developed covering the period of the plan. The summary table is provided below with the detailed cost breakdown in the Annex VII.

Forestry Programme	**Cost in ZMW for 10 years**
1 Forest Conservation through Community Participation and Livelihood Development	2,596,793
2 Forest Protection, Restoration, Management and Conservation of Biodiversity	1,930,723
3 Support the development of viable forest based enterprises	562,498
Grand Total (ZMW)	**5,090,014**
Potential revenue generation (10 years)	**12,028,062**
Surplus	**ZMW 6,938,048**

Table 14 Summary budget of the Kacholola Local Forest Management Plan Implementation

7 STAKEHOLDERS ROLES AND RESPONSIBILITIES

Effective implementation of the Kacholola Local Forest Management Plan (FMP) requires active participation and collaboration among all key stakeholders. Each stakeholder has specific roles and responsibilities to promote sustainable forest management, conservation, and community development.

District Forest Office (DFO)

The District Forest Office plays a pivotal role in on-the-ground forest management, enforcement, and community engagement. Its specific responsibilities include:

- **Conduct Regular Patrols:** Carrying out routine patrols within the Kacholola Local Forest to prevent illegal activities such as unauthorized logging, poaching, and encroachment.
- **Maintain Boundaries and Beacons:** Ensuring all forest boundaries and beacons are clearly marked, visible, and maintained to prevent boundary disputes and illegal incursions.
- **Monitor Forest Recovery and Growth:** Tracking forest regeneration, health, and overall ecological status to inform management decisions and detect signs of degradation.
- **Develop and Implement Forest Fire Management Plans:** Establishing proactive fire prevention, detection, and suppression strategies, including community-based fire management initiatives.
- **Conduct Environmental Education (EE) Campaigns:** Raising awareness among local communities and stakeholders about sustainable forest use, conservation practices, and the importance of forest resources.
- **Train Communities in Sustainable Forest Management (SFM):** Providing capacity-building programs, workshops, and technical assistance to community members and forest management groups.
- **Report and Document Activities:** Preparing and submitting comprehensive reports on forest conditions, patrol outcomes, enforcement actions, and community engagement efforts to relevant authorities for oversight and planning.

Provincial Forest Office (PFO)

The Provincial Forest Office provides strategic oversight, governance, and support to ensure effective implementation of the Forest Management Plan. Its primary responsibilities include:

- **Monitoring and Evaluation:** Regularly assessing the implementation of the FMP at district and community levels using predefined performance indicators to measure progress and identify gaps.
- **Disbursement of Funds:** Managing financial resources allocated for forest management activities, community support programs, capacity-building, and infrastructure development.
- **Facilitation of Audits:** Overseeing and supporting the auditing process of District Forest Offices and community initiatives to ensure transparency, accountability, and proper use of resources.

- **Coordination and Support:** Offering technical guidance, resources, and capacity-building support to District Forest Offices, community groups, and other stakeholders involved in forest management.
- **Policy and legal framework:** Ensuring that the FMP aligns with national forestry policies and legal frameworks, particularly the Forests Act, 2015.
- **Stakeholder Engagement:** Facilitating communication and collaboration among government agencies, communities, NGOs, private sector partners, and other relevant entities.

Role of the Local Authorities

Local authorities are vital for integrating sustainable forest management into broader development initiatives at the district and community levels. Their responsibilities include:

- Incorporating the FMP into local development plans, ensuring that forest management considerations are mainstreamed into land use, infrastructure, and ecosystem planning.
- Facilitating alignment between forest management activities and other sectors such as agriculture, water, and health.
- Supporting the enforcement of forest laws and regulations within their jurisdictions.
- Promoting rural development projects that leverage forest resources to enhance community livelihoods and economic resilience.

Role of Traditional Authorities

Traditional leaders play an influential role based on customary authority, community trust, and cultural management systems. Their roles encompass:

- Providing mentorship and guidance to community members on sustainable resource use.
- Helping resolve conflicts related to forest access, use, and rights according to customary laws.
- Providing formal consent for community-based forest management processes, including recognition and signing of community forest management agreements with the Director of Forestry.
- Supervising the community forest management groups, ensuring their activities conform to customary norms and legal provisions.
- Overseeing access control, management of natural resources, and the conduct of community elections for forest management committees.
- Ensuring that enforcement of rules and resolutions reflects community values and customary laws.

Role of Communities

Communities are the primary custodians of the forest and hold the rights to sustainably manage and benefit from forest resources. Their responsibilities include:

- Controlling access to forest resources to prevent illegal activities and overexploitation.

- Actively participating in decision-making processes related to forest management.
- Implementing community-based sustainable forest practices as outlined in the management plan.
- Protecting the forest from illegal activities such as logging, poaching, and encroachment.
- Ensuring equitable sharing of benefits derived from forest resources, including income, employment, and social services.
- Reporting violations and participating in community-led enforcement efforts.
- Maintaining the community forest management groups and ensuring transparency and accountability in their operations.

Role of Honorary Forest Officers (HFOs)

Honorary Forest Officers are community members appointed based on peer nominations and official approval by the Minister. Their roles include:

- Facilitating community compliance with forest laws, bylaws, and resolutions.
- Supporting enforcement of sustainable harvesting and access regulations.
- Acting as mediators in conflict resolution within the community regarding forest use.
- Reporting infractions and assisting in investigations related to illegal activities.
- Collaborating with District Forest Officials to ensure harmonized enforcement efforts.

Role of Private Sector and Civil Society Organizations (CSOs)

Private sector entities and civil society organizations are crucial for fostering economic development and social empowerment through forests. Their roles include:

- Providing technical and financial services to support community enterprises, such as training, capacity building, and infrastructure development.
- Developing market linkages for forest-based products, ensuring fair trade and sustainable value chains.
- Promoting innovative approaches and investments that enhance forest conservation while generating income.
- Supporting additional services such as environmental education, capacity building, and advocacy for policy reforms.
- Facilitating the development of non-timber forest products (NTFP) enterprises, eco-tourism, and other sustainable livelihood opportunities.
- Monitoring social and environmental impacts of forest-based activities to ensure compliance with sustainability standards

8 MONITORING AND EVALUATING IMPLEMENTATION

Monitoring and evaluation (M&E) of the management plan is essential since it provides a basis for observation, adjustment and improvement of the targeted activities and assessment of the achievements. The Forest Management Plan will be implemented by Forestry Department by involving local communities around the forest reserve. The Department will provide a forum for dialogue, consensus building, priority setting and balancing of the various interests involved. Monitoring and evaluation of this management plan will also be based on annual work plans that will be prepared for Kacholola Local Forest which will operationalise the management actions described in Chapter 6.

