



REPUBLIC OF ZAMBIA

**MINISTRY OF GREEN ECONOMY AND
ENVIRONMENT**



**CHISWA EAST AND WEST LOCAL FORESTS
(P131 & 147)
MANAGEMENT PLAN
2024-2034**

APPROVAL PAGE

CHISWA EAST AND WEST LOCAL FORESTS - FOREST MANAGEMENT PLAN

Notice of completion

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

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

Director of Forestry

Date:_____

Registration of the Forest Management Plan

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

Minister for Green Economy and Environment

Date:_____



FORESTRY DEPARTMENT

FOREWORD

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

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

Forests, 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 to mitigation of climate change, income generation, poverty reduction, job creation and protection and maintenance of biodiversity. The Policy encourages participatory forest management anchored on the active participation of local communities, traditional institutions, private sector and other stakeholders in the management and utilisation of forest resources at all levels of decision making, implementation, monitoring and evaluation.

This ten (10) years Forest Management Plan has been produced according to the provision and requirements of the Forest Act of 2015. In order to make the planning process effective and relevant to day to day management of Chiswa East and West Local Forest a participatory approach has been developed for this Forest Management Plan which brought together representatives from key stakeholders

This plan is intended to provide guidance in the management of Chiswa East and West Local Forest in cognizance of other existing policies such as environment, agriculture, wildlife, water, land and land use. The Chiswa East and West Local Forest has a total land area of 212 and 401 hectares respectively, it is located in Katete district along the Great East Road and it is dominantly rural forest surrounded by villages. The plan also recognizes the inter-connectivity among ecological, social-ecological, socio-livelihood, cultural, institutional and tradition structures arrangements.

Protected area purpose

Chiswa East and West local forest was established and to provide for the conservation, protection and management forest resources and to ensure the sustainable utilization of the forest resources while improving the economic livelihood of the local communities, enhance community participation in forest management.

Proposed future management

The proposed future management programs which ought to be undertaken in order to ensure effective management of Chiswa East and West Local Forest are as follows:

Action 1: Forest Conservation through Community Participation & Livelihood Development

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

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

Chiswa East and West Local Forest is an important forest ecosystem containing a number of different plant species. The forest is surrounded by an increasing population which is highly dependent on it for subsistence and increasingly economic needs like collection of mushroom, wild fruits, caterpillars, honey, firewood and poles. The level of unsustainable use is anticipated to intensify with increasing human populations resulting in higher levels of resource exploitation and degradation. Protection of this forest habitat is therefore essential to ensure the continued ecosystem services and local livelihood needs. However, the awareness of the importance of ecosystem services, conservation of biodiversity and climate change mitigation services of Chiswa East and West Local Forest is low among the adjacent communities

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 Msipazi

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

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

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

Forest resource & community well-being assessment

During 2019 and 2021, the Forestry Department undertook forest resource assessments, engaging surrounding local communities and their traditional leaders as part of the enquiries for preparing this forest management plan in accordance with the Forests Act, 2015. Forest inventory results revealed that stocking density of trees $\geq 5\text{cm}$ is estimated at **436** stems/ha. Sapling below 5cm DBH recorded a mean of 6,416. Mean basal area of **6.39m²** is estimated for all trees $\geq 5\text{cm}$ diameter at breast height the standing volume of **56.71m³/ha** was estimated for Chiswa east and west Local Forest for trees $\geq 5\text{cm}$ diameter at breast height (DBH). The Bole volume was estimated at **15.94m³/ha**, the forest reserve has a total Biomass for trees $\geq 5\text{cm}$ DBH is 87.12 tons/ha with total carbon of **43.56** tons/ha. 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 Chiswa Local Forest.

This confirms the status of Chiswa Local Forest as a secondary forest following past and most likely current high levels of exploitation of large sized trees. Further, there is great need to bring the plantation areas under sound management and prepare site specific management plans for the plantation compartment and sub compartments. Current levels of planting are not considered viable for commercial timber or sustained pole production in the short and medium term.

Forest change & issues analysis

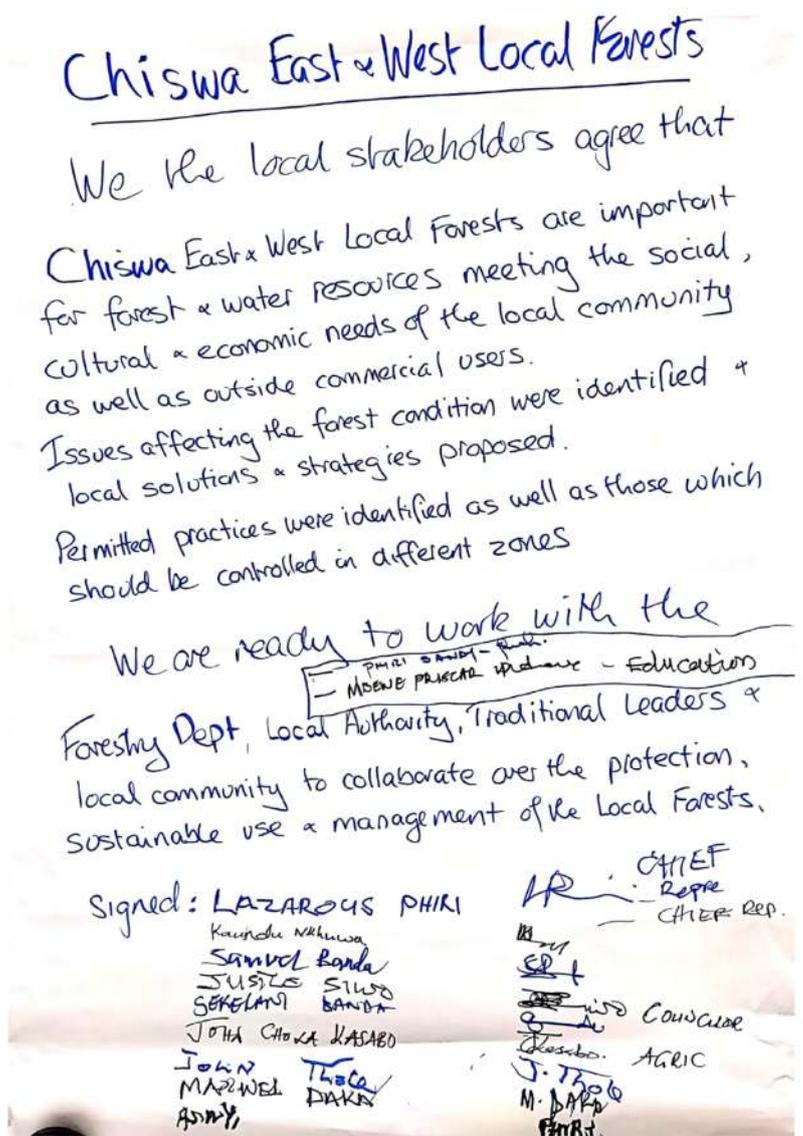
Utilising forest cover imagery, participants were able to relate to the areas of forest and forest loss through agriculture and settlement across the forest and surrounding areas. This was used to focus discussion on issues, identifying different zones of use and management, possible strategies and priorities for management as well as agreeing permitted and non-permitted activities within each of the identified zones.

Making a commitment to work together for change

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

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

At the consultation meeting of stakeholders for Chiswa Local Forest held signed a joint declaration.



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

Biodiversity- is the variability among living organisms. It include diversity within and among species and diversity within and among ecosystem

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

Carbon stock- refers to the system that has the capacity to store or release carbon

Community Forest - refers to forest management that has ecological sustainability and local community benefit as center goal from carbonization, distillation, pyrolysis and torrefaction of wood trunk

Charcoal- Refer to solid residue delivered from the carbonization, distillation, pyrolysis and torrefaction of wood using continuous or batch system

Environment: Is basically the circumstance of conditions that surround us. It comprises physical ecological, social and economic environment

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 all plants, trees, flowers and other living organisms that are classified as part of the plant kingdom

Growing stock- refers to volume of all living trees in a given area of forest or wooded land that have more than certain diameters

Household: comprises a person or a group of persons generally bound by tie of kinship who live together under a single roof or within a single compound and who share a community of life in that they are answerable to the same head and share same common source of food.

Local forest- refers to an area declared as local forest under the forest acts

Management Plan- It's a documents prepared under the guidance of the Forestry Department to guide the management of the forest resources in the local or national forest

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

| | |
|----------|--|
| CCAs | Community conservation areas |
| CFMG | Community Forest Management Groups |
| COMACO | Community Markets for Conservation |
| CSA | Climate smart agriculture |
| DBH | Diameter at Breast Height |
| EA | Enumeration Area |
| FD | Forestry Department |
| FMA | Forest Management Area |
| FMP | Forest Management Plan |
| FPIC | Free Prior Informed Consent |
| GHG | Green house gases |
| HFO | Honorary Forest Officers |
| CEWFMP | Chiswa East & West Local Forest Management Plan |
| MGEE | Ministry of Green Economy and Environment |
| MOE | Ministry of Energy |
| NGO | Non-Governmental Organization |
| PAPI | Paper Assisted Personal Interviews |
| REDD | Reducing emissions from deforestation and forest degradation |
| USAID | United States Agency for International Development |
| ZAMSTATS | Zambia Statistics Agency |
| ZIFLP | Zambia Integrated Forest Landscape Project |

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Summary Cost of Forest Management Plan Implementation Cost (ZMW)

| Sr | Activity | Amount (ZMW) |
|-----------|---|---------------------|
| 1 | Forest Protection | 2,836,863 |
| 2 | Biodiversity conservation and environmental Education | 1,067,807 |
| 3 | Community Conservation and Livelihood development | 988,121 |
| 4 | Human Resource development | 1,211,245 |
| 5 | Infrastructure development | 478,123 |
| 6 | Research, Monitoring and Evaluation | 3,203,422 |
| 7 | Total | 9,785,581 |

Cost breakdown is provided in Annex VI

CHISWA EAST & WEST LOCAL FOREST MANAGEMENT PLAN

1 INTRODUCTION

The Chiswa East and West Local Forest Management Plan (CEWLFMP) is prepared in response to the new Forest 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

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

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

1.2 Duration of forest management plan

The duration of the Forest Management Plan is ten (10) years. In theory, this means that ten years from the date that the plan is approved and adopted. However, in practice because of the novelty of forest management in the province, and the need to be flexible and adjustment from lessons learned along the way, the plan may be adjusted every year during the first few years of implementation. In other words, the plan should be dynamic, and lessons learned is incorporated as they become obvious.

1.3 Developmental Objectives

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

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

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

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

1.4 General Objectives

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

- (a) To secure forest resources of local and national importance
- (b) To protect and restore ecosystems, particularly the protection of land and water supplies of local and strategic importance;
- (c) To ensure the sustainable utilisation of forest resources and other natural resources within the protected area;
- (d) To ensure full participation of all stakeholders at all levels of society for sustainable forest resource and ecosystem management through appropriate incentives and benefit sharing mechanisms
- (e) To meet the social, cultural and economic needs of the local community and wider society involved in management of the Forest in a gender equitable manner.

2 GENERAL DESCRIPTION

Chiswa East and West Local Forest No. P. 131 and 147, approximately 212 and 401 hectares in extent respectively forms part of the forest estate in Eastern Province. The two reserves adjacent to each other are protected areas under Government Notice No. 264 of 1964 and deposited in the office of the Surveyor-General on Map No. 194 and 210 respectively. The formulation and implementation of the Chiswa local forest Management Plan is provided within the ambit of the Forests Acts No 4 of 2015.

2.1 Location details

The Chiswa East and West Local Forest located approximately 35km east of Katete Central Business District along the Great East Road and wholly falls in Katete district. The forest reserve is surrounded by a number of villages. Below shows general location of Chiswa East and West Local Forests.

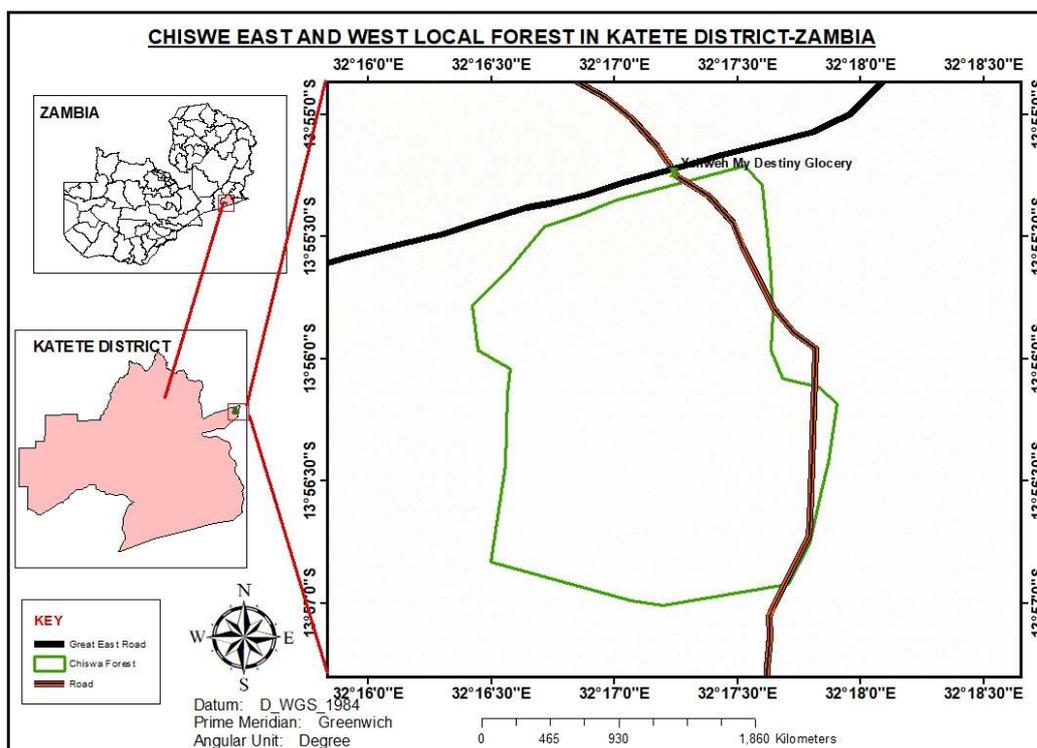


Figure 1 Location of Chiswa local forest

2.2 Physical And Biological Environment

Soils

There is no known soil survey studies previously carried out on Chiswa forest reserve. Similarities, soil types and general distribution can be observed. Soil types in Chiswa turn to be influenced by general drainage system pattern from upland to lower land. The main soil type exists on the western Chiswa forest reserve mainly the red sand clay. The exploratory soil map of Zambia compile by the soil survey section research branch of the Ministry of Agriculture 1971 classified the area covering Katete district and Chiswa East and West Local forest shows well drained, moderately deep, red to strong brown, friable, gravelly, moderately weathered fine loamy to clayey soils (chromi-haplic ALISILS, partly skeletal phase). The map below shows the types of soils in Chiswa local forest.

