

MINISTRY OF ENVIROMENT AND TOURISM
Directorate of Forestry

**FOREST MANAGEMENT PLAN FOR THE OHEPI
NILONGA COMMUNITY FOREST**

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LIST OF ABBREVIATIONS

FMC Forest Management Committee
DoF Directorate of Forestry

Executive summary

The Ohepi Niilonga Community Forest is located in the eastern part of the Ondongwa Traditional Authority in Oshikoto Region. The size of the forest is 5,180 ha. The objective is to reserve Ohepi Niilonga Forest as a community forest. The initiative was taken during the traditional leader's workshop for Oshikoto Region held at Punyu Hotel in Ondongwa on the 14th of January 1998.

The Directorate of Forestry began working in Ohepi Niilonga community in early 1998. Forestry extension officers were involved in several community mobilization campaigns in order to implement the proposed forest as a community forest.

A community representative body, known as Forest Management Committee (FMC) were elected and offered training in community organization. The community drafted a constitution of which the committee members used as a guideline to carry out their activities. It is against this background that an executive committee comprising of 15 members from all seven villages involved was formed.

Forest inventory was carried out covering an area of 5160 ha of the total area. A total number of 18 species were identified during inventory with a total number of 308-stem ha^{-1} . The most dominant species found were *Terminalia sericea* with 114 stems ha^{-1} , *Combretum collinum* with 103 stems ha^{-1} , *Burkea africana* with 27 stems ha^{-1} , *Ochna pulchra* with 17 stems ha^{-1} and, *Combretum zeyheri* with 16 stems ha^{-1} . *Pterocarpus angolensis*, *Acacia erioloba* and, *Dichrostachys cinerea* were also recorded as valuable species.

An average of volume of 28 m^3 per ha was recorded where bringing the total volume of the area is 145,600 m^3 . *Burkea africana* and *Pterocarpus angolensis* has got the highest volume of 8 and 7.9 m^3 per ha respectively. The next highest volume is with *Combretum collinum* and *Terminalia sericea*, 4.9 and 4.1 $\text{m}^3 \text{ha}^{-1}$ respectively.

The four tree species, which can sustainably be harvested, are *Burkea africana*, *Combretum collinum*, *Terminalia sericea* and *Pterocarpus angolensis*. There is potential to harvest of 2500 stems per annum. The estimate for current use in the area is about 1,800 stems per year. In total the community can consumed about 540 tones of fuel wood per annum. It is estimated that about 101,185 dead trees would be harvested annually as firewood to cater for domestic use in the respective community.

There are about four institutions, which are collaborating in the community forest area; Ministry of Local Government and Housing, Ministry of Agriculture, Water and Rural Development, Ministry of Women and Children Affairs, and Ministry of Environment and Tourism.

The management plan has a planning horizon of 10 years, so that the community will be able to better respond to any changes that might affect the sustainability of their plans.

The forest management will implement the management plan while Directorate of Forestry provides technical assistance or play a role of facilitator.

1. Introduction

The establishment of Ohepi Niilonga community forest was proposed by the Ondonga Traditional Authority in January 1998. The area has been used for grazing by the senior Traditional Authority leaders and entire Ondonga community. Therefore the forest will be maintained and not used as a settlement area. Ohepi community falls under the jurisdiction of the Ondonga Traditional Authority. The establishment of community forest is in line with the Forest Bill of 1998.

Ohepi Niilonga Community Forest belongs to the people living in and around the community forest area. These are seven villages namely; *Oshilimeya*; *Omeyantalala*; *Onamatendende*, *Omutala*, *Ohashimbaba*, *Onamakwilikwa*, and *Oluundje* with a total of 168 homesteads (farms) and average of 10 persons per homestead.

The management plan period is from October 2003 to October 2011. **The management plan will have a relatively short planning horizon (2 years)** so that the community will be able to better respond to any changes. The Forest Management Committee for the Community Forest will monitor the progress of implementation.