8.1 Monitoring

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

8.2 Evaluation

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

8.3 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.

8.4 Strategic monitoring indicators

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

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

9 ANNEXES

Annex 1: Declaration Order, Topo Map & Inventory Map

Order by the Minister

This Order may be cited as the KACHOLOLA LOCAL FOREST (SCENIC) NO. P64: KACHOLOLA LOCAL FOREST (DECLARATION) ORDER

Government Notices 2 of 1957
Government Notices 267 of 1964
Statutory Instrument 66 of 1975

Starting at the confluence of the Tanzya River with the Mchimadzi River, the boundary follows the latter river upstream to its confluence with the Mvunguti Stream; thence up this stream to its source; thence is a straight line to the source of the Nyampundu Stream; thence down this stream to its confluence with the Kasongo Stream; thence up this stream to its confluence with the Katumbi Stream; thence up this stream to a point approximately 182.88 metres downstream of its source; thence on a true bearing of approximately 351 degrees for approximately 154.4 metres to a point in the Tanzya River; thence down this river to its confluence with the Kasendeka Stream; thence up this stream to its confluence with the Mabenda Stream; thence up this stream to its source; thence on a true bearing of approximately 1 degree for approximately 1,280.16 metres to a point in the Kangamuzi Stream; thence down this stream to its confluence with the Tanzya River; thence down this river to its confluence with the Mchimadzi River, the point of starting. The area described above, in extent 15,200.53 hectares approximately, is shown bordered green upon Plan No. FR109/1 deposited in the office of the Surveyor-General, signed by him and dated 6th October, 1961..