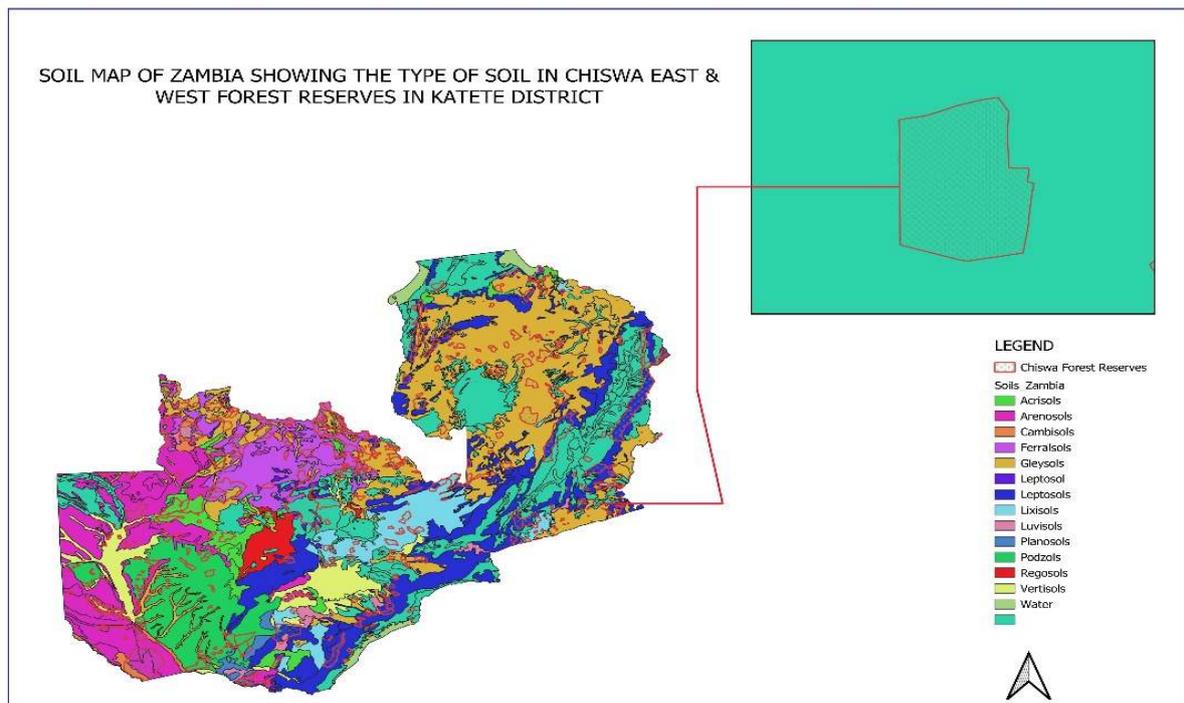


Figure 2 General soil types in Chiswa local forest

Chiswa Local Forest has a number of soil physical and hydrological limitations owing to the nature of the soils, climatic factors and land use. The main limitations are sandy soil textures that easily fall to erosion especially along the river

Soil Erosion: Soil erosion was observed in some parts of the forest reserve especially on light textured soils. This comprised of areas devoid of vegetation and those on

high slope land, measures such as growing of agroforestry in bare lands can help mitigate effects of erosion.

Sedimentation and Siltation: The physical and climatic factors of the area result in siltation of most rivers and streams which are on the edge of the forest reserve. The physical nature and distribution of the soil is predominantly light textured topsoils or sandy soils on high slopes, thereby promoting the rapid movement and deposition of soil and silty materials in the surrounding areas. This results in a number of streams to dry up immediately after the rainy season.

Topography and Geology

The Chiswa East and West Local Forest is relatively flat environment with sporadic rock outcrop and mountains and geologically the area seems to be located on Precambrian metamorphic rocks characterized by gneiss with igneous intrusion of syenite.

The area is important for communities to shift to diversified resilient agriculture cultivating drought resistant crops. The immediate challenges facing the local communities is the specific knowledge to support resilient practice in integrated landuse.

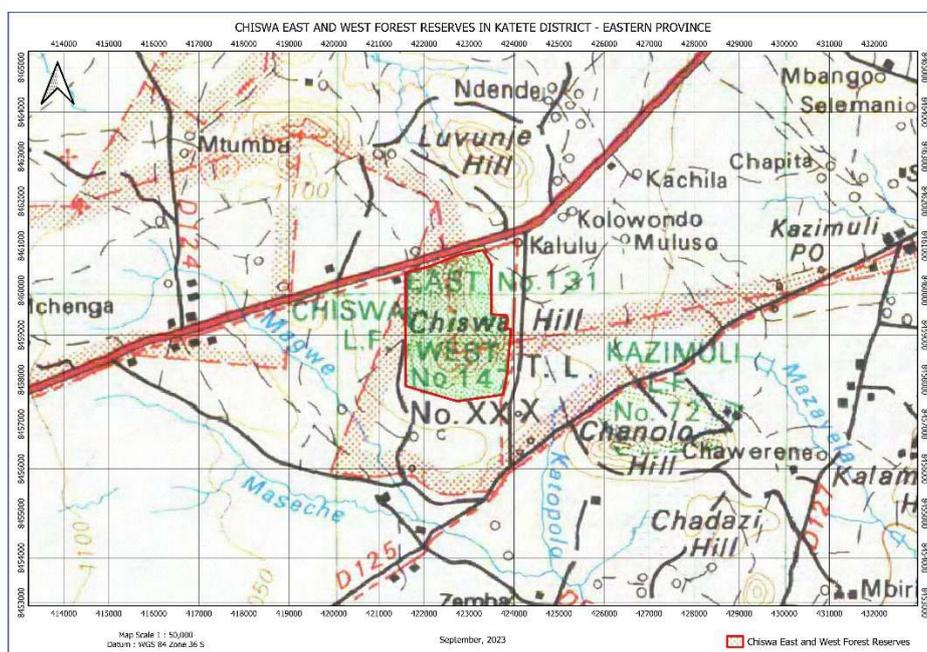


Figure 3 Topography of Chiswa Local Forests

Rainfall: Chiswa west and east local forest is mostly within the Agro Ecological Region II Zone 2-cv. typically receives about 82.21 mm of precipitation and has 127.67 rain days (34.98% of the time) annually. The rainfall usually last for 5 to 6 months starting from late November to March and the peak months are December and February. The rainfall amount ranges from 900 to 1000mm.

Temperature: Chiswa local forest is located in the elevation of 900-1100 meters above sea level. It has a tropical wet and dry or savanna climate. The forest reserve yearly temperature usually is in the range from 22.22 degrees Celsius to 27 degrees Celsius during dry months between August and December. The hottest month is October.

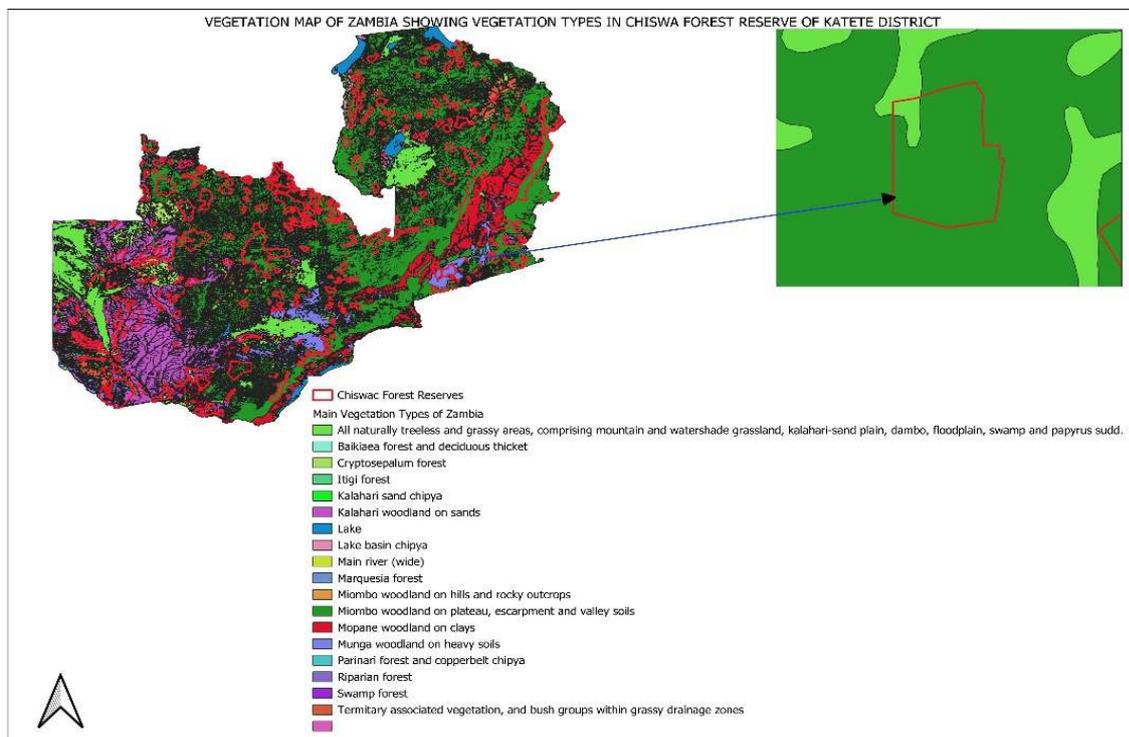


Figure 5 General vegetation types of Chiswa forest reserve

Flora

Chiswa local forest has two major landform, the hills and the plateau on which various plant communities grow, the forest reserve has two notable vegetation communities which include the miombo and munga woodland. The miombo cover the entire hilly area of the forest reserve and on the plateau, the munga woodland is found on localized areas and on the marginal flat lands. Miombo is a vernacular word that has been adopted by ecologists to describe miombo woodland ecosystems it is

the most extensive vegetation type in Chiswa covering an estimated 80% of the total land area. Miombo Woodland is distinguished from other woodland and forest formations in the forest reserve by the dominance of tree species in the family Fabaceae, subfamily Caesalpinioideae particularly in the genera ***Brachystegia*** and ***Julbernardia*** (Frost 1996). other species commonly found in this group are *Pterocarpus angolensis* (Mukwa), *Albizia* sp. and *Afzelia quanzenis*. Among other distinctive features of miombo woodlands are the number of tree species with meso- and microphyllous compound leaves. The miombo woodlands constitute the largest more-or-less contiguous block of deciduous woodlands and dry forests covering the escarpment and the plateau in Chiswa local forest. On the escarpment the canopy height is less than 15 m and on the plateau and flat lands the canopy height is usually greater than 15 m in the deeper and moister soils. The vegetation is floristically rich (Frost 1996).

Munga is a coined term for Savanna woodland, it is an open park – like, 1-2 storied deciduous wood land with scattered or grouped emmergents to 18m height characterised particularly *Acacia*, *Acacia polycatha*, *Acacia giraffe* *Combretum* and *Terminallia* species. Occasionally it has a deciduous or semi deciduous thicket understory Fanshawe D.B (1971). The penultimate stage in the degradation of munga woodland is what is referred as dambo margin vegetation which is also found in Chiswa Local Forest.

Major threat to Vegetation in Chiswa local forest

Fire is the major threats to the Miombo ecoregion of Chiswa local forest. According to Fanshawe (1971), most vegetation in Zambia is tinder dry and highly vulnerable to fire especially in the dry season which runs from April/May to October/November of every year.

Human: Communities around Chiswa forest reserve collect NWTP such as poles, fibers, medicine and edible fruits, some members of the communities are involved in illegal harvesting of forest produce for commercial and domestic purposes. During the dry season some people burn the forest to stimulate growth of grass for domestic animals

Uncontrolled domestic cutting: Mainly for domestic use purposes. The cutting is motivated by the need for domestic construction materials by the local community living around the forest reserve.

FAUNA

Mammals: The Chiswa East and West Local Forest has number small fauna such as rabbits, snakes, mouse, Common duikers, Honey badgers, hyners.

Birds: Various bird species were sighted in the forest reserve. During the inventory a total of about 15 different birds species were seen (1) Sparrows, (2) cattle egrets, (3) Crows (3) Guinea fowls and black headed heron.

Insects: Seventeen (17) different insects were seen in the forest reserve. The common insects seen in the forest reserves include butterflies, Grasshoppers, Play martis, Crickets, Cicadas, Bees, Ants,

Reptiles: Information on the type of reptiles in the forest reserve is poorly documented. However the inventory team come across three reptiles which include:-

- Lizards
- Snake (Black mambas) and
- Salamander
- Tortoises

Amphibians: Information collected from the communities revealed about 4 amphibians found in the forest reserve, the common ones are flogs.