The following institutions are engaged in different activities in and around the Ohepi Niilonga Community Forest: Ministry of Local Government and Housing, through the Councilors for Okankolo and Eengodhi Constituencies for the facilitation role in the general development of the area. Ministry of Agriculture, Water and Rural Development, through Onyuulaye and Onayena Rural Development Centre, provides extension services to the Ohepi Niilonga community. Ministry of Women and Children Affairs, through the Ondangwa Community Development center, supports community projects such as kindergarten within the community forest area.

DoF conducted the participatory resource assessment in the Ohepi Niilonga Community Forest area in April 2001. In July 2002, forest inventory was carried out at Ohepi Niilonga Community Forest, covering 5,160 ha of the total area. The Directorate of Forestry will facilitate the implementation of the management plan.

2. Ownership and the management of the area

Ohepi Niilonga Community Forest belongs to the people living in and around the community forest area. The Forest Management Committee consists of 15 members comprised of two women and four men; chairperson and deputy, secretary and deputy, treasurer and deputy, nine advisors. There is sub-committee in each of the three villages to take care of other projects that are undertaken within the community forest such as selling of firewood, carpentry project and carving.

3. General description of the area

3.1 Location

Ohepi niilonga Community Forest is located 17°57'30"S and 16°45'55"E, 35 km east of Okankolo growth point and 9 km west of Onkumbula growth point in Oshikoto Region.

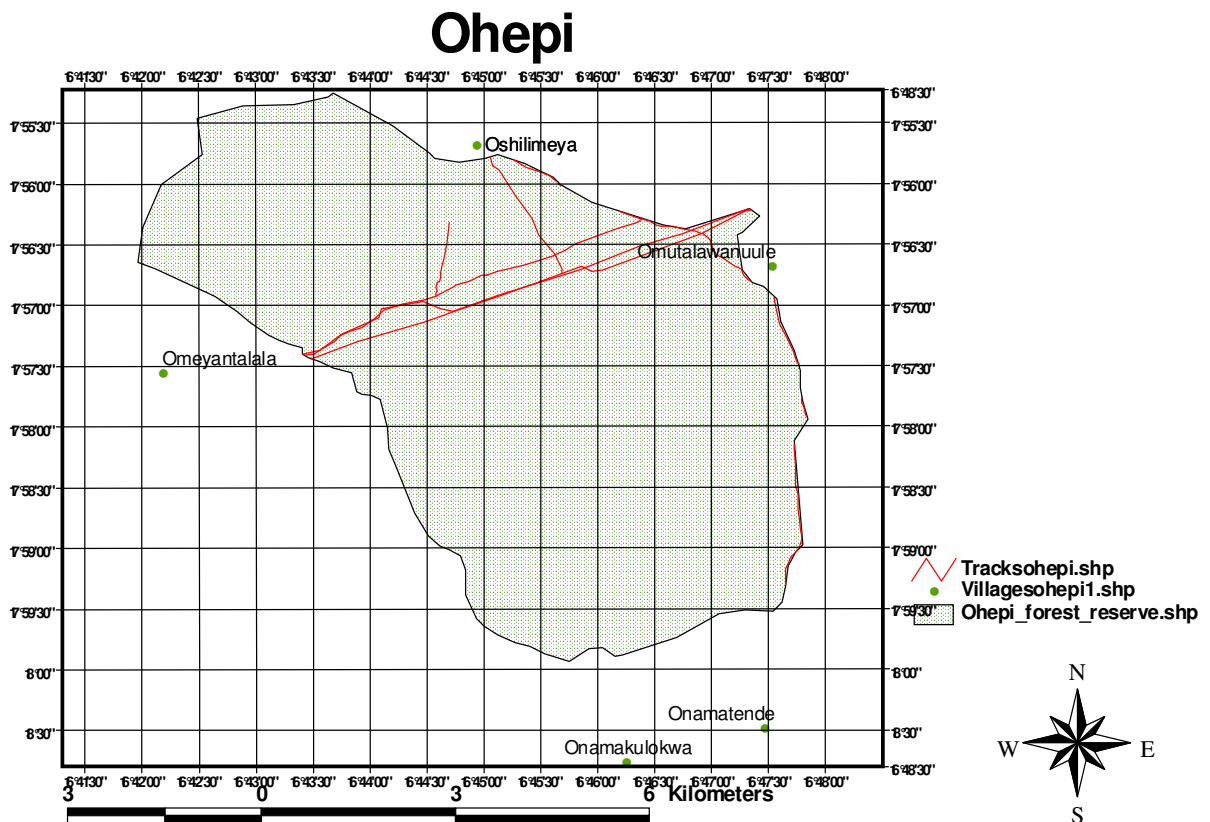


Figure 1. Map showing the location of Ohepi Niilonga Community Forest.