1. Map of Kacholola Local Forest in relation to Chiefdom boundaries (1958 map)

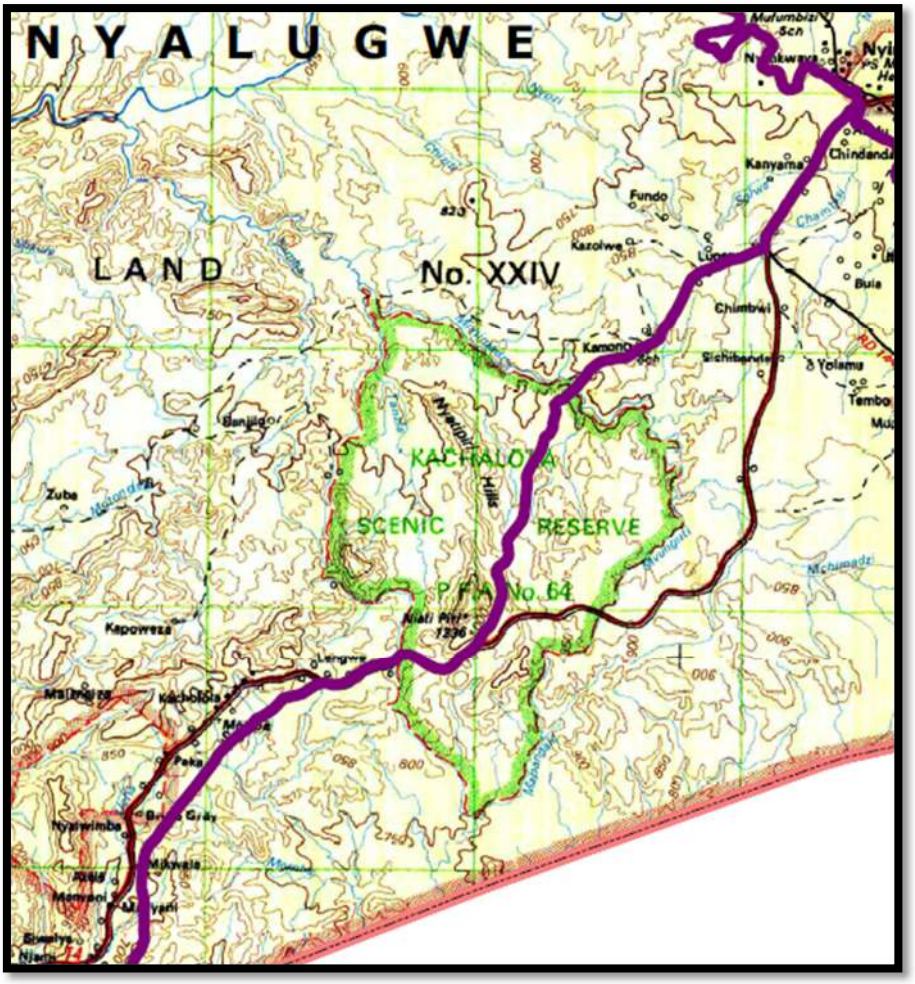


Figure 19 Map showing Chiefdom Boundaries around KLF

2 Map of forest zones relating to forest condition

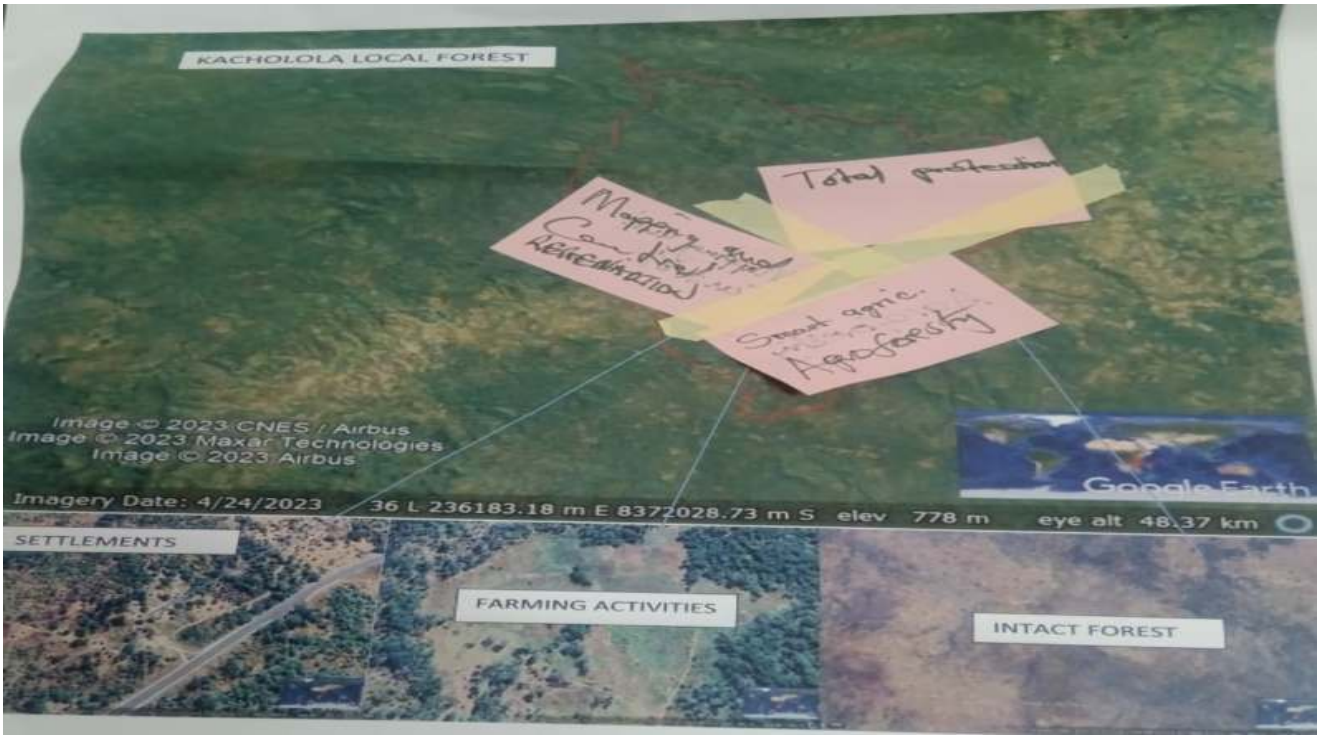


Figure 20 Map showing forest zones from stakeholder meeting

3 Map indicating location of squares for the forest inventory sample points

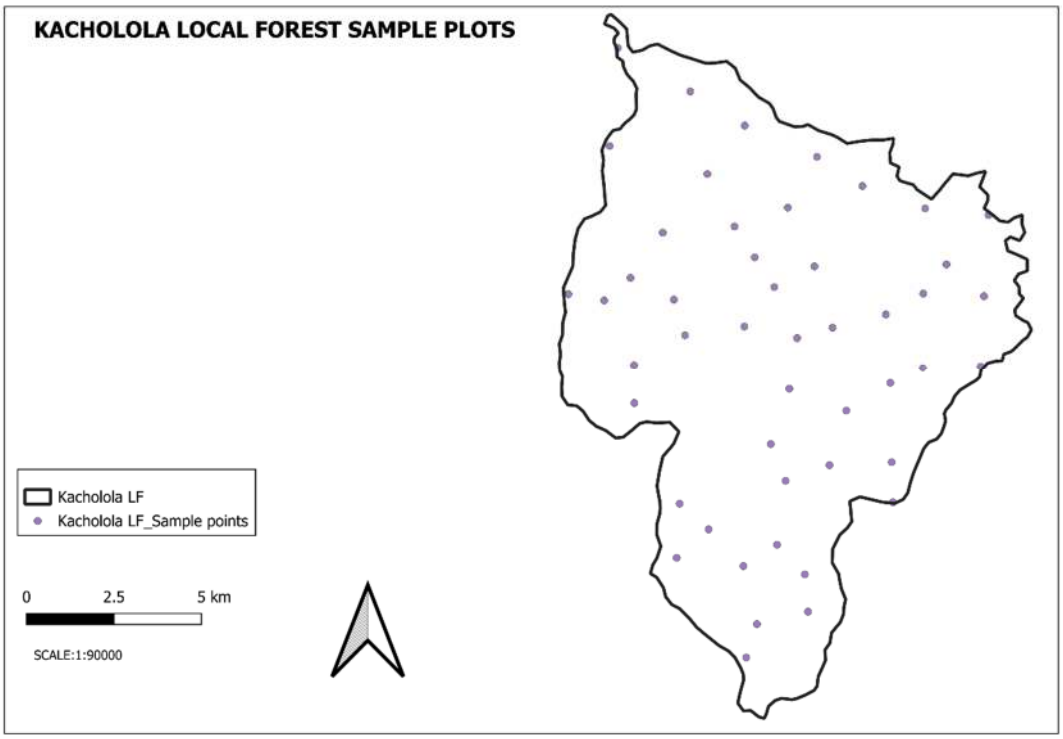


Figure 21 Map showing inventory sample plots

Annex II: Inventory Data

Kacholola Local Forest Density by diameter class per hectare for all species
INVENTORY --- Results, Database,
number 3667
DIAMETER CLASS, /HA