2.3 Infrastructure And Communication

In order to achieve forest management objectives for Chiswa East and west forest reserve a certain level of infrastructure is required such as access roads within the forest reserve and vehicles are all essential to sound management of the forest. Since Chiswa local forest yield very little in terms of revenue. Communication equipment is required for improved effectiveness of forest management operations particularly, patrolling to control illegal timber harvesting. This requires radios, transport and telephones.

3 PAST MANAGEMENT

No Forest Management Plan was developed for management of the Chiswa East and West Local Forest. However, the management of the reserve has been guided by the objectives of reservation proposal as stated in the proposal at the time the forest was gazetted as a protected forest area under Government Notice No.264 of 1964. The reservation aimed at protecting stream catchment area, conservation biodiversity of indigenous tree species and securing the supply of forest and non-forest products for present and future generation in particular communities around the forest reserve. The past management indicative level of success was largely in maintaining steam catchment area, control of erosion, accumulation of biomass, moderate illegal harvesting of tree resources and collection of non-forest products such as caterpillars, mushroom, fruits and dead firewood.

4 GROWING STOCK

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

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

4.1 Tree species abundance

The inventory data indicates that there are over 56 different types of tree species that include tree seedlings in the forest. The table below provides a summary of the forest inventory and will be described in the sections below;

Stratum total by diameter class

| Stratum Values | 0-4 | 5-9 | 10-14 | 15-19 | 20-29 | 30-39 | 40+ | Total |
|--------------------------------|------|--------|-------|-------|-------|-------|-------|--------|
| Vol (m ³) | 0.00 | 4.70 | 5.49 | 5.65 | 13.87 | 7.29 | 19.70 | 56.71 |
| Bole Vol. (m ³) | 0.00 | 1.30 | 1.36 | 1.39 | 4.00 | 2.22 | 5.68 | 15.94 |
| Density (SPH) | 0.00 | 270.46 | 84.62 | 32.42 | 34.80 | 7.12 | 6.33 | 435.75 |
| Basal area (m ²) | 0.00 | 1.09 | 0.97 | 0.74 | 1.53 | 0.67 | 1.39 | 6.39 |
| Biomass (tons) | 0.00 | 7.59 | 8.66 | 8.77 | 21.32 | 11.32 | 29.47 | 87.12 |
| Carbon (tons) | 0.00 | 3.79 | 4.33 | 4.38 | 10.66 | 5.66 | 14.74 | 43.56 |
| Volume by Species Use | | | | | | | | |
| Stratum Values | 0-4 | 5-9 | 10-14 | 15-19 | 20-29 | 30-39 | 40+ | Total |
| Saw log Vol. (m ³) | 0.00 | 0.06 | 0.05 | 0.10 | 0.70 | 0.77 | 2.35 | 4.03 |

| | | | | | | | | |
|----------------------------------|------|------|------|------|------|------|-------|----------|
| Firewood Vol. (m ³) | 0.00 | 2.81 | 1.83 | 2.00 | 7.30 | 2.97 | 15.78 | 32.69 |
| Pole Vol. (m ³) | 0.00 | 0.23 | 0.33 | 0.21 | 1.96 | 0.00 | 0.00 | 2.72 |
| Fruit Vol. (m ³) | 0.00 | 0.21 | 0.43 | 0.56 | 1.35 | 0.00 | 0.00 | 2.55 |
| Medicinal Vol. (m ³) | 0.00 | 0.88 | 2.14 | 2.09 | 3.18 | 0.95 | 1.56 | 10.81 |
| Others Vol. (m ³) | 0.00 | 0.51 | 0.71 | 0.70 | 0.42 | 1.56 | 0.00 | 3.91 |
| Seedlings | | | | | | | | 6,416.00 |

Table 1 Stratum Total by diameter class

Ten Abundant Species in the Forest Reserve

| Species | Local Name |
|------------------------------------|------------|
| <i>Azelia quanzensis</i> | Mupapa |
| <i>Albizia adianthifolia</i> | Mutanga |
| <i>Brachystegia boehmii</i> | Muombo |
| <i>Brachystegia floribunda</i> | Musamba |
| <i>Brachystegia longifolia</i> | Muombo |
| <i>Brachystegia utilis</i> | Tsamba |
| <i>Dalbergia melanoxylon</i> | Mukelete |
| <i>Dalbergia nitidula</i> | Mchindula |
| <i>Diplorhynchus condylocarpon</i> | Mchindula |
| <i>Erythrophleum africanum</i> | Kayimbi |

Table 2 Top ten abundant species in the forest reserve

4.2 Tree and Sampling Distribution by Size Classes

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



manager of past management, current stocking and the future growth potential of the forest.

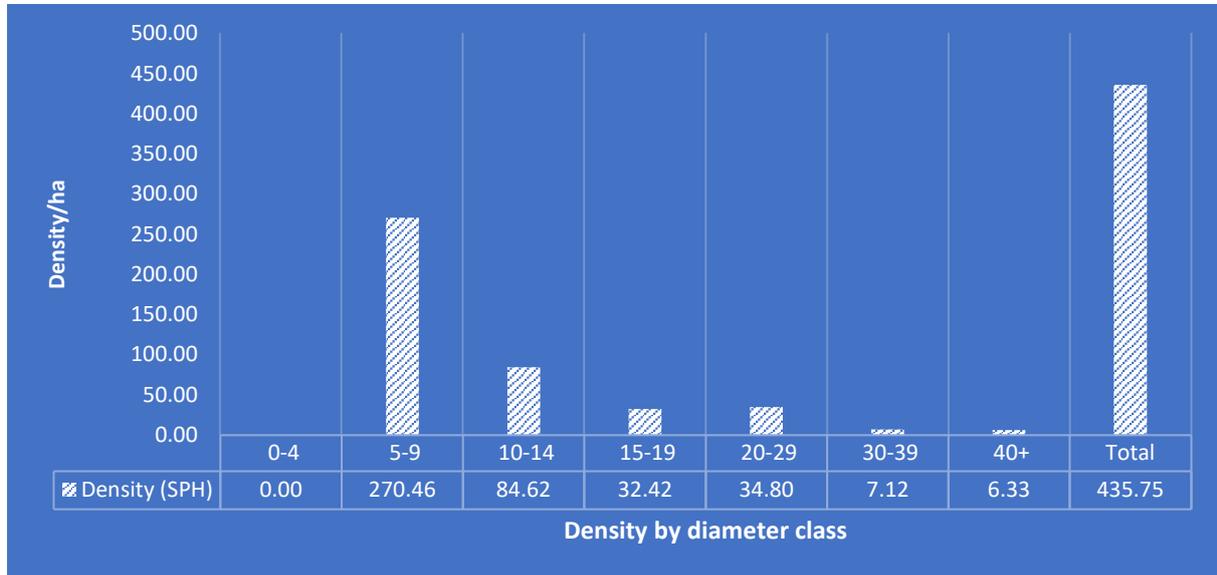


Figure 4 Density by diameter class/ha for all species

The density or number of stems by diameter class per hectare is 435.75 with higher in diameter class 05 – 14 and less from 30 and above. The outcome indicates that there is a lot of tree harvesting or cutting due agriculture activities resulting in high coppicing and regeneration.

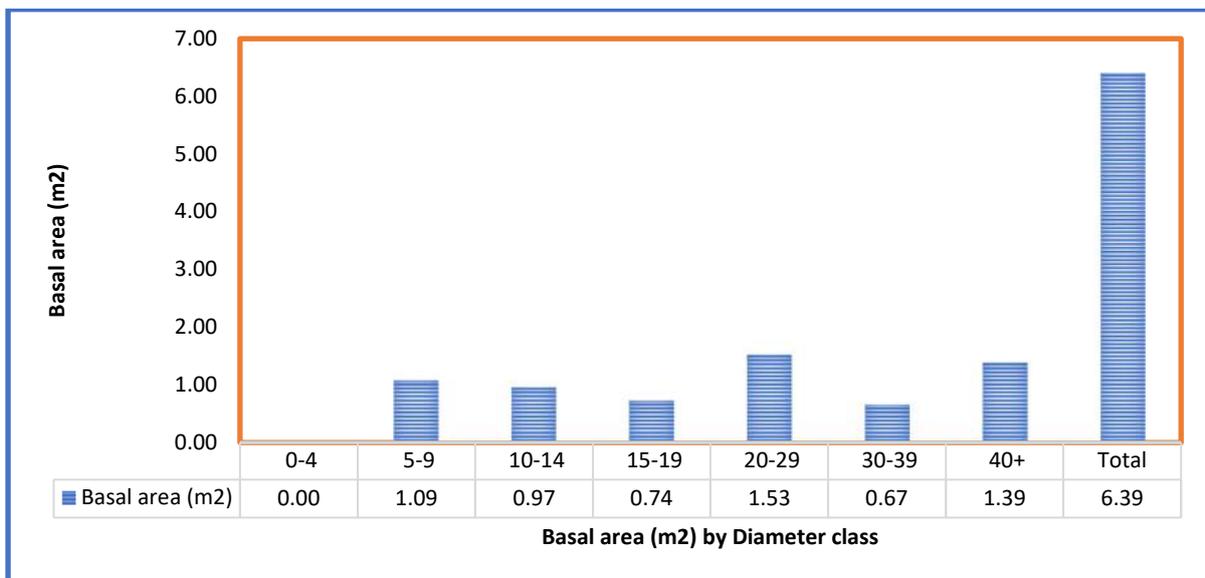


Figure 5: Basal area (m3) by diameter class/ha for all species

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

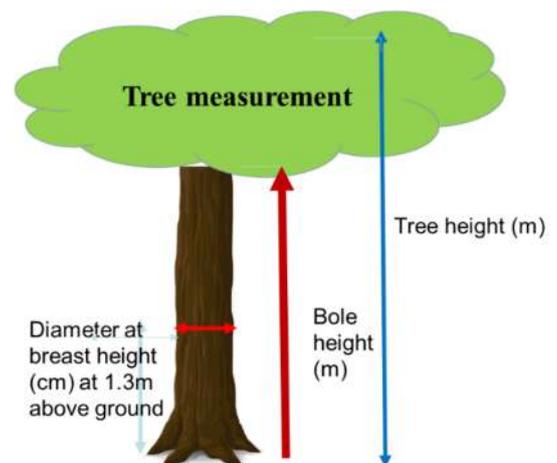
Forest condition is further assessed by the amount of area occupied by the stems of trees, termed basal area. This is measured by determining the cross-sectional area of a tree at breast height (1.3m), summing up all the measurements and expressing this as a figure of square metres, either in their size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

The basal area by diameter class per hectare for all species is 6.39m²/ha with higher in diameter class 40. The outcome indicates that there is a moderate of mature trees mostly in hilly portions.

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 volume by diameter class per hectare is 56.71 cubic meters with higher in diameter class 40 and above and evenly distributed in diameter below 40 and above. The outcome indicates that there is heavy illegal tree harvesting. The high volume is in hilly portions of reserve.



The total bole volume by diameter class per hectare is 15.94 cubic meters with higher in diameter class 40 and above. The outcome indicates that there is a moderate illegal of tree harvesting of remaining trees on hilly areas of the forest reserve.

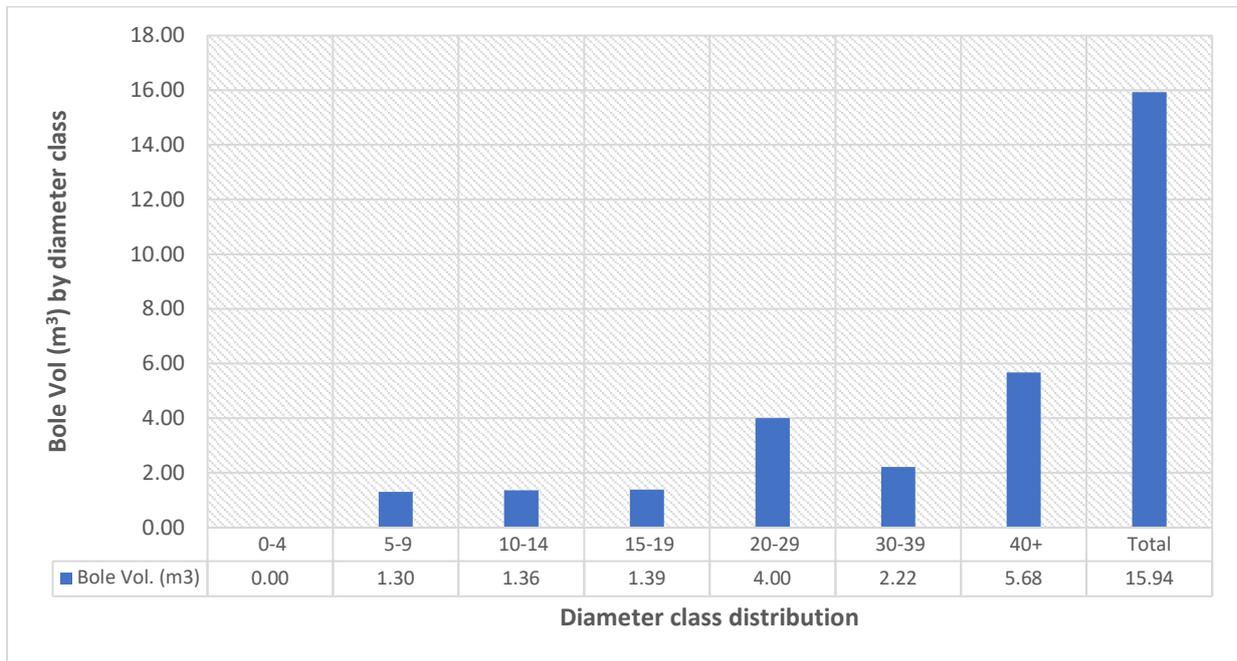


Figure 6: Bole volume (m3) by diameter class/ha for all species

Volume of all species by merchantable quality

Trees in Chiswa East and West Local Forest are relatively straight, about 78.7% of the trees assessed are straight and 0.3% are bent and 21.1% are crooked. Three quarters of the trees in Chiswa East and West are of harvestable quality.

| No | Description | Volume(m ³ /ha) | Explanation |
|----|-------------|----------------------------|--|
| 1 | Straight | 44.61 m ³ | The entire bole length of these trees is straight |
| 2 | Slight bend | 0.16 m ³ | The bole length of these trees is slight bend but are sawable |
| 3 | Crooked | 11.94 m ³ | These trees have bad form, they are crooked and cannot be sawn |

Table 4 Volume of all species by merchantable quality

Presence of Commercial Tree Species

Based on the inventory data, species used for high valued sawlogs such *Brachystegia bussei*, *Pterocarpus angolensis* and *Dalbergia nitidula* were identified. Medium valued are *Brachystegia boehmii* and *Julbenadia globiflora*, are not abundant in the forest.