3.2 Physiography (climate, soils, temperature)

3.2.1 Soils

The Ohepi Niilonga Community Forest is generally a slightly elevated terrace with scattered numbers of clay pans and ondombe. Deep Kalahari sands dominate the area. The soils in the scattered clay pans, interdune valleys and fossil drainage channels with clay sands and therefore favoured for crop production. The oshanas, clay pans and

ondombe usually start filling with rainwater in December, and the oshanas usually are completely dry by July-August.

3.2.2 Rainfall

An average rainfall is about 390 mm per annum (see figure 2). North - Central Namibia has two rain seasons: the dry season lasting from May to October; and 'rainy', season with occasional rainfall, between November and April.

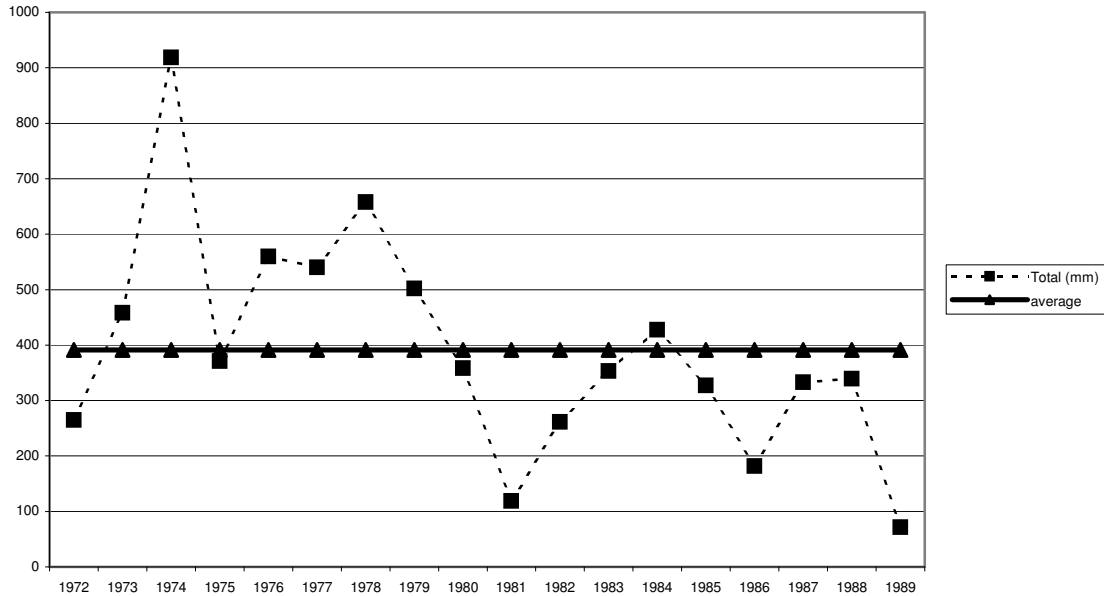


Figure 2. Total and average annual rainfall (1972-1989) for Ondangwa (Source: Namibia Meteorological Service, 2003)

The average rainfall is sitting around 400 mm per year. After 1990 the total annual rainfall has been below the average (see fig.2).

3.2.3 Temperature

The monthly mean temperature at Ondangwa ranges from 26°C in November to 16°C in July. The coolest period is July to August with night temperatures as low as 7°C and day temperatures as high as 27°C or more. Frost is common. The hottest period is from October to December, and maximum day temperature may reach 40°C. Evaporation is very high throughout the year but is extreme during the months of the first rains.