Species	Code	0-4	5-9	10-14	15-19	20-29	30-39	40+	Total
Density	Total	0.418143	183.56	106.8351	66.69357	56.24	20.698	10.03543	444.48
Acacia polyacantha	6	0	1.463429	0.627143	0	0.836286	0.627143	0	3.554143
Acacia sieberiana	7	0	1.881571	1.254429	0.418143	0	0	0	3.554143
Afzelia quanzensis	13	0	0	0	0.209	0.209	0	0	0.418143
Albizia adianthifolia	15	0	0.209	0.209	0.209	0.418143	0	0	1.045286
Albizia antunesiana	17	0	0.836286	0	0	0	0.209	0.209	1.254429
Annona senegalensis	25	0	0.836286	0	0	0	0	0	0.836286
Azanza garckeana	26	0	0.418143	0	0.418143	0	0	0	0.836286
Baphia bequaerti	30	0.209	1.254429	0.627143	0.627143	0.627143	0	0	3.345143
Bauhinia petersiana	34	0	26.761	8.362857	2.090714	0.209	0	0	37.42357
Berchemia discolor	37	0	0.418143	0	0.209	0.209	0	0	0.836286
Boscia salacifolia	44	0	0.418143	1.254429	0.627143	0.418143	0	0.209	2.927
Brachystegia boehmii	46	0	0.209	2.090714	3.136	3.345143	2.090714	0.627143	11.49886
Brachystegia bussei	47	0	12.75329	5.226714	1.881571	2.927	1.672571	1.672571	26.13386
Brachystegia floribunda	48	0	6.063	6.063	5.017714	10.24443	5.226714	2.508857	35.12386
Brachystegia longifolia	49	0	1.463429	0.418143	2.927	1.881571	1.045286	0.209	7.944714
Brachystegia manga	50	0	4.181429	3.136	4.181429	6.481143	2.508857	0.209	20.698
Brachystegia spiciformis	52	0	3.554143	2.299714	2.508857	2.927	1.672571	0	12.96243
Brachystegia taxifolia	54	0	0.418143	0.418143	0	0	0.209	0.627143	1.672571
Brachystegia utilis	55	0	0.418143	0	0	0	0	0	0.418143
Bridelia cathartica	57	0	0.418143	0.209	0.209	0	0	0	0.836286
Bridelia micrantha	59	0	0	0	0.209	0	0	0	0.209

Burttia prunoides	61	0	0.627143	0	0	0.209	0	0	0.836286
Cassia abbreviata	68	0	1.463429	0	0.209	1.045286	0.209	0.418143	3.345143
Combretum molle	86	0	3.345143	4.181429	2.717857	1.463429	0	0.209	11.917
Combretum zeyheri	89	0	17.98014	9.617286	4.808571	2.508857	0.627143	0.209	35.75114
Commiphora mollis	90	0	2.717857	3.136	1.881571	1.045286	0.209	0	8.99
Cussonia arborea	98	0	0	0.418143	0	0	0	0	0.418143
Dalbergia melanoxylon	101	0	2.299714	1.254429	0.627143	0.209	0	0	4.390429
Dalbergia nitidula	102	0	2.717857	0.418143	0.627143	0	0	0	3.763286
Dalbergiella nyasae	103	0.209	2.299714	1.045286	0.627143	0.418143	0	0	4.599571
Dichrostachys cinerea	108	0	0.627143	0.627143	0.209	0	0	0	1.463429
Diospyros kirkii	111	0	1.672571	1.672571	0.209	0.209	0	0	3.763286
Diospyros mespiliformis	112	0	5.435857	2.299714	1.254429	0.209	0.209	0	9.408143
Diplorhynchus condylocarpon	114	0	24.25214	12.75329	5.644857	1.881571	0.418143	0	44.95014
Dombeya rotundifolia	116	0	0.418143	0	0	0	0	0	0.418143
Ekebergia benguelensis	118	0	0	0	0	0.209	0	0	0.209
Erythrophleum africanum	127	0	0.209	0.209	0	0	0	0	0.418143
Euphorbia candelabrum	139	0	0	0	0.209	0.209	0	0.209	0.627143
Fagara macrophylla	144	0	0.209	0	0	0	0	0	0.209
Faurea saligna	145	0	0.209	0	0	0	0	0	0.209
Flacourtia indica	158	0	0.209	0.209	0.209	0	0	0	0.627143
Gardenia imperialis	168	0	0.418143	0	0	0	0	0	0.418143
Grewia spp	171	0	0.209	0	0	0	0	0	0.209
Hexalobus monopetalus	178	0	0.627143	0	0	0	0	0	0.627143
Hymenocardia acida	181	0	0	0.627143	0.836286	0	0	0	1.463429
Julbernardia globiflora	188	0	3.136	2.508857	3.345143	4.599571	0.627143	0.209	14.42586
Khaya nyasica	190	0	0	0	0.209	0	0	0	0.209
Kirkia acuminata	192	0	0	0.627143	0.418143	0.418143	0.418143	0.836286	2.717857
Lannea discolor	194	0	10.03543	6.481143	2.299714	1.045286	0	0	19.86171
Lannea stuhlmannii	199	0	0.418143	0.627143	0.418143	0.209	0	0	1.672571
Lonchocarpus capassa	200	0	0.209	0.418143	1.045286	0.209	0.418143	0	2.299714
Maesopsis eminii	203	0	0	0.209	0	0	0	0	0.209

Magnistipula thonninge	208	0	0.209	0	0	0	0	0	0.209
Markhamia obtusifolia	211	0	0.209	0.627143	0	0	0	0	0.836286
Monotes africanus	221	0	1.254429	0.836286	0.209	0	0	0.209	2.508857
Ochna pulchra	223	0	0.418143	0	0	0	0	0	0.418143
Pericopsis angolensis	239	0	0.418143	0.209	0.209	0.418143	0	0.209	1.463429
Phyllocomus lemaireanus	243	0	0	0.209	0	0	0	0	0.209
Piliostigima thonningii	244	0	0.418143	0.209	0	0.209	0	0	0.836286
Pseudolachnostylis maprouneifolia	258	0	6.272143	7.317429	4.390429	1.881571	0.209	0.627143	20.698
Pterocarpus angolensis	262	0	5.226714	2.299714	2.508857	3.136	1.045286	0	14.21686
Pterocarpus antunesii	261	0	1.881571	1.045286	0.627143	0.627143	0	0	4.181429
Pterocarpus chrysothrix	264	0	3.136	1.463429	1.045286	0.418143	0.209	0	6.272143
Pterocarpus rotundifolius	265	0	0.209	0	0.836286	0.418143	0	0.209	1.672571
Ricinodendron rautanenii	270	0	0.209	0	0	0	0	0.209	0.418143
Sclerocarya caffra	279	0	0	0.209	0.209	0	0.209	0	0.627143
Sterculia quinqueloba	285	0	0	0.209	0	0	0.209	0	0.418143
Stereospermum kunthianum	287	0	0.627143	0	0.209	0	0	0	0.836286
Strychnos cocculoides	288	0	0	0.627143	0	0	0	0	0.627143
Strychnos innocua	289	0	0	0.209	0	0	0	0	0.209
Strychnos spinosa	293	0	3.763286	1.463429	0.836286	0.209	0	0.209	6.481143
Swartzia madagascariensis	295	0	0.418143	0.627143	0	0	0	0	1.045286
Syzigium guineense	297	0	0	0.209	0	0	0	0	0.209
Tamarindus indica	300	0	0	0.418143	0	0	0	0	0.418143
Terminalia sericea	304	0	0.209	0.627143	0.418143	0.418143	0	0	1.672571
Terminalia stenostachya	305	0	2.508857	2.717857	0.418143	0	0	0	5.644857
Unknown	999	0	7.944714	2.927	1.672571	1.045286	0.209	0	13.79871
Vitex doniana	321	0	1.881571	0.627143	0.209	0	0	0	2.717857
Ximenia americana	328	0	0.418143	0.209	0	0	0	0	0.627143
Zanha africana	336	0	0	0	0	0.418143	0	0	0.418143
Zyziphus abyssinica	338	0	0.209	0	0.209	0.209	0.209	0	0.836286