The harvestable volume is low. Therefore, Chiswa East and West Local Forest in its current condition cannot sustain large scale logging operations or timber concession.

Volume of all species by use

| No | Description | Volume(m ³ /ha) | Explanation |
|----|-------------|----------------------------|--|
| 1 | Sawlogs | 4.03 | These are merchantable trees with the average diameter of 40cm dbh and above and are of exceptionally high valued suitable for timber production |
| 2 | Poles | 2.72 | These are tree species with relative straight bole length with the average diameter at breast height of 5cm to 29cm |
| 3 | Fruits | 2.55 | The tree species include all fruit bearing either edible or not edible |
| 4 | Medicinal | 10.81 | All medicinal plants |
| 5 | Firewood | 32.69 | These include all dead and or diseased trees which can be used for firewood |
| 6 | Others | 3.91 | These include all tree species which are not classified in any of the above categories |

Table 4 Volume by Use

Biomass and carbon stocks

The total biomass and carbon stocks (tons) by diameter class per hectare for all species respectively of 87.12 and 43.56 estimates methodological framework applied is that developed by the IPCC documented in the 2006 guidelines for national greenhouse inventories volume 4, chapter 2 and 4. The correlation of total biomass and carbon both above and below ground is in the figure below is within the IPCC requirement of half of biomass constitute carbon stock.

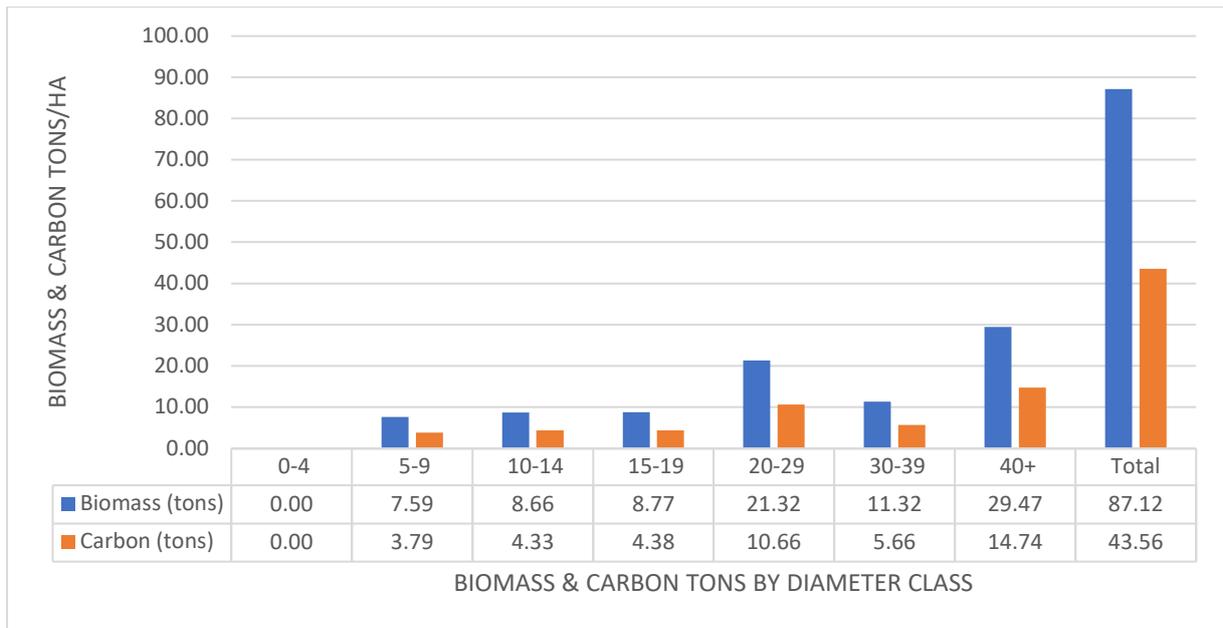


Figure 7: Biomass & Carbon (tons) by diameter class for all species

5 STAKEHOLDER DEMOGRAPHICS

Introduction & Methodology

A Forest livelihood survey was conducted by the Zambia Statistics Agency (ZAMSTATS) Eastern Regional office, between October and November 2019. The main objective of the Forestry livelihood Survey is to measure the well-being of the Chiswa East and West Forestry reserve population and to measure the utilisation 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 Chiswa East and West Local Forests can be translated as having an Average size of the household membership of about 5 per household.

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

Let $K = N/n$ Where:

N = total number of households assigned sampling serial numbers

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

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

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

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

5.1 Household and Population Dynamics

Chiswa East and West Local Forest as at 2019 livelihood survey was surrounded by approximately 99 villages/farms with a total population of **4,568**. The main ethnic groups in the area are the Chewas. The forest adjacent population are mostly small-scale farmers who utilize the forest for some of their livelihood requirements. The main crops grown are Maize, Tabacco, Sunflower, Soya beans and groundnuts. The land tenure of the population surrounding the Chiswa East and West Local Forest is mostly under customary land tenure system and partly for TBZ.

Levels 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 Chiswa East and West Forest was found to be mainly Primary level that contributed 54 percent while secondary contributed 21 percent. The rest being No formal education and tertiary education indicating 20 percent and 5 percent respectively. As shown in the figure below:

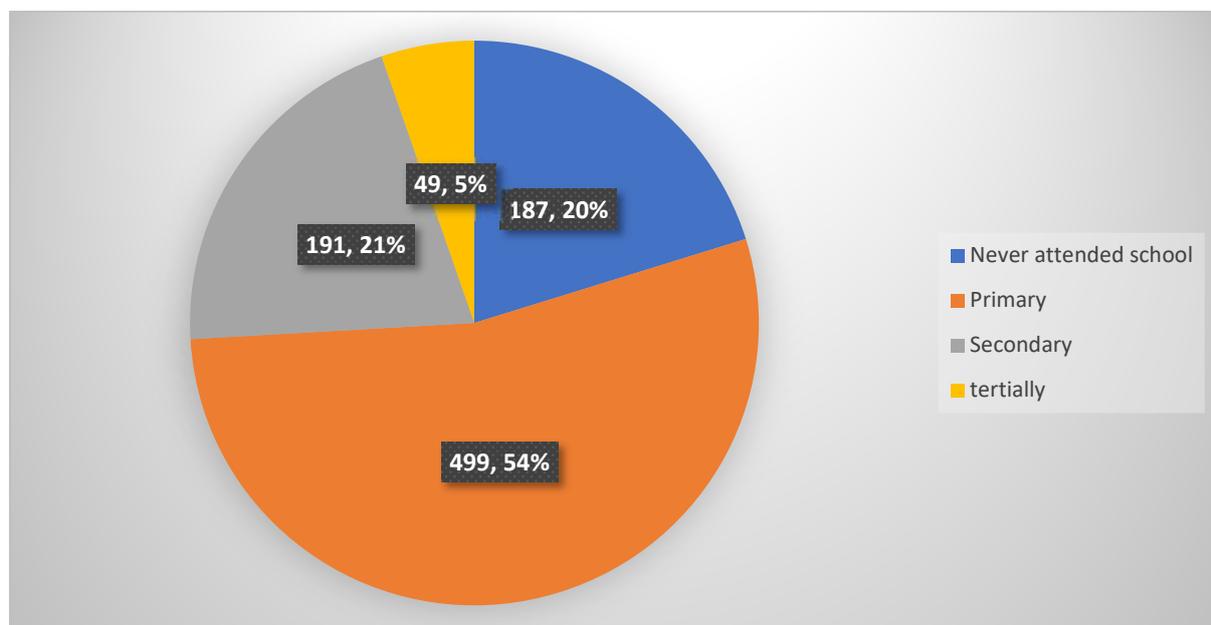


Figure 8 Levels of education

Chiswa East and West Local Forest population depends on farming as their main occupation. The results showed that 87 percent of the household population surrounding Chiswa East and West Local Forests had farming as their main occupation, while 4 percent are in paid employment and 8 percent where in business and 1.08 percent unstated economic activities. This translates into the high population depending on farming as main economic activity.

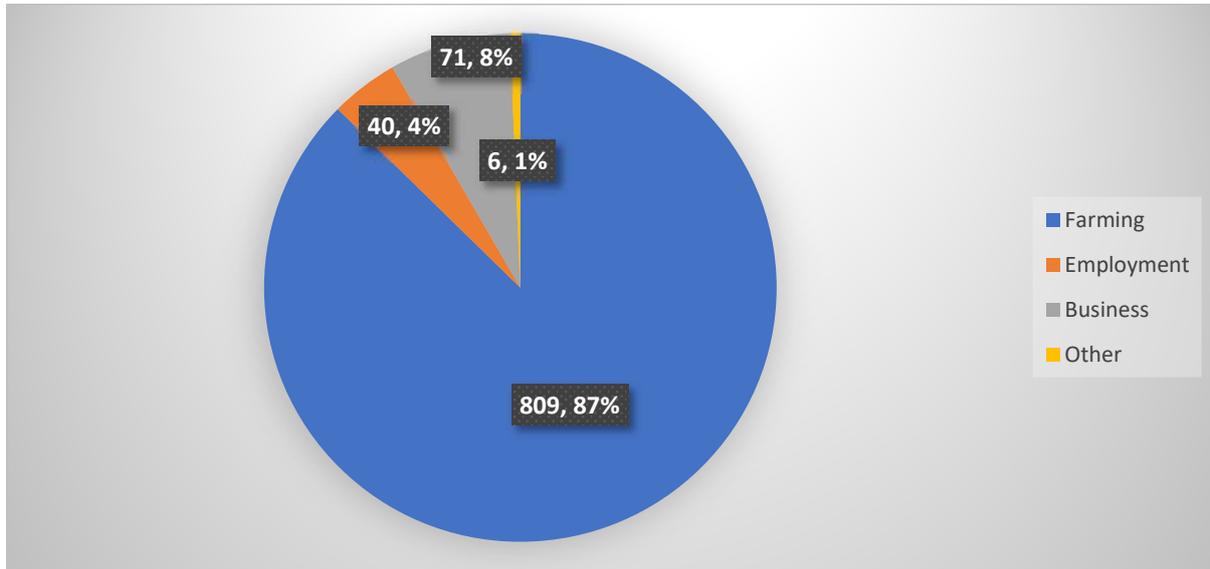
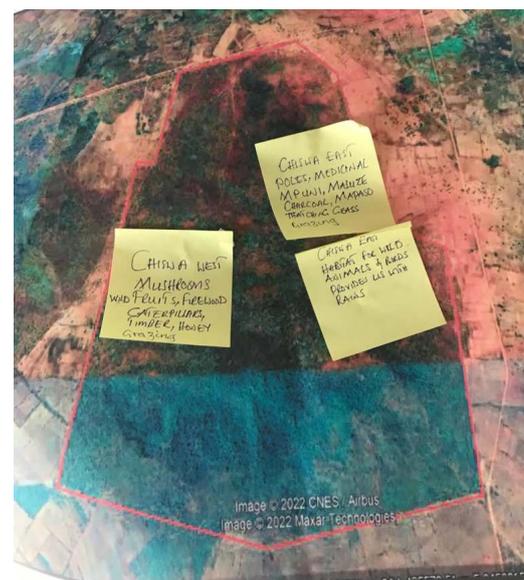
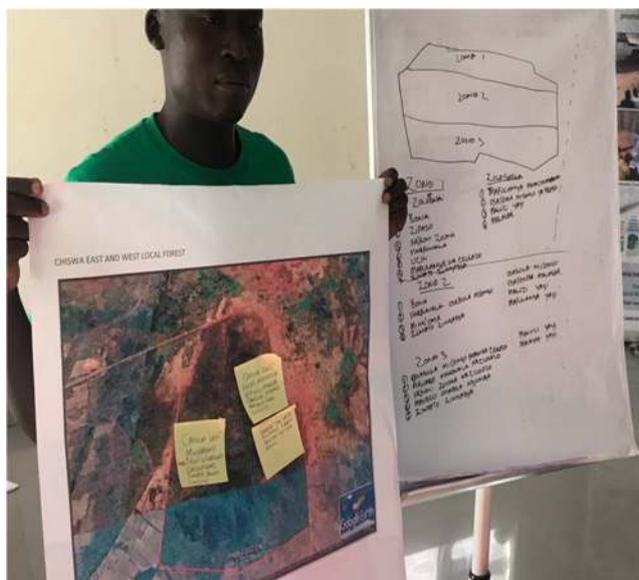


Figure 9 Main livelihood activities

5.2 Utilization and zoning of forestry resources by stakeholders

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



The zones were identified for the following:

Zone 1. Permitted activities.