4. Forest resources

4.1 Inventory results

4.2 Trees

A total number of 18 species were identified during inventory with a total number of 308 stem ha⁻¹. The most frequent species is *Terminalia sericea* with 114, *Combretum collinum* with 103, *Burkea africana* with 27, *Ochna pulchra* with 17 and, *Combretum zeyheri* with 16 stems ha⁻¹ respectively. Other species recorded during inventory were e.g. *Pterocarpus angolensis*, *Acacia erioloba* and *Dichrostachys cinerea*.

4.2.1 Live trees

Table 1. Diameter distribution of stems by species, total nr of trees

Species	5-15	15-25	25-35	35-45	45-55	55-65	65-75	75-85	85-95	Total	% of total
<i>Acacia ataxacantha</i>	2									2	0.1
<i>Acacia erioloba</i>	5			1	1					7	0.4
<i>Acacia fleckii</i>	7									7	0.5
<i>Albizia anthelmintica</i>	4	8								11	0.7
<i>Baphia massaiensis</i>	2									2	0.1
<i>Boscia albitrunca</i>		2								2	0.1
<i>Burkea africana</i>	69	37	26	7						141	8.9
<i>Combretum collinum</i>	467	59	3							529	33.4
<i>Combretum psidioides (psidioides)</i>	29									29	1.8
<i>Combretum zeyheri</i>	82									82	5.2
<i>Croton gratissimus</i>	20									20	1.3
<i>Dichrostachys cinerea (Setulosa)</i>	31									31	2.0
<i>Erythrophleum africanum</i>	5	2	2							10	0.6
<i>Lonchocarpus nelsii</i>	5									5	0.3
<i>Ochna pulchra</i>	82	6								88	5.6
<i>Pterocarpus angolensis</i>	5	9	1	5	4	3	1	1		31	1.9
<i>Terminalia sericea</i>	547	38	3							589	37.1
Total	1365	161	36	14	5	3	1	1		1586	100.0

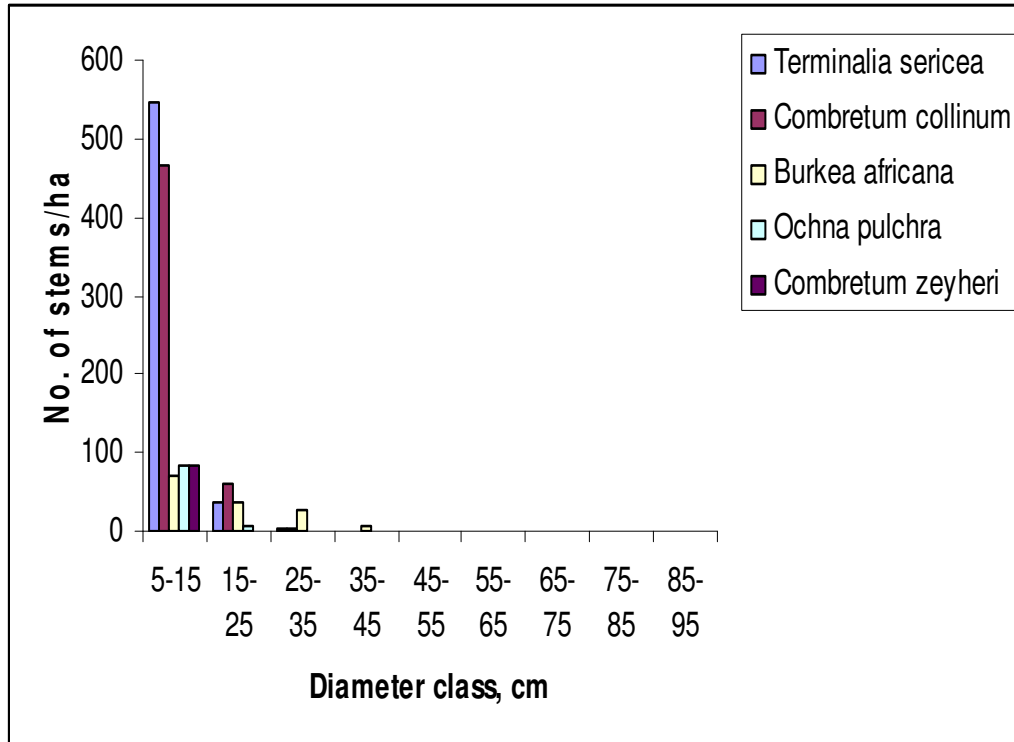


Figure 3. Diameter distribution of stems of the five most frequent tree species.