Table 16 Inventory data showing species list and diameter class

Annex III: Demographics of major forest fringe communities

Demographics of major forest fringe communities of Kacholola Local Forest

Locality/Village	Total Pop	Male	Female
Akiyele	51	24	27
Azele	20	10	10
Chilamba	72	28	44
Chitambo	111	54	57
Edward	149	74	75
Elina	107	55	52
KK	115	63	52
Lingililani	11	6	5
Malalo	14	6	8
Mambo Penyani	186	77	109
Ndevu	14	8	6
Njelama	69	38	31
Nyambaleni	93	42	51
Nyampinga	93	49	44
Nyanthapo	289	128	161
Pa Solomon	30	13	17
Rabson	141	75	66
Sanjilo	53	27	26
Saukani	29	12	17
Simatanga	23	14	9
Tisatileni	79	33	46
Unikedi	8	5	3
White	135	56	79
Yona	77	32	45
Yuni	269	129	140
Total	**2238**	**1058**	**1180**

Table 17: Population Distribution of major forest fringe localities of the Reserve by gender

Distribution of headship surrounding Kacholola local forest by gender

locality/village	female	male	Total
Akiyele	4	7	11
Azele	2	3	5
Chilamba	7	6	13
Chitambo	5	18	23
Edward	7	23	30
Elina	18	17	35
KK	5	22	27
Lingililani	1	0	1
Malalo	2	2	4
Mambo Penyani	13	24	37
Ndevu	0	5	5
Njelama	5	10	15
Nyambaleni	14	11	25
Nyampinga	5	15	20
Nyanthapo	27	34	61
Pa Solomon	0	5	5
Rabison	7	22	29
Sanjilo	5	6	11
Saukani	4	2	6
Simatanga	2	3	5
Tisatileni	9	8	17
Unikedi	0	2	2
White	14	14	28
Yona	8	14	22
Yuni	28	40	68
Total	**192**	**273**	**437**

Table 18 Villages surrounding KLF

Annex IV: Stakeholder consultations

The Forestry Department in Eastern Province initiated a process to prepare forest management plans for forest reserves with support from Zambia Integrated Forest Landscape Project (ZIFLP). In accordance with section 41 of the Forests Act, 2015, a process of engagement with traditional leaders was conducted in order to gain support from the Chiefs in the preparation of the Forest Management plans before the proposed data collection activities and later local validation meetings. It was planned to meet their Royal Highnesses to gain consent and have an input in these Forest Management Plans.

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

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

Visitations: Chief Nyalugwe

HRH Chief Nyalugwe was informed of the upcoming validation meeting for consultations on FMPs for the Kacholola Local Forest in order to solicit their input in the FMP.

A background of the inventories conducted in 2021 in KLF and the interventions by ZIFLP in the Luangwa landscape and areas of interventions including Conservation Sustainable Agriculture, support to Forestry Department to continue protecting existing forest estates, support to nurseries and assisted natural regeneration in order to protect the forest estates in the district.

HRH welcomed the Kacholola Local Forest to become community forest managed (CFM).

Annex V: Stakeholder validation meeting

REPORT FOR KACHOLOLA LOCAL FOREST MANAGEMENT PLAN STAKEHOLDERS' VALIDATION MEETING HELD AT FARMERS TRAINING CENTRE, NYIMBA DISTRICT

1.0 Introduction:

The Forestry Department in 2021/2022 undertook a forest inventory exercise to take stock of the forest resources in Kachololа Local Forest (KLF) 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 2021/2022.

The Stakeholders Validation Meeting for (KLF) which covers an area of 15,200Ha in Nyimba District was organized to validate the FMP for the KLF which was developed by the Forestry Department. The Stakeholders Validation Meeting brought together participants drawn from community, government departments, local authority and traditional leaders.

2.0 Official Opening

The, District Commissioner Nyimba officially opened the Kachololа Local Forest FMP validation meeting

3.0 Meeting's Expectations

To begin with, the audience was asked about the meetings expectations. Below is what the stakeholders brought out as the four main expectations as:

i) Learn how to manage their local forests
ii) What will be agreed in the consultation will help protect KLF
iii) Come up with strategies to restore KLF.
iv) Share the findings of the forest inventory conducted in KLF.

Why need for FMP

In the Second session, Community was mainly invited to provide their input which would help in protecting and managing KLF, the importance of forests, why local forests were declared etc

- On-going forest degradation
- Rapid deforestation
- Unsustainable livelihood activities
- Inadequate community participation in forest and wildlife management, land use planning
- Increase in adverse effects of climate change
- Poor yield,

Importance of forests

- Soil conservation

- Co2 sequestration
- Habitat protection
- Water cycle

Local forests were declared for:

- Safety of forest resources
- Protection of the ecosystem
- Forest resources use by the locals
- To meet the socio-economic and cultural needs of the community

Way forward requirements

Need for: Consensus, active support & collective action. Government desire is to empower local communities and the traditional leaders to protect and manage forests. Legal framework supporting sustainable forest management exist in Zambia which is the Forests Act, 2015, the National Forestry Policy, 2014 and SI 11 of 2018 for Community Forestry Management. KLF was designated in 1957 as s Local Forest for its scenic characteristics. Local Forests are therefore designated as such to meet local needs similarly, the solutions for resolving the issues related to the local forests should be proposed by the local communities.