- Harvesting of grass for thatching
- Beekeeping
- Firewood
- Caterpillars
- Livestock grazing
- Poles/Planks

Zone 2.

- Harvesting of timber
- Mushroom
- Beekeeping
- Caterpillars
- Fruits

Zone 3.

- Herbs
- Mushroom
- Livestock grazing
- Grass for thatching

Types of Energy Used For Cooking

Almost 94 percent of the households in the localities surrounding Chiswa East and West Local Forest use firewood as their energy for cooking. The livelihood survey revealed a percentage of about 4 percent using Charcoal as energy for cooking, while 2 percent using electricity as cooking energy.

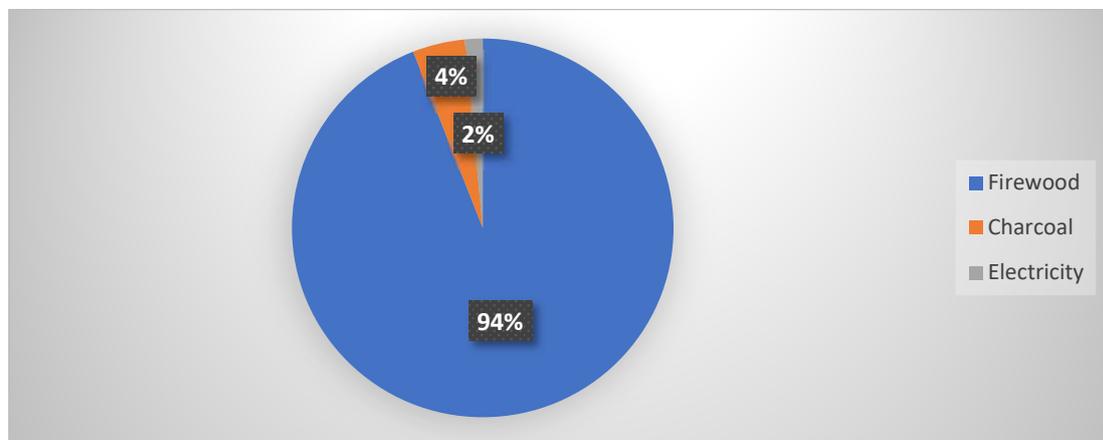


Figure 10 Energy use

Housing Characteristics

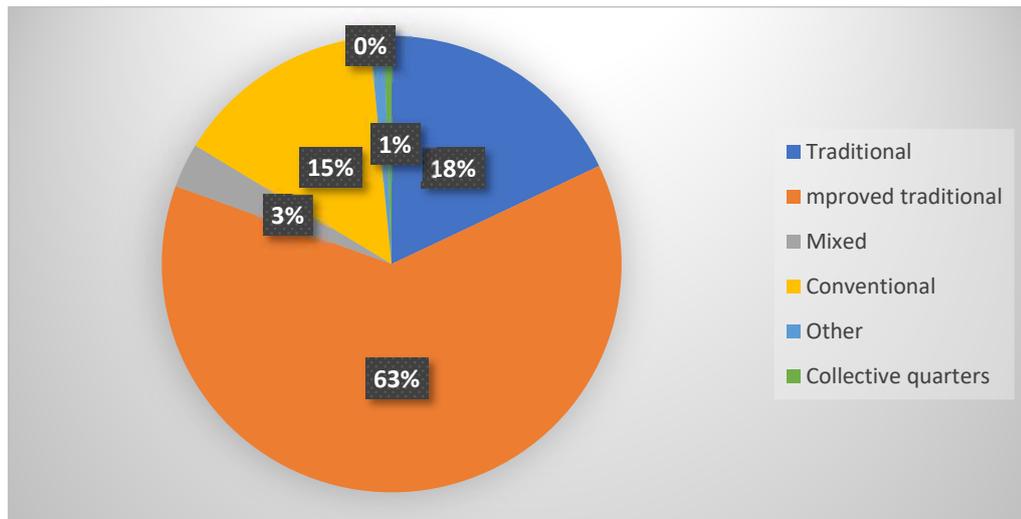


Figure 11 Housing characteristics

The housing Characteristics of Chiswa East and West Local Forest indicated 18 percent of households live in traditional housing units, 63 percent indicate improved traditional, conventional housing showed 15 percent, mixed housing 3 percent, 1 percent other housing.

5.3 Main tree resources used by households for Firewood

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

| Main Tree Resources Used – Chiswa East/West Local Forest | |
|--|-----------------------|
| <i>Brachystegia</i> | <i>Bohemii</i> |
| <i>Brachystegia</i> | <i>speciformis</i> |
| <i>Julbernadia</i> | <i>globiflora</i> |
| <i>Diplorynchus</i> | <i>condlocarpon</i> |
| <i>Pericopsis</i> | <i>angolensis</i> |
| <i>Pseudolachnostylis</i> | <i>maprouneifolia</i> |
| <i>Combretum</i> | <i>collinum</i> |
| <i>Bauhinia petersiana</i> | <i>collinum</i> |
| <i>Piliostigma</i> | <i>thonningii</i> |

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

Non Wood Forest Product

The main non-wood forest products used by households surrounding the Chiswa East and West Local Forest are as shown in the table below.

| Non-wood Forest products |
|--------------------------|
| Mushroom |
| Fruits |
| Grass |
| Medicine |
| Caterpillars |

Land Ownership and Use

The livelihood survey for the communities surrounding the Chiswa East/West Local Forest revealed that most of the land owned by the households was for Agricultural activities which indicated 81 Percent, followed by other uses at 19 percent, fallow land 10 percent, Land maintained as Natural forest 4 percent and land used for rowing growing trees at 2 percent as in figure below.

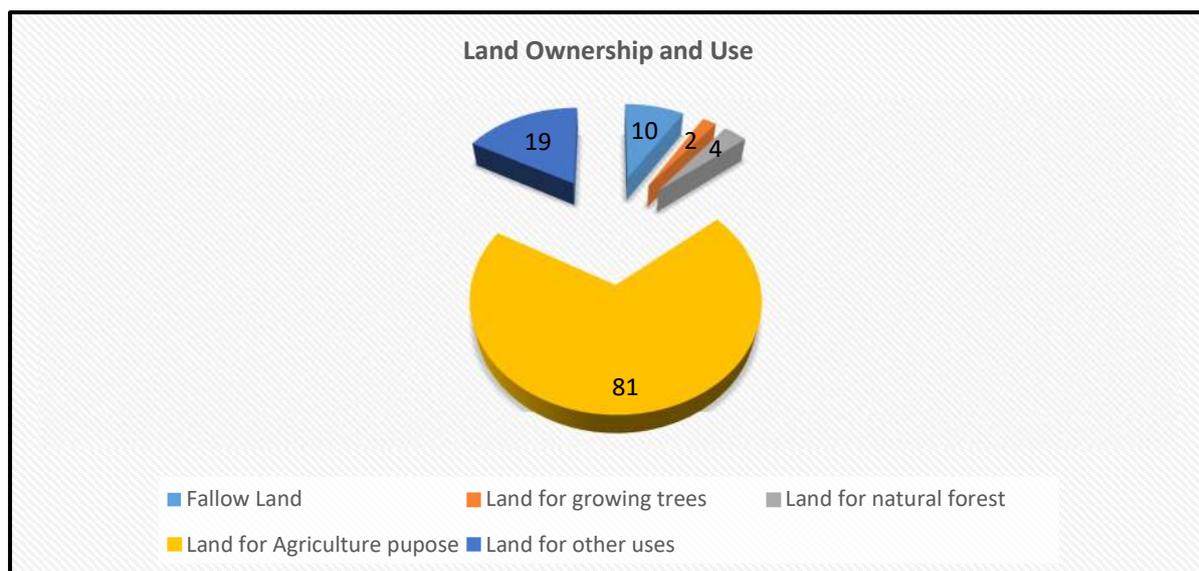


Figure 12 Land ownership / use

The livelihood survey revealed that the majority of head of households in localities surrounding the Chiswa East/West Local Forest are willing if called upon, to voluntarily support management of the forest reserve with forest department and other stakeholders in the community. This can be shown in figure 10, indicating that almost 89 percent are willing.

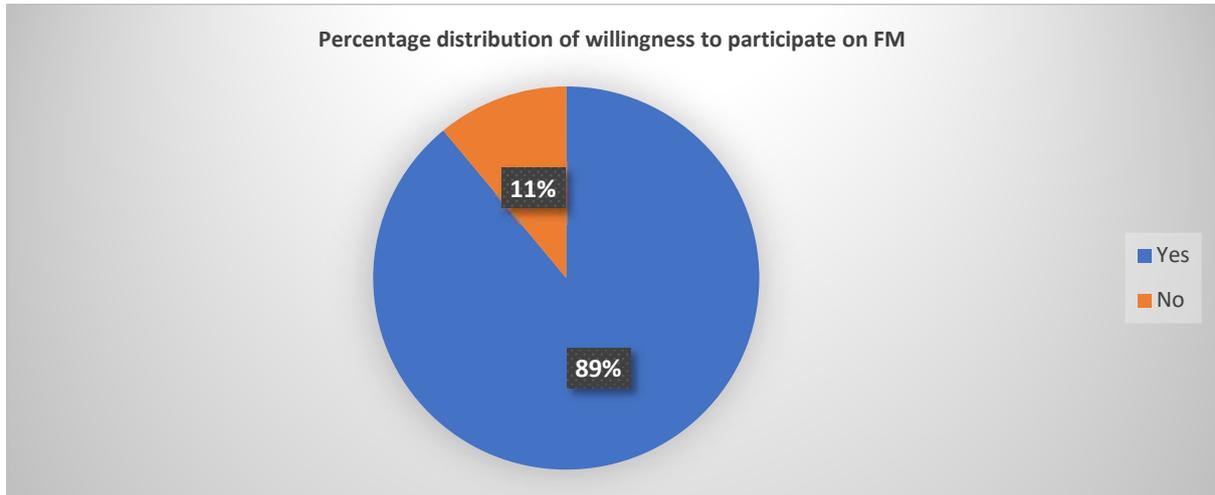


Figure 13 Willingness to participate in forest management

6 PROPOSED MANAGEMENT ACTIONS

In view of the current condition and rate of deforestation and forest degradation being experienced across 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 and restoration of the Local Forest. This includes applying the community forestry process which supports community control, use and management of forest areas in partnership with the Forestry Department. Learning from this approach in this critical Local Forest will inform similar processes for other selected protected forest areas in Eastern Province and across Zambia. All approaches will conform to the stated purpose of a Local Forest as described in section 12 of the Forests Act, 2015:

| | |
|--|--------------------------------|
| <p>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—</p> <p>(a) the security of forest resources;</p> <p>(b) the protection of ecosystems, particularly the protection of land and water supplies of local strategic importance;</p> <p>(c) the utilisation of forest resources at the local level; and</p> <p>(d) meeting the social, cultural and economic needs of the local community.</p> | <p>Purpose of Local Forest</p> |
|--|--------------------------------|

The emphasis will be on Forest Landscape Restoration (FLR) as a process for regaining ecological functionality, increasing availability of resources and therefore enhancing values across deforested or degraded forest landscape of CLF. 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 reforestation 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, reforestation through planting of indigenous or exotic species in abandoned fields in a plantation environment where practical.

Opportunities for collaboration with partners and seeking investment and sustainable 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 anticipated 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.

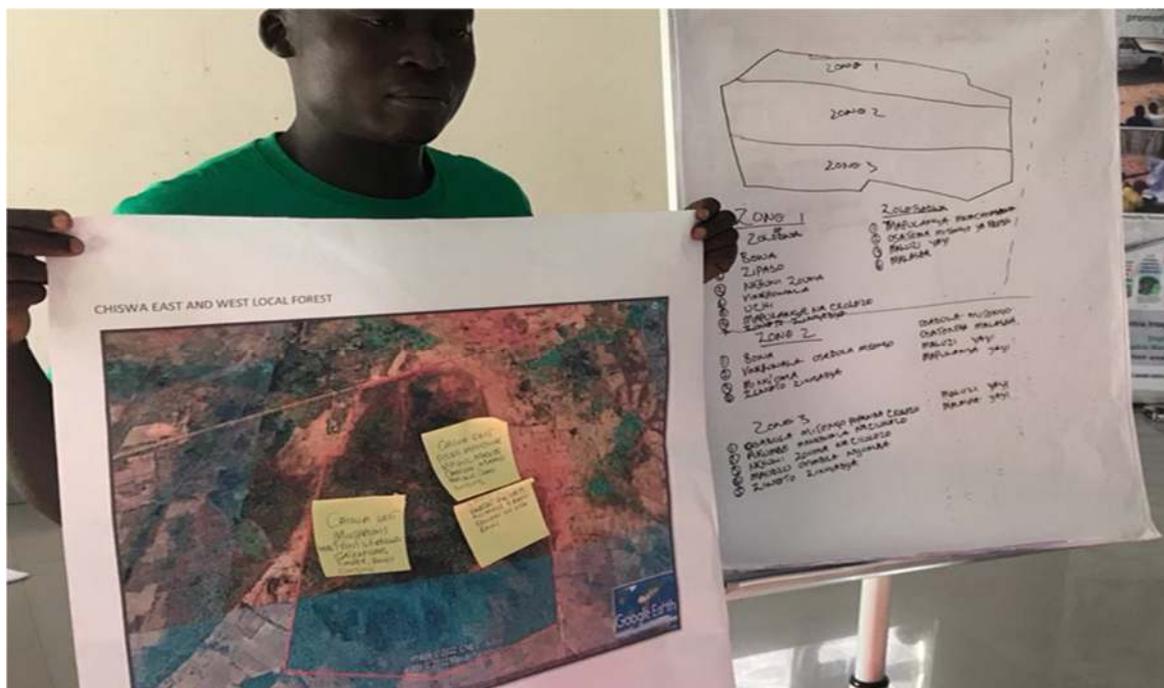


Figure 14 Participatory mapping and local zoning of the forest

6.1 Zoning of Chiswa East & West Local Forests

This management plan recognizes the 2 major zones identified during the stakeholder consultation of May 2022, which identified use of the forest, the main users of the forest, issues affecting Chiswa east and West 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.

Zone 1: Forest Protection, Management and Conservation of Biodiversity

Chiswa East and West Local Forest is an important forest ecosystem containing different plant species. The Local Forest also falls within directly in between communities, CLF provides an important function in preserving cultural heritage. However, 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.

Zone 2: Forest restoration zone

This covers the areas already impacted by human activity including seasonal and permanent farming including 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.

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.

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 and restoration across the entire landscape of CLF as opposed to individual sites. This entails balancing a

mosaic of land uses across the gazetted forest, such as securing intact forested areas, regenerating degraded forests, promoting agroforestry systems, climate smart agriculture, well-managed plantations where appropriate, as well as identifying ecological corridors and riparian strips to protect watercourses and waterways.

- *Restoring ecological functions.* 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.

6.3 Core forest management actions

The identified management actions are described as follows:

Action 1: Forest Conservation through Community Participation & Livelihood Development

Community empowerment is central to participatory forest management for the effective coordination and sustainable management of forest resources. This Plan recognizes that communities in and surrounding Chiswa East and West Local Forest are key stakeholders in the conservation of this forest as well as beneficiaries from

its sustainable management. This action aims at meeting the social, cultural and economic needs and thereby improving the livelihoods of the communities in Chiswa East and West Local Forest. Within this management action, the following interventions will be undertaken in Zones 1 and 2;

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

| Specific Objectives | Strategy | Actions | Responsible | Indicator |
|--|---|--|--------------------|---|
| 1. Enter into partnership with clear roles and responsibilities with surrounding communities | Promote community forestry approach | Conduct CFM Steps 1-7 | FD | Signed CFM agreement. Annual work plan reports from the CFMG |
| 2. To contribute towards meeting social, cultural and economic needs and improving the livelihoods of forest-adjacent communities. | Forest resource condition is developed and improved through management actions emphasizing the use of best practices. | Training forest-adjacent communities in sustainable forest enterprises, such as beekeeping, and other non-wood | FD/NGOs | Forest enterprise activities developed and producing income. |

| | | | | |
|--|--|---|--------------------------|---|
| | | forest enterprises | | |
| 3. To reduce carbon emissions from deforestation and forest degradation by ensuring community benefit from carbon credits. | Establish an incentive benefit sharing mechanism through the carbon trading scheme to be established by Government in Eastern province | Stake holder participatory awareness meetings (Traditional leaders, Government, NGOs and the community) | FD/NGOs | Tonnage of GHG sequestered increased thereby income shared to community is improved year on year. |
| 4 Reduce forest dependency by local communities. | Promoting diversification of activities, particularly on-farm activities such as agroforestry and establishment of wood-lots, to create alternative Sources for forest products. | Involve local communities in woodlot establishment. | FD/ Adjacent communities | Number of people dependent on the forests reserve reduced by half at mid term review |

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

Chiswa East and West local Forest is an important forest ecosystem containing a number of different plant species. The forest is surrounded by an increasing population which is highly dependent on it for subsistence and increasingly economic needs like collection of mushroom, wild fruits, caterpillars, honey, firewood and poles. The level of unsustainable use is anticipated to intensify with increasing human populations resulting in higher levels of resource exploitation and

degradation. Protection of this forest habitat is therefore essential to ensure the continued ecosystem services and local livelihood needs. However, the awareness of the importance of ecosystem services, conservation of biodiversity and climate change mitigation services of Chiswa East and West 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 Chiswa East and West Local Forest through following the community forestry development steps and processes.

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

- To develop a shared management approach to forest protection, management and utilisation.

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

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

| | | | | | |
|---|--|--|---|---|---|
| | | | - Erection of signpost on roads entering the Forest | | |
| 3 | To conserve and enhance the biodiversity of the forest reserve. | Enhance understanding of the forest ecosystem. | -Awareness on biodiversity with regard to indigenous knowledge. -Promote local participation and ownership through meetings. | FD/NGOs | |
| 4 | To ensure protection against pests and human damage | Frequent monitoring of forest resources | Inspections for diseases and pests and detection of possible illegalities. | FD/ Community | Hectarage of forest protected from pests and human damage |
| 5 | To significantly reduce levels of illegal forest product harvesting. | Involve the local communities in the management of forest resources in order to create a sense of ownership. Engage honorary forest Officers/guards | -Conduct sensitization meetings. -Conduct forest patrols. | FD/ community and other security wings | Number of illegal harvesters/ activities reduced |
| 6 | To significantly reduce levels of tree cutting for wood energy. | Promotion of energy efficient Cook stoves and Alternative energy sources. | Training community members in construction of Permanent energy cook stoves. | FD/ DoE/ community | Volume of wood cut for energy reduced by 30% by mid term review |

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

| | | | | | |
|--|--|---|---|--|--|
| | | biodiversity values will become of more direct relevance to them. | 2.Promote local participation and benefits from eco-tourism as a means of creating better awareness of biodiversity | | |
|--|--|---|---|--|--|

These will be detailed in an annual plan of operations to be prepared by the Officers responsible for the management of the Reserve. This management action will be operationalized, and results measured as follows:

| Specific Objective | Strategy | Activity | Responsibility | Indicators |
|---|---|--|-----------------------|--|
| 1. To improve livelihoods of the local community adjacent to the forest | Create employment for income generation to the communities around the forest. | Silvicultural and forest protection operations | FD/Community | Income of local community adjacent to the forest increased |

6.4 Environmental & social safeguards

The Forestry Department shall ensure that the management of Chiswa East and West 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 Chiswa East and West 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 Chiswa East and West Local Forest. This aspect should be in line with the National Gender Policy and Climate Change Gender Action Plan. Further safeguards in relation to emissions reductions benefit sharing plan for Eastern Province should be adhered to.

Environmental and social screening processes. Specific activities as well as the annual workplan and operational plans should include a process of social and environmental screening. These should be reviewed and updated in accordance with the type of activity being planned and general screening reviewed annually.

A Grievance redress mechanism will be operational at the District and Provincial level to allow a mechanism for grievances to be raised, documented and addressed. Documentation and tracking is core to this issue.

| Specific Objectives | Strategy | Activity | Responsible | Indicator |
|---|--|--|--------------------|--|
| To ensure cross cutting issues are mainstreamed in all aspects of forest management for social equity wellbeing and empowerment through sustainable development | Ensure that all environmental and social impacts, risks and liabilities are identified and mitigated. Identify training needs. Promote ownership and access to forest products and services. | Awareness raising Short courses Exchange visits Refresher courses | FD/NGOs | All crosscutting issues mainstreamed in all forest management aspects. Zero grievances raised. Grievances addressed and closed within 3 months |

7 STAKEHOLDERS ROLES AND RESPONSIBILITIES

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

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

Role of the Local Authorities

The Local authority have a key role to play to fully integrate the management plan into local development plans with good cross sectorial linkages. The Local Forest is a natural resource asset within the district boundary supporting local economic development and wider wellbeing of the community.

Role of the Traditional Authorities

Traditional leaders play a vital role in providing mentorship and guidance to communities and helping resolve any conflicts and enforcement of customary laws relating to natural resource management. In terms of the community forestry approach, the chief plays a key role in providing consent to the process of recognition of the community and to the signing of the community forest management agreement between the community and the Director of Forestry. This agreement further reinforces the role of the traditional leaders in the oversight of the community forest management groups, including controlling access and use of the forest, hearing cases that can't be dealt with by the community, ensuring reporting and conduct of the election of office bearers is in conformity with the community constitution.

Role of communities

As key rights holders must take the lead in controlling access to the forest, ensuring benefits from sustainable use are maximized. Through the community forestry process roles, rights and responsibilities for controlling access and use as well as protection and sustainable management are clearly defined. The local community are therefore core to the implementation of the management plan.

Role of Honorary Forest Officers

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

Role of Private sector & Civil society organization

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

8 IMPLEMENTATION, MONITORING AND EVALUATION

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. Monitoring and evaluation of this management plan will be based on annual work plans that will be prepared for the Chiswa East and West Local Forest.

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

To ensure that implementation of the management plan is on course, a monitoring and evaluation plan subject to regular review during the plan period. Quarterly and annual M&E will address the Management Programmes outlined in the plan.

Continuous monitoring during the implementation period will be maintained through preparation and submission of monthly, quarterly and annual progress reports.

Evaluation

A mid and end term evaluation will be carried out to 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.

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 monthly, quarterly, and annual progress reports to the Provincial Forestry Office.

Success indicators

Success indicators provide a measure of assessing whether set targets are progressively being achieved. Success indicators agreed upon for different categories

of management activities will serve to assess the achievement of the set targets for each activity in the management plan monitoring indicators.

| 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 | No. of school conservation clubs formed. No. of awareness meetings and attendance. -No of trainings held/exposure visits | Records, monitoring & Evaluation reports and photographs. | The plan is successfully implemented with funds made available. |

| | | | |
|----------------------------|---|--|---|
| 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 |

Annex I: Declaration

LOCAL FOREST NO. P147: Chiswa West and East (DECLARATION) ORDER

Order by the Minister
Statutory Instrument 264 of 1964, 66 of 1975

Starting at the point where the easterly boundary of Farm No. D.77 crosses the southern edge of the Great East Road Reserve, the boundary follows the latter edge eastwards to the western boundary of the Ngoni Reserve No. II; thence southwards and eastwards along the western and southern boundaries of this reserve to the south-eastern corner of the Local Forest No. 131: Chiswa East; thence on a true bearing of approximately 182 degrees for approximately 1,066.8 metres to a forest beacon D on the western edge of the Chimkuli Road; thence on a true bearing of approximately 261 degrees for approximately 975.36 metres to Forest Beacon E; thence on a true bearing of approximately 281 degrees for approximately 1,463.04 metres to Forest Beacon F on the eastern edge of an old farm track; thence up the eastern edge of this track to the point where it crosses the easterly boundary of Farm No. D.77; thence north-eastwards along the latter boundary to the point of starting. The above described area, in extent 401.46 hectares approximately, is shown bordered green upon Plan No. FR210, deposited in the office of the Surveyor-General, signed by him and dated 20th February, 1962.

LOCAL FOREST NO. P131:

CHISWA EAST (DECLARATION) ORDER

Order by the minister
Statutory Instrument 264 of 1964

66 of 1975

Starting at the south-western corner of the Customary Land No. II on Chiswa Hill, the boundary follows the western boundary of this reserve northwards to the southern edge of the Great East Road Reserve; thence eastwards along this edge for approximately 396.24 metres to a Beacon G; thence on a true bearing of approximately 135 degrees for 762 metres to a Beacon A; thence on a true bearing of approximately 177 degrees for approximately 1,127.76 metres to a Beacon B; thence on a true bearing of approximately 117 degrees for approximately 487.68 metres to a Beacon C; thence due south to the southern boundary of the Customary Land No. II; thence westwards along this boundary to the point of starting.

The above described area, in extent 212.467 hectares approximately, is shown bordered green upon Plan No. FR194, deposited in the office of the Surveyor-General, signed by him and dated 20th February, 1962.

Annex II: Stakeholder consultations

The Forestry Department in Eastern Province initiated a process to prepare forest management plans for 13 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 Chiswa East and West Local Forests 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: Paramount Chief - Gawa Undi

Prior to meeting Chewa Sub Chiefs, the first visit was to pay courtesy call to the Paramount Chief of the Chewa people Kalonga Gawa Undi who was represented by his Induna Hon. Lucas Phiri in Chipangali district. Chiswa East and West Local Forests under Chief Kawaza fall under Kalonga Gawa Undi.



Figure 11 Meeting with Paramount Gawa Undi's senior Induna

During the courtesy call the team gave the background of forest inventories conducted in Chiswa Local forests and the interventions that ZIFLP is helping, the importance of the Luangwa landscape and the areas of interventions including climate smart agriculture, support to Forestry Department to continue protecting existing forest estates, support to nurseries, assisted natural regeneration and also support to establishment and management of community forests. The specifics of the visit were also made clear as to have an input from the Royal Highnesses in the development of the forest management plans.

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

Senior Chief Nzamane and Chieftainess of Chipata and Katete districts



Figure 16: Provincial Forestry officer displays the map to HRH Kawaza at the palace.

Annex III: Stakeholder validation meeting

REPORT FOR THE CHISWA EAST AND WEST LOCAL FOREST MANAGEMENT PLAN STAKEHOLDERS' VALIDATION MEETING HELD AT BENZU LODGE IN KATETE

Introduction:

The Forestry Department in 2019 undertook a forest inventory exercise to take stock of the forest resources in Chiswa Local Forest (CLF) 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. The Stakeholders Validation Meeting for CLF in Sinda was organized to validate the FMP for the CLF which was developed by the Forestry Department.

The meeting brought together 31 participants: (4 females and 27 males) drawn from government departments, civic leaders, CSOs, private sector, community groups and traditional leaders.

Official Opening

Ms Mchelemba A, Act/ District Commissioner for Sinda officiated at the CLF FMP validation meeting. The Act/District Commissioner informed the participants that the formulation of Forestry Management Plans (FMPs) was required by law (Forestry Act No. 4 of 2015) to be validated by stakeholders. Hence the meeting was very important. The meeting was called to facilitate sustainable management of the CLF which has no current FMP. In this regard the Act/District Commissioner implored the stakeholders to constructively engage and contribute actively in the meeting. He reiterated that FMP formulation is a legal obligation and needed to be formulated and validated in a consultative and participatory way. The importance of the meeting could not be over emphasized.