Session for Questions:

Below are some of the questions that were brought out:

- What do you do with people who have settled in the protected areas? - - Answer: Options were given on either evicting them or coming out with local rules that will deter further extensions on where they have settled.

Session three: Forest Inventory (Forest condition assessment)

This session gave out results from the inventory exercise that was conducted in 2021.Forests must be sustainably managed through sustainable harvesting that avoids depletion.

Objective of the conducting the inventory was to inform the formulation of the FMP for KLF

Determine actual stocking, distribution of tree species co2 stocks and regeneration potential.

Findings

Majority of trees in the forest were between 5-9cm diameter class. 37 tree species were found in KLF and that KLF not growing at its full capacity.

- Over harvesting of tree species
- Human disturbances through over cutting, fires and grazing
- If No intervention forest degradation and depletion will be intensified.

Questions/concerns

It was true that there are human disturbance in DLF as some people have settled there, farming there, and tree cutting. Since DLF is the property of the government how can it then be managed?

- Community said they can manage to protect and manage the DLF

It would be good to hear how and which areas are degraded DLF

Session four: Livelihood Survey Overview presentation (ZAMSTATS)
Below are the statistics:

- 25 Villages with a population 2238.
- 20 HHs formed part of the sample
- Economic activities 70% of HH engaged in agriculture, 28.8% business and 1.3 employed
- Land ownership: 20 didn't own any while 80 owned land.
- Willingness to plant trees: 81% expressed willingness while 19% declined

Questions/Concerns
Trainings in the construction of energy serving cook stoves to be intensified to ensure sustainability of forestry resources.
There is need to sensitize the communities before conducting surveys so that people give correct information when asked.

Session five: What should be in the proposed FMP
Development objectives of FMP as stipulated in the National Forestry Policy were shared as being:
(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 utilization 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.
.
The expected management actions were also discussed as:

- Forest Protection, Restoration, Management and Conservation of Biodiversity. This is triggered by:
  - The forest is surrounded by an increasing population
  - The level of unsustainable use is anticipated to intensify 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. **Hence** 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 local needs.
- Forest Restoration through Community Participation and Livelihood Development. Community empowerment is central to sustainable management of forest resources
  - This will be achieved through promotion of community forestry and the establishment of a community forest management group to partner over the management of the forest

- The Plan proposes interventions with community groups to protect, restore and replant, as part of the restoration planning for Kacholola Local Forest.

Question
How long does it take to form a CFMG so that communities are empowered to manage their forests? **Answer**: Not very long only that the community has to be taken through seven (7) steps as per the guidelines of community forests.
Later, the session on identifying uses, users, issues, threats and solutions and opportunities was done as group work. Below are the findings:

GROUP WORK- Kacholola Local Forest

Concerns from the stakeholders surrounding the forest.

- Needs general meeting with the community.
- There about 25 villages inside the forest.
- The stakeholders needs to do know how best we can manage the forest.

What- Uses of the forest

- Firewood
- Charcoal
- Caterpillar
- Timber
- Mushroom
- Medicine (Herbs)
- Wildlife
- Bamboos
- Grass
- Water
- Fibre
- Poles

Where- it is used/harvested

ISSUES	Solutions/opportunities
Indiscriminate cutting of trees	-formation of local rules
Late fires	-Afforestation
Illegal extraction of timber.	-Forest education
Mineral extraction illegally	-Involvement of traditional leaders

Table 19 Stakeholder issues found and possible solutions

Permitted practices were also discussed:
- Mushroom collection.
-Herbal medicine collection without uprooting the tree
- Collection of fruits
- Rotational animal grazing

Prohibited practices were also discussed
-Charcoal and timber production
- No farm land extensions
- No grazing of animals any how

3.0 Zoning of forest

Map was used to identify specific areas were intervention need to take place. The members stuck the innervations on the degraded areas and those that are intact

Figure 22 zones in the forest

List Suggestions/strategies to improve productivity/management of the forest.

- Sensitizations and Formation of committee
- Afforestation (Promotion of agroforestry trees and tree planting)
- Promoting Assisted Natural regeneration.

What should be the priority?

- Afforestation and formation of management committees

Who should be involved?

- Local communities
- Traditional leaders: Chief and headmen
- Forestry Department
- Agriculture
- - Church
- Local Authority
- All NGOs and CSOs

How do we work together?

Through Cooperation and coordination in the community
Lastly a **Declaration** was done were all stakeholders pledged to work together in managing Kacholola Local Forest.