Meeting's Expectations

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

- i) to learn how to manage their forest and what to do.
- ii) to hear what Forestry Department had brought for them so that they would go and share with their respective communities.
- iii) develop the FMPs for Chiswa East and West Local Forest
- iv) learn how to manage their local forest.
- v) Implement lessons learnt.

Meeting Objectives

As the meeting objectives were highlighted by the DC in his speech.

Structure of Meeting

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

Presentations

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

Policy and Legal Context

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

- The objectives of ZIFLP that is “To improve the landscape management and increase environmental and economic benefits for the targeted rural communities in the Eastern Province” was highlighted.
- The ZIFLP as a GRZ project provided the Forestry Department with resources to enable it to fulfil its mandate and functions.
- Also highlighted in the presentation were the reasons that prompted government to implement the ZIFLP in Eastern Province which include the following on-going degradation, deforestation, unsustainable livelihood

activities, low crop yields, increased adverse effects of climate change, and low community participation in forest management:

- The importance of forests in line with the legal framework were highlighted in the presentation such as soil conservation, carbon sequestration, water cycle and habitat protection.
- The ZIFLP was a REDD+ Project, to determine where Green House Gases (GHG) were being emitted and the sources of these emission, Green House Gases (GHG) baseline survey was conducted which revealed 3 main sources of GHG emissions in Zambia: degradation 46%, forestry loss to agriculture 16% and emissions from agriculture soils at 14 %. The underlying causes of the 3 main source of GHG emissions were also highlighted.
- Through ZIFLP government was not only intervening to arrest the situation but also to make the communities aware of the imminent consequences if no action was taken at national and subnational levels.
- An overview of selected of existing pieces of Forest legislation were shared such as the National Forest Policy 2014, National Strategy to Reduce Deforestation and Forest Degradation, National Forestry Act No 4 of 2015 among others. Contents such as vision, objectives and measures were also shared.
- Also presented were the policy and pieces of legal documents pertaining to CLF. It was highlighted that CLF was gazetted as a forest in 1968 a local supply of timber. Forest protection was important for both the present and future generation as provided for in the legal documents.
- The meeting was being held because sustainable forest protection and management required concerted efforts and that FMPs formulation was a legal obligation that needed to be done in a consultative and participatory manner.

Situation Analysis

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

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

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

- Total number Protected Forest Reserves in eastern province was 73: 11 NFs and 62 LFs covering 469,142 ha which translates to 9.2% of the total surface area of the eastern province. the total boundary area covers 2,042.7km.
- How volume was calculated/measured was demonstrated
- The sampling design used to select the sample plots in the survey was systematic sampling design through which sample plots were created and data was accordingly collected from all the sample plots.
- Parameters that were considered in the survey were highlighted and explained.
- Total CO₂ for the net area of 449ha was estimated at 11,449.5tons
- The proposed programmes as contained in the draft FMP for CLF were also presented.

b) Social-Economic Profile.

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

- The Province undertook the Socio-Economic Survey in LDLF in 2019 alongside the Forest Inventory.
- At the time of the survey, the total population for the 99 villages surrounding CLF included in the survey that derived benefits from the forest was 4,568 out of which 2097 were male and 2471 were female. The sample comprised 925 households, out of which 696 were male headed households and 229 were female headed households.
- Farming (87%) was the main source of livelihood for the people surrounding the Forest, while (4%) are in paid employment and (8%) in business as main income generating activities, (1%) unstated.
- Almost (94%) all the people sampled Majority depended on firewood for cooking while only 4% use charcoal and 2 percent use electricity.
- The results show that the most common type of housing unit occupied by household was improved traditional houses at 63 percent, while 18 percent occupied traditional houses. Conventional housing contributed 15 percent, the lowest was mixed housing with 3 percent.

- CLF shows that 65.00 percent of households in Chiswa forest reserve had the boreholes as their main sources of drinking water. While 11 percent had protected well, 10 had unprotected well as main sources of drinking water, 9 percent of households had well/river/stream as their main source of drinking water.
- As much as 89% of the total sample population expressed willingness to protect and manage the CLF and only 11% expressed lack of willingness.

Clarifications raised by participants included: -

The villages surrounding CLF had been willing to co-manage the forest since 2014 when the Forestry Department engaged pertaining joint management. Through the same process the community management plan was even developed. However, the Department went quiet; there had been no follow-up since then until now. The community had been waiting for the actualization of the plan.

Group Work

Group work on issues and threats affecting the Protected Forest Area (PFA) and identification of hot spots of concern was facilitated by Mr. Anton. Two groups were formed to: -

- 🗺️ Identify issues and suggest possible solutions.
- 🗺️ Identify priorities and strategies.
- 🗺️ Identify uses of the forest and map where they were most prevalent.
- 🗺️ Zone the FPA and identification of practices which should be allowed or not allowed in the respective zones.
- 🗺️ Who should be involved in the management of CLF, how should they be selected, their role, office tenure, what authority in terms of decision making should they make, who decides, how should the benefits be shared?

Group Presentations

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

Collaboration Declaration Pledge

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

“We the interested stakeholders of CLF agree the need to increase the productivity of the CLF to enhance the environmental, social, cultural and economic values.

Damaging activities were identified, and solutions and strategies put forward to ensure the forest is well managed and protected. Permitted practices were identified as well as those which should be controlled.

As concerned stakeholders we are ready to work in partnership with the Forestry Department, Local Authority, traditional leaders to collaborate over the protection, control, use and management of CLF”.

Next steps

The team facilitated the session on next steps. Below were the agreed next steps/way forward.

- Forestry Department team to capture discussions, issues, strategies and recommendations from the meeting and report the opportunities to the Provincial Forestry Office and the Forestry Department Headquarters
- The chiefs’ representative should report Their Royal Highnesses the proceedings of the meeting.
- Forestry Department Team to:
 - Support follow up activities.
 - Develop proposal to secure funding for development of CLF with stakeholders’ involvement.
 - Subject to Project extension, check for opportunities for supporting enterprise development.

Vote of thanks, Closing Remark and Prayer

A representative of the stakeholders thanked government for convening that important meeting but appealed to government to implement the recommendations.

Mr Katebe thanked everyone for attending the meeting and contributing through their inputs in perfecting the FMP. He implored the stakeholders to report back to their superiors and/or their communities.

The closing prayer was done by one of the stakeholders.

The following is a synopsis of the group work and write up from flipcharts and other materials:

GROUP WORK – 1

1. Identify in Kondongwe local Forest.

What- Uses of the forest

- Firewood
- Charcoal
- Medicine
- Water from the streams
- Caterpillar (Nthowa)
- Honey
- Wild fruits
- Grass for thatching
- Poles for construction
- Fibre Collection
- Timber Harvesting
- Bird snaring
- Minerals present but exploration not yet
- Encroachment (Graveyard, school football pitch. Agriculture Fields)

Who- Uses the forest?

- Local Residents
- Safari Operators
- Traditional Healers
- Illegal Poachers

Where- it is used/harvested

| ISSUES | Solutions/opportunities |
|---------------------------------|--|
| Encroachment in the Forest | Realign forest boundary |
| No signpost | Sign posting all Forest areas, maps and books should be given to residents on Kondongwe Forest |
| Poaching | Recruit informers |
| Illegal cutting of Timber | Recruit informers |
| Charcoal Productions | Sensitization on the importance of conserving the forest |
| Late burning /bush fires | Controlled early burning |
| Usage of fire to fetch firewood | Promotion of cook stove , Collection of dry firewood |
| Agriculture | Promotion of smart agriculture |
| Fish Poisoning | Sensitization - Avoid fish poisoning |

Zoning of forest

List permitted practices/prohibited practices in each zone identified.

Permitted practices in the forest.

- Grass harvesting
- Hunting routes
- Caterpillars
- Dry firewood
- Fruits
- Early burning
- Carbon (Keep trees)
- Honey

Prohibited practices in the forest.

- No Charcoal Production
- No fresh Timber cutting.
- No Late fires

- No poaching
- No fish Poisoning.

GROUP WORK – 2

2. Identify in Kondongwe local Forest.

What- Uses of the forest

- Firewood
- Charcoal
- Medicine
- Water from the streams
- Caterpillar (Nthowa)
- Honey
- Wild fruits
- Timber Harvesting
- Bird snaring
- Mushroom
- Brooms
- Minerals present but exploration not yet

Who- Uses the forest?

- Local Residents
- Safari Operators
- Traditional Healers
- Illegal Poachers
- Animals
- Safari hunters

| ISSUES | Solutions/opportunities |
|-------------------|--|
| Charcoal burning | Promotion of energy efficient stoves |
| Timber harvesting | Controlled harvesting of timber |
| Honey harvesting | Capacity building in sustainable bee keeping |
| Bush fires | Formation of CFMG to help into the affairs of the Forest (bush firefighting) |

Zoning of forest

List permitted practices/prohibited practices in each zone identified.

Permitted practices.

- Grass harvesting
- Caterpillars
- Dry firewood
- Fruits
- Early burning
- Carbon (Keep trees)
- Honey

Prohibited practices.

- No Charcoal Production
- No fresh Timber cutting.
- No Late fires
- No fish Poisoning.

List Suggestions on how to manage the forest.

- Chiefdom Committee to be formed and forest department, with all local authority.

NEXT STEPS

- Compilation of the report
- Reporting to the chief and the Community
- Community forest processes
- FD to help CF processes.

Declaration

The stakeholders meeting for Chiswa East and West local forest that was held on May 2022, at Benzu Lodge, in Katete district. The stakeholders signed a joint declaration pledging to collaborate in the sustainable management of Chiswa East and West Local Forest.

Annex IV: Demographics of major forest fringe communities

| NAME OF COMMUNITY | POPULATION | | TOTAL POPULATION |
|-------------------|------------|--------|------------------|
| | MALE | FEMALE | |
| Chandowe Farm | 10 | 9 | 19 |
| Paononga Farm | 11 | 6 | 17 |
| Petrol Farm | 45 | 49 | 94 |
| Nkhuwa Farm | 16 | 19 | 35 |
| Kalipenta Farm | 28 | 29 | 57 |
| Grand Farm | 9 | 4 | 13 |
| Saidi Thole Farm | 5 | 4 | 9 |
| Mbewe Farm | 5 | 7 | 12 |
| Steve Thole Farm | 7 | 7 | 14 |
| Adamson Farm | 2 | 1 | 3 |
| Born Mwanza Farm | 2 | 7 | 9 |
| Mabvuto Zulu Farm | 4 | 3 | 7 |
| Lyson Tembo Farm | 4 | 4 | 8 |
| Sharpi Banda Farm | 4 | 8 | 12 |
| Agripa | 66 | 73 | 139 |
| Phiri Kazimu Farm | 2 | 4 | 6 |
| Shonga Residence | 5 | 3 | 8 |
| Nkholowondo | 314 | 370 | 684 |
| Chiswa School | 12 | 20 | 32 |
| Kachila | 97 | 137 | 234 |
| Chizimati | 263 | 279 | 542 |
| Mkuzi | 137 | 284 | 421 |
| Kasiya | 111 | 114 | 225 |
| Msamaria School | 4 | 5 | 9 |
| Chiswa Millers | 9 | 13 | 22 |
| Chiswa Trading | 104 | 98 | 202 |
| James Ngoma Farm | 5 | 5 | 10 |
| Anangoza Farm | 5 | 6 | 11 |
| Katenda Village | 144 | 174 | 318 |
| Zulu Farm | 6 | 2 | 8 |

| SUB-TOTAL | 1436 | 1744 | 3180 |
|------------------------------|------|------|------|
| Mary Ng'ona | 3 | 5 | 8 |
| Smart Farm | 6 | 10 | 16 |
| Isaac Banda Farm | 4 | 5 | 9 |
| Godfrey Banda Farm | 3 | 5 | 8 |
| Peter Mbuzi Farm | 2 | 3 | 5 |
| Sakanika | 40 | 42 | 82 |
| Vincent Phiri Farm | 4 | 5 | 9 |
| Lingson. M. Banda | 4 | 4 | 8 |
| Sainani Soko Farm | 8 | 9 | 17 |
| Njobvu Joseph Farm | 10 | 14 | 24 |
| Aaron Zulu | 2 | 2 | 4 |
| Isaac Phiri | 7 | 15 | 22 |
| Grace Zulu Farm | 6 | 5 | 11 |
| Kapondeni | 23 | 36 | 59 |
| Sainani Soko Farm (Makukula) | 12 | 10 | 22 |
| Akanika Banda | 3 | 6 | 9 |
| Kuluma Farm | 1 | 1 | 2 |
| Mabvuto Farm | 17 | 19 | 36 |
| Tryson Banda | 4 | 9 | 13 |
| Ackson Farm | 7 | 4 | 11 |
| Daka Farm | 9 | 9 | 18 |
| Tryson Farm | 1 | 0 | 1 |
| Chipeko Acry | 3 | 2 | 5 |
| Pa Euro | 3 | 8 | 11 |
| Pa Friday | 7 | 7 | 14 |
| Pa Levy farm | 5 | 5 | 10 |
| Lyford Farm | 3 | 3 | 6 |
| Pa Evasi Farm | 8 | 8 | 16 |
| Unguzani Farm | 6 | 9 | 15 |
| Pearson Farm | 9 | 7 | 16 |
| Mshanga Farm | 31 | 24 | 55 |
| Njelenje Farm | 3 | 6 | 9 |
| Mbewe Farm | 13 | 10 | 23 |
| Cosmas Lungu Farm | 6 | 8 | 14 |
| Smart Banda Farm | 34 | 19 | 53 |
| Limited Njobvu Farm | 10 | 5 | 15 |
| Blackson Phiri Farm | 1 | 2 | 3 |
| Azifi Farm | 12 | 15 | 27 |

| | | | |
|--------------------|-------------|-------------|-------------|
| Ngwenyama Farm | 11 | 12 | 23 |
| Yona Farm | 29 | 32 | 61 |
| Seke Farm | 2 | 2 | 4 |
| Loti Farm | 18 | 15 | 33 |
| Ndungo | 27 | 30 | 57 |
| Chezani Farm | 21 | 23 | 44 |
| Gabriel | 1 | 2 | 3 |
| Sakala | 2 | 4 | 6 |
| Mweemba | 2 | 4 | 6 |
| Mumba | 6 | 10 | 16 |
| Nyendwa | 2 | 6 | 8 |
| TBZ Camp | 28 | 32 | 60 |
| Tobacco | 18 | 23 | 41 |
| Zemba Shops | 11 | 10 | 21 |
| Ntaka Ipasa | 0 | 1 | 1 |
| Kabazi | 2 | 3 | 5 |
| Gryford | 5 | 6 | 11 |
| TBZ New Houses | 24 | 27 | 51 |
| RZ | 15 | 5 | 20 |
| Sheet | 5 | 6 | 11 |
| Tobias | 5 | 8 | 13 |
| Jaseni | 7 | 10 | 17 |
| Bathrowe Chadolo | 12 | 14 | 26 |
| Khandolo | 1 | 1 | 2 |
| Naifi | 7 | 8 | 15 |
| Laitani | 10 | 8 | 18 |
| Fungulani | 14 | 15 | 29 |
| Akicm | 5 | 12 | 17 |
| Ng' ombe | 5 | 9 | 14 |
| Nickson | 11 | 11 | 22 |
| Bwezani | 9 | 5 | 14 |
| Kwenda Samuel | 13 | 10 | 23 |
| Stephano | 3 | 7 | 10 |
| SUB-TOTAL | 661 | 727 | 1388 |
| GRAND TOTAL | 2097 | 2471 | 4568 |

Annex V: References

- Fanshawe D.B (1971), The Vegetation of Zambia, Forest Research Bulletin No. 7, Ministry of Rural Development, Republic of Zambia, Government Printer, Lusaka, Zambia
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- ILUA II (2008) Integrated Land Use Assessment Phase I – 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 – 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 VI: Cost of Implementing and funding Cost Estimates

The various prescribed activities are outlined and their corresponding estimated costs are indicated in the following tables:

Table 1. Forest Protection and Management

| Specific Objective | Prescribed treatment | Unit of Measure | Qty | Freq | Unit Cost | Total Cost Year 1 | Total Cost Year 2 | Total Cost Year 3 | Total Cost Year 4 | Total Cost Year 5 | Total Cost Year 6 | Total Cost Year 7 | Total Cost Year 8 | Total Cost Year 9 | Total Cost Year 10 |
|---|--|-----------------|-----|------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| To secure the boundary and define the extent of the boundary and prevent possible encroachment. | Carry out annual external boundary maintenance in accordance with the boundary maintenance schedule. | Km | 7 | 1 | 10,500 | 73,500 | 80,850 | 88,935 | 97,829 | 107,611 | 118,372 | 130,210 | 143,231 | 157,554 | 173,309 |
| | Forest beacon maintenance | No. | 10 | 1 | 650 | 6,500 | 7,150 | 7,865 | 8,652 | 9,517 | 10,468 | 11,515 | 12,667 | 13,933 | 15,327 |
| | Erection of sign post on roads entering the Forest | No. | 6 | 1 | 300 | 1,800 | 1,980 | 2,178 | 2,396 | 2,635 | 2,899 | 3,189 | 3,508 | 3,858 | 4,244 |
| To significantly reduce levels of illegal forest product harvesting. | Conduct sensitization meetings | No. | 4 | 1 | 2,000 | 8,000 | 8,800 | 9,680 | 10,648 | 11,713 | 12,884 | 14,172 | 15,590 | 17,149 | 18,864 |
| | Conduct forest patrols | No | 8 | 3 | 800 | 19,200 | 21,120 | 23,232 | 25,555 | 28,111 | 30,922 | 34,014 | 37,415 | 41,157 | 45,273 |
| To protect Forest Reserve from late fires | Conduct prescribed and early burning. | Ha | 324 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | |
|---|---|-----|----|---|--------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| To ensure protection against pests, fire, and human damage for the sustainability of forest resources | Training the local communities on fire management techniques | No | 2 | 1 | 2,500 | 5,000 | 5,500 | 6,050 | 6,655 | 7,321 | 8,053 | 8,858 | 9,744 | 10,718 | 11,790 |
| | Sensitizing the local community on the importance of early burning. | No. | 2 | 1 | 2,000 | 4,000 | 4,400 | 4,840 | 5,324 | 5,856 | 6,442 | 7,086 | 7,795 | 8,574 | 9,432 |
| | Inspections for diseases and pests, and detection of possible illegalities. | No | 2 | 1 | 15,000 | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |
| To improve forest cover in the fringe areas of the forest reserve | Woodlot establishment for the forest. | No | 20 | 1 | 1,500 | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |
| Subtotal | | | | | | 178,000 | 195,800 | 215,380 | 236,918 | 260,610 | 286,671 | 315,338 | 346,872 | 381,559 | 419,715 |

Table 2. Biodiversity Conservation and Environmental Education

| Specific Objective | Prescribed treatment | Unit of Measure | Qty | Freq. | Unit Cost | Total Cost Year 1 | Total Cost Year 2 | Total Cost Year 3 | Total Cost Year 4 | Total Cost Year 5 | Total Cost Year 6 | Total Cost Year 7 | Total Cost Year 8 | Total Cost Year 9 | Total Cost Year 10 |
|---|---|-----------------|-----|-------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| To conserve and enhance the biodiversity of the forest reserve. | Promote local participation and ownership through meetings. | No | 2 | 2 | 2,000 | 8,000 | 8,800 | 9,680 | 10,648 | 11,713 | 12,884 | 14,172 | 15,590 | 17,149 | 18,864 |

| | | | | | | | | | | | | | | | | |
|--|--|-----|---|---|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|--|
| Improve local awareness of biodiversity and its value. | Awareness on biodiversity with regard to indigenous knowledge through drama. | No. | 2 | 2 | 2,500 | 10,000 | | | | | | | | | | |
| | | | | | | | 11,000 | 12,100 | 13,310 | 14,641 | 16,105 | 17,716 | 19,487 | 21,436 | 23,579 | |
| Subtotal | | | | | | 18,000 | 19,800 | 21,780 | 23,958 | 26,354 | 28,989 | 31,888 | 35,077 | 38,585 | 42,443 | |
| To create wider awareness of the forest, its importance, and the need for its conservation | Conduct meetings and drama performances to assess community understanding on forest use and conservation. | No | 2 | 1 | 2,500 | 5,000 | 5,500 | 6,050 | 6,655 | 7,321 | 8,053 | 8,858 | 9,744 | 10,718 | 11,790 | |
| | Sensitization on Climate change and produce pamphlets on the need for forest Conservation. (Local language). | No | 2 | 1 | 2,500 | 5,000 | 5,500 | 6,050 | 6,655 | 7,321 | 8,053 | 8,858 | 9,744 | 10,718 | 11,790 | |
| | Facilitate the formation of forest conservation clubs in surrounding schools. | No | 2 | 1 | 2,000 | 4,000 | 4,400 | 4,840 | 5,324 | 5,856 | 6,442 | 7,086 | 7,795 | 8,574 | 9,432 | |
| | Conduct school quiz on forest conservation/climate change. | No | 2 | 1 | 5,000 | 10,000 | 11,000 | 12,100 | 13,310 | 14,641 | 16,105 | 17,716 | 19,487 | 21,436 | 23,579 | |
| | Conduct study visits to other areas and projects to gain practical and potentially useful experiences from | No | 1 | 1 | 25,000 | 25,000 | 27,500 | 30,250 | 33,275 | 36,603 | 40,263 | 44,289 | 48,718 | 53,590 | 58,949 | |
| | Subtotal | | | | | 49,000 | 53,900 | 59,290 | 65,219 | 71,741 | 78,915 | 86,806 | 95,487 | 105,036 | 115,539 | |
| | | | | | | | | | | | | | | | | |

Table 3. Forest Conservation through Community participation and Livelihood development.

| Specific Objective | Prescribed treatment | Unit of Measure | Qty | Freq. | Unit Cost | Total Cost Year 1 | Total Cost Year 2 | Total Cost Year 3 | Total Cost Year 4 | Total Cost Year 5 | Total Cost Year 6 | Total Cost Year 7 | Total Cost Year 8 | Total Cost Year 9 | Total Cost Year 10 |
|--|--|-----------------|-----|-------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| To contribute towards meeting subsistence needs and improving the livelihoods of forest-adjacent communities | Training forest-adjacent communities in sustainable forest enterprises such as beekeeping, gardening and other non-wood forest enterprises | No | 3 | 2 | 10,000 | 60,000 | 66,000 | 72,600 | 79,860 | 87,846 | 96,631 | 106,294 | 116,923 | 128,615 | 141,477 |
| Reduce forest dependency by local communities | Involve local communities in woodlot establishment. | No. | 4 | 1 | 4,000 | 16,000 | 17,600 | 19,360 | 21,296 | 23,426 | 25,768 | 28,345 | 31,179 | 34,297 | 37,727 |
| Subtotal | | | | | | 76,000 | 83,600 | 91,960 | 101,156 | 111,272 | 122,399 | 134,639 | 148,102 | 162,913 | 179,204 |

Table 5. Human Resource Development.

| Specific Objective | Prescribed treatment | Unit of Measure | Qty | Freq. | Unit Cost | Total Cost Year 1 | Total Cost Year 2 | Total Cost Year 3 | Total Cost Year 4 | Total Cost Year 5 | Total Cost Year 6 | Total Cost Year 7 | Total Cost Year 8 | Total Cost Year 9 | Total Cost Year 10 |
|--|--|-----------------|-----|-------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| To Improve skills for effective management | Short courses Exchange visits, Refresher courses | No | 1 | 1 | 30,000 | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |
| To build capacity in the local members for effective performance | Training. | No. | 2 | 2 | 8,000 | 32,000 | 35,200 | 38,720 | 42,592 | 46,851 | 51,536 | 56,690 | 62,359 | 68,595 | 75,454 |

| | | | | | | | | | | | | | | | |
|-----------------|--|--|--|--|--|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Subtotal | | | | | | 62,000 | 68,200 | 75,020 | 82,522 | 90,774 | 99,852 | 109,837 | 120,820 | 132,903 | 146,193 |
|-----------------|--|--|--|--|--|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|

Table 6. Infrastructure Development

| Specific Objective | Prescribed treatment | Unit of Measure | Qty | Freq. | Unit Cost | Total Cost Year 1 | Total Cost Year 2 | Total Cost Year 3 | Total Cost Year 4 | Total Cost Year 5 | Total Cost Year 6 | Total Cost Year 7 | Total Cost Year 8 | Total Cost Year 9 | Total Cost Year 10 |
|---|--|-----------------|-----|-------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| To establish and maintain the infrastructure necessary to achieve multiple objectives of forest management. | 1. Lobby for Maintenance the access roads to forest reserve. | Km | 1 | 1 | 30,000 | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |
| | | | | | | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |
| Subtotal | | | | | | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |

Table 7. Research, Monitoring & Evaluation

| Specific Objective | Prescribed treatment | Unit of Measure | Qty | Freq. | Unit Cost | Total Cost Year 1 | Total Cost Year 2 | Total Cost Year 3 | Total Cost Year 4 | Total Cost Year 5 | Total Cost Year 6 | Total Cost Year 7 | Total Cost Year 8 | Total Cost Year 9 | Total Cost Year 10 |
|---|---|-----------------|-----|-------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| To conduct research to enhance regeneration potentials of important tree spp. | Identify the important trees based on demand for the research and their locations in the reserve. | No. | 3 | 3 | 4,000 | 36,000 | 39,600 | 43,560 | 47,916 | 52,708 | 57,978 | 63,776 | 70,154 | 77,169 | 84,886 |
| | | | | | | 45,000 | 49,500 | 54,450 | 59,895 | 65,885 | 72,473 | 79,720 | 87,692 | 96,461 | 106,108 |
| | Regeneration potentials of the identified trees would be observed. | Ha | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | |
|---|---|----|---|---|----------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|---------|
| continuously conduct research on community interactions in forest reserve | Identify all forest fringe communities. | No | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Socio-economic survey would be conducted for the forest fringe community with assistance from CSO | No | 1 | 1 | 50,000 | 50,000 | 55,000 | 60,500 | 66,550 | 73,205 | 80,526 | 88,578 | 97,436 | 107,179 | 117,897 |
| To attain improved understanding of the forest and its usage, in conformity with the Management Plan. | Implement the Management plan and monitor activities | No | 1 | 1 | 30,000 | 30,000 | 33,000 | 36,300 | 39,930 | 43,923 | 48,315 | 53,147 | 58,462 | 64,308 | 70,738 |
| | Evaluate the implementation | No | 1 | 1 | 40,000 | 40,000 | 44,000 | 48,400 | 53,240 | 58,564 | 64,420 | 70,862 | 77,949 | 85,744 | 94,318 |
| Subtotal | | | | | 201,000 | | 221,100 | 243,210 | 267,531 | 294,284 | 323,713 | 356,084 | 391,692 | 430,861 | 473,947 |
| Grand-Total | | | | | 614,000 | 675,400 | 742,940 | 817,234 | 898,957 | 988,853 | 1,087,738 | 1,196,512 | 1,316,164 | 1,447,780 | |



REPUBLIC OF ZAMBIA

Ministry of Green Economy & Environment

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

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

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



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