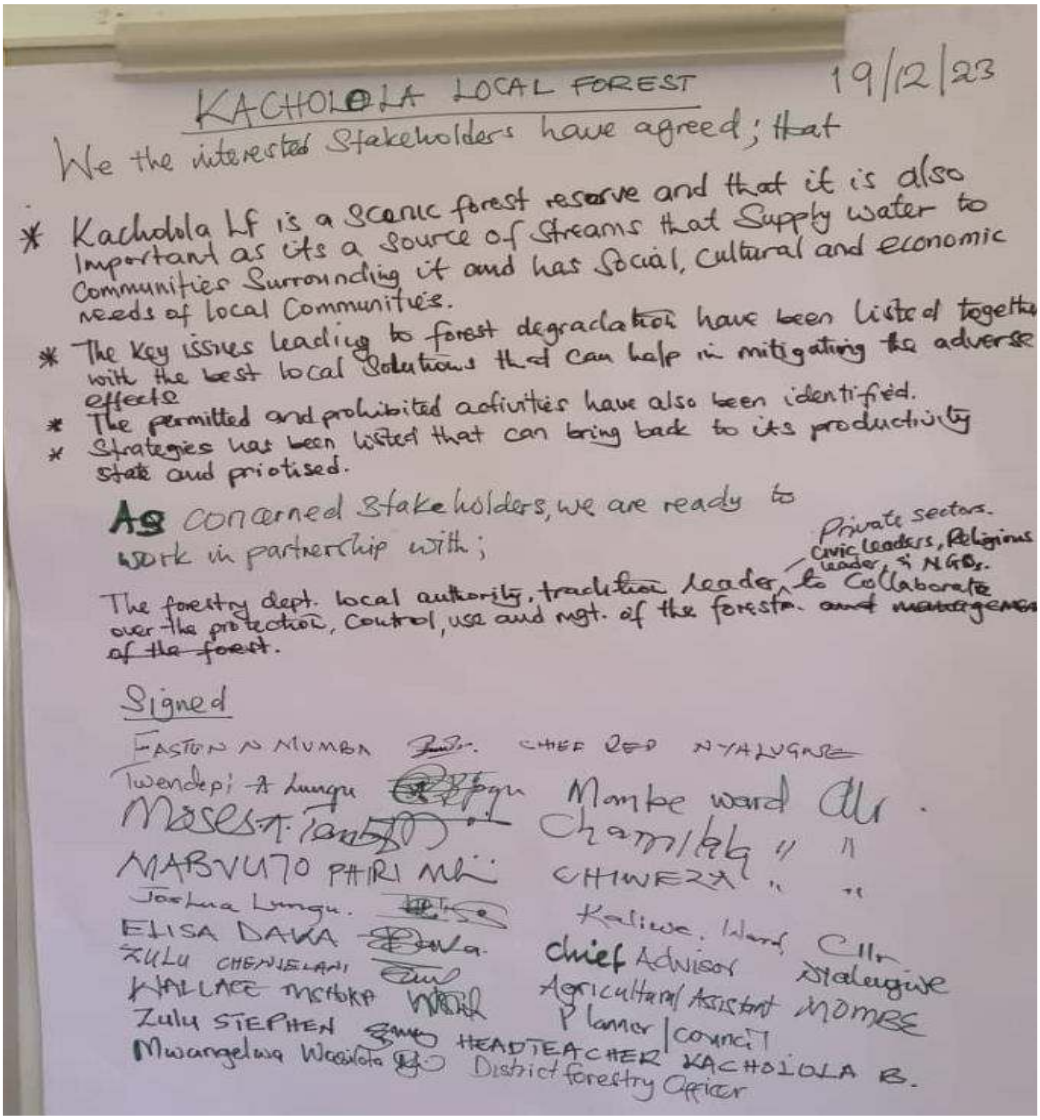


Figure 23 Declaration signed

Next Steps

i. Development of FMP
ii. Submission of draft FMP to Forestry Department HQ
iii. After review by HQ will be sent for wider public comment before approval by the Minister

Annex VI: References

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

- Fanshawe D.B (1971), The Vegetation of Zambia, Forest Research Bulletin No. 7 Ministry of Rural Development, Republic of Zambia, Government Printer, Lusaka, Zambia
- Government of Zambia, (2018) The National Guidelines for Community Forestry in Zambia, Forestry Department, Lusaka, Zambia. https://ziflp.org.zm/cfm/
- Hollingworth, L.T D. Johnson, G. Sikaundi, S. Siame, (2015) Fire Management Assessment of Eastern Province, Zambia. Washington. DC: USDA Forest Service.
- ILUA II (2006) Integrated Land Use Assessment Phase 1- Field Manual. The Food and Agriculture Organization of the United Nations and the Forestry Department, Ministry of Lands and Natural resources, Lusaka, Zambia
- ILUA II (2008) Integrated Land Use Assessment Phase 1- Report for Zambia. The Food and Agriculture Organization of the United Nations and the Forestry Department, Ministry of Lands and Natural resources, Lusaka, Zambia

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

Annex VII: Cost of Implementing management actions

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

Action 1: Forest Protection, Management & Conservation of Biodiversity			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	Total cost
1	To develop a shared management approach to forest protection, management and utilisation.	1. Stakeholder engagement, community awareness raising and mobilisation;	Community meetings	3	3	3,000	27,000					-	-	-	-	-	27,000
		2 Stakeholder mapping including forest use, users and geographic interest.	Community meetings	4	1	3,000	12,000									-	12,000
		3. Forming community level institutions to coordinate, manage and control local resource use in partnership with the Forestry Department.	Community meetings	4	3	5,000	60,000										60,000
		4. Developing forest product and issues based operational management plans for areas of interest.	Community meetings	4	2	3,000	24,000		-	-	26,400		-	-	-	-	50,400
		5. Agreeing roles, rights, responsibilities and obligations for shared management.	Community meetings	4	1	4,500	18,000		-	-	-	-	-	-	-	-	18,000
		6 Conduct training in control functions: Permits, rules, financial management, law enforcement	Community meetings	4	1	5,000	20,000		-	-	22,000		-	-	-	-	42,000
		7. Conducting joint monitoring and evaluation of management and benefit sharing measures to ensure a sustainable partnership.	Community meetings	4	1	3,000	12,000	13,200	14,520	15,972	17,569	19,326	21,259	23,385	25,723	28,295	191,249
2	To protect the Forest from late fires	Practice early burning within and outside the forest by involving local communities.	15200	1	1	25000	25,000	27,500	30,250	33,275	36,603	40,263	44,289	48,718	53,590	58,949	398,436
3	To secure the boundary and define the extent of the boundary and prevent possible encroachment	1 Carry out annual Boundary maintenance.	65.2Km	1	1	75,000	75,000		82,500		90,750		99,825		109,808		457,883
		2 Beacon maintenance	No.	20	1	650	13,000	14,300	15,730	17,303	19,033	20,937	23,030	25,333	27,867	30,653	207,187
		3 Erection of sign posts	No.	10	1	500	5,000		-	-	-	5,000		-	-	-	10,000
4	To conserve and enhance the biodiversity of the forest reserve through environmental awareness and education.	Enhance understanding of the forest ecosystem and its function and benefits to community groups and schools.	School visits	3	1	3,000	9,000		9,900		10,890		11,979		13,177		54,946
5	To significantly reduce levels of illegal forest product harvesting & other damage.	Engage honorary forest Officers/guards	coord meetings	1	4	1,500	6,000	6,600	7,260	7,986	8,785	9,663	10,629	11,692	12,862	14,148	95,625
		Conduct patrols	No	2	12	800	19,200	21,120	23,232	25,555	28,111	30,922	34,014	37,415	41,157	45,273	305,999
															Action 1 Sub total		ZMW 1,930,723

Action 2: Forest Restoration through Community Participation & Livelihood Development																	
	1. Enter into partnership with clear roles and responsibilities with surrounding communities	Promote community forestry approach / restoration planning	Community meetings	3	3	4,000	36,000		39,600		-	-	43,560		-	-	119,160
	2. To protect, restore and replant forest cover in the fragmented forest areas of the National Forest	Support forest restoration activities	Community meetings	3	3	3,000	27,000	29,700	32,670	35,937	39,531	43,484	47,832	52,615	57,877	63,665	430,310
	3. To reduce carbon emissions from agric soils and dependency on inorganic fertilizer	Promote CSA through Agroforestry	CSA ha	20	1	650	13,000	14,300	15,730	17,303	19,033	20,937	23,030	25,333	27,867	30,653	207,187
	4. To significantly reduce levels of tree cutting for wood energy.	Promotion of energy efficient Cook stoves	Training	1	2	5,000	10,000	11,000	12,100	13,310	14,641	16,105	17,716	19,487	21,436	23,579	159,374
		Roll out programme	stoves	200	2	100	40,000	44,000	48,400	53,240	58,564	64,420	70,862	77,949	85,744	94,318	637,497
	5 Reduce forest dependency by local communities.	Sources for forest products/ woodlots/ plantations	woodlot establishment	5	1	5,000	25,000	27,500	30,250	33,275	36,603	40,263	44,289	48,718	53,590	58,949	398,436
	6. To contribute towards meeting social, cultural and economic needs and improving the livelihoods of forest-adjacent communities.	Forest enterprises promoted & supported	Enterprise groups formed & trained	3	1	3,000	9,000	9,900	10,890	11,979	13,177	14,495	15,944	17,538	19,292	21,222	143,437
			Equipment	3	1	30,000	90,000		99,000				108,900		-	-	297,900
	7. To reduce carbon emissions from deforestation and forest degradation by ensuring community benefit from carbon credits.	Access to an incentive benefit sharing mechanism through the carbon trading scheme to be established by Government in Eastern province	Community meetings	3	1	2,500	7,500		8,250		9,075		9,983		10,981		45,788
	8. To ensure cross cutting issues are mainstreamed in all aspects of forest management for social equity wellbeing and empowerment through sustainable development	1 Ensure that all environmental and social impacts, risks and liabilities are identified and mitigated.	Community meetings	3	1	3,000	9,000		9,900		10,890		11,979		13,177		54,946
		2 Identify training needs.	Community meetings	3	1	3,000	9,000		9,900		10,890		11,979		13,177		54,946
		3 Monitoring safeguards & Grievances	Community meetings	1	1	3,000	3,000	3,300	3,630	3,993	4,392	4,832	5,315	5,846	6,431	7,074	47,812
	9. To maintain the infrastructure necessary to achieve the multiple objectives of forest management.	Maintain the existing infrastructure	Site specific				-	-	-	-	-	-	-	-	-	-	-
															Action 2 Sub total		**ZMW 2,596,793**
	10. Support the development of viable forest based enterprises	1. Beekeeping	Equipment	200	1	900	180,000										180,000
		2. Wood biomass energy production	Training	1	2	3,000	6,000	6,600	7,260	7,986	8,785	9,663	10,629	11,692	12,862	14,148	95,625
		3. Wild fruit harvesting	Training	1	2	3,000	6,000	6,600	7,260	7,986	8,785	9,663	10,629	11,692	12,862	14,148	95,625
		4. Plantation establishment	Training	1	4	3,000	12,000	13,200	14,520	15,972	17,569	19,326	21,259	23,385	25,723	28,295	191,249
			Supply seedlings														-
			Monitoring	1	4	3,000	12,000	13,200	14,520	15,972	17,569	19,326	21,259	23,385	25,723	28,295	191,249
															Enterprise Sub total		**562,498**
													Grand total costs for the period of the Plan (ZMW)				**ZMW 5,090,014**
			Unit of Measure	**Quantity**	**Frequency**	**Unit revenue**	**Total Revenue Year 1**	**Total Revenue Year 2**	**Total Revenue Year 3**	**Total Revenue Year 4**	**Total Revenue Year 5**	**Total Revenue Year 6**	**Total Revenue Year 7**	**Total Revenue Year 8**	**Total Revenue Year 9**	**Total Revenue Year 10**	**Total Revenue**
	Revenue			Ha													
	1 Carbon trading benefit share EP-JSLP- Forest land	Carbon t/ha/yr inc 10% per yr	Hectare	14245.6	0.7	75	747,894	822,683	904,952	995,447	1,094,992	1,204,491	1,324,940	1,457,434	1,603,177	1,763,495	11,919,504
	2 Small woodlots	Carbon t/ha	Hectare	5	1	75	375	412.5	495.0	643.5	900.9	1,351.4	2,027.0	3,243.2	5,513.5	9,924.3	24,886
	3 Agroforestry	Assume 1tC/ha inc to 2 t/ha yr 10	Hectare	20	1	75	1,500	1,650.0	1,815.0	1,996.5	2,196.2	2,415.8	2,657.3	2,923.1	3,215.4	3,536.9	23,906
	4 Natural regeneration	Assume 1tC/ha inc to 2 t/ha yr 10	Hectare	50	1	75	3,750	4,125.0	4,537.5	4,991.3	5,490.4	6,039.4	6,643.4	7,307.7	8,038.5	8,842.3	59,765
															Revenue sub total		**ZMW 12,028,062**
															Net surplus		**ZMW 6,938,048**

Table 20 Budget table

REPUBLIC OF ZAMBIA

Ministry of Green Economy & Environment

The Zambia Integrated Forest Landscape Project (ZIFLP) 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 ZIFLP and EP-JSLP are a cooperation between the Government of Zambia, the World Bank & partners.

Forestry Department

Supported by:

Zambia Integrated Forest Landscape Project

Improving lives through sustainable management of natural resources

WORLD BANK GROUP

BioCarbon Fund

Initiative for Sustainable Forest Landscapes

gef

GLOBAL ENVIRONMENT FACILITY

INVESTING IN OUR PLANET