Figure 3 illustrated that *Terminalia sericea* and *Combretum collinum* have most of the stems in the small diameter class (5-15 cm). A few *Burkea africana* trees were found having a dbh more than 45cm. However, there is a potential for harvesting some poles from *Terminalia sericea* and *combretum collinum* in the diameter class of 5-15 cm without risking the future of the forest.

The volume of all tree species is 28 m³ per ha. *Burkea africana* and *Pterocarpus angolensis* has got the highest volume of 8 and 7.9 m³ per ha respectively. The next highest volume is with *Combretum collinum* and *Terminalia sericea*, 4.9 and 4.1m³ per hectare respectively. The total area volume is 145,600 m³.

4.2.2 Dead trees

The total number of dead trees for all species found in the inventory area were 20 trees per ha and a total of 101,185 trees representing an estimated volume of 17,355 m³ in the whole area. The most frequent dead trees found are *Terminalia sericea*, *Combretum collinum*, *Burkea africana*, and *Pterocarpus angolensis*.

4.2.3 Regeneration of trees and shrub layer

A total of 1,256 tree saplings per hectare were found in Ohepi niilonga inventory area. The regeneration of the common big trees like *Terminalia sericea* and *Combretum collinum* is very good. Total of 9 shrub species was recorded in the inventory area.

Table 2. Number of tree seedlings per hectare.

Species	Nr/ha
<i>Grewia retinervis</i>	124
<i>Ozoroa schinzii</i>	35
<i>Grewia flava</i>	33
<i>Rhigoszum brevispinosum</i>	25
<i>Grewia bicolor</i>	17
<i>Rhus tenuinervis</i>	9
<i>Mundulea sericea</i>	6
<i>Vangueria infausta</i>	1

5. Wildlife

The community wants to preserve the bio-diversity of the area. However, the Ohepi niilonga Community Forest has only few small wildlife species and birds. The most common animals are *Ictonyx striatus* (striped polecat), *Canis mesomelas* (Black-backed jackal), *Galerella sanguinea* (slender mongoose) steenbok, *Sylvicapra grimmia* (common duiker), *Xerus inauris* (ground squirrel), and *suricata suricata* (suricate). Birds such as red billed francolin, red-crested korhaanor and black-billed korhaan. Due to the fact that the area is very small, about 5,180 ha surrounded by a large area, whatever is done in the community forest area will not necessarily affect wildlife so much in the larger area. Therefore, it is proposed that only following management interactions would be applied to promote wildlife; installation of water points inside the forest, exclusion of illegal hunting and control of grazing inside the forest.

6. Current use of forest resources

6.1 Poles

According to the Ohepi Niilonga community members, people living in the seven villages are not extracting woody products from within the proposed community forest area. There are 168 homesteads in all seven villages in and around Ohepi Niilonga Community Forests. The use of fuel wood comes from dead wood and branches. According to the interviews conducted with the community, on averages of about 165 poles per households are needed to renovate a house every fourth year. A conservative estimate is made that 2 poles can be obtained from one tree. This implies that about 3,700 poles (1,850 stems) are used for renovation annually. The estimate is below the sustained yields of 6,500 poles (3,270 trees) predicted in Geldenhuys (2002). This sustained yield prediction was done considering those are found in the area. Therefore the usage should not only concentrate on preferred species otherwise there will not be a sustainable yield for the preferred species.

6.2 Fuelwood

The utilization of fuelwood varies from season to season, and the quantity used is determined by the quality of wood. During summer one headload is used per day per household. While at winter period two headloads are used per household daily. One headload consists of 17-20 sticks (Geldenhuys et al., 2002). Preferably local communities use, *Terminalia prunoides*, *Dichrostachys cinerea*, and *Combretum collinum* for fuelwood. About 10% of the dead wood can be harvested annually, for a planning cycle of 10 years. This is equivalent to 10,118 dead trees be harvested annually.

A normal family (seven members) consumes one bundle with weight of 10.5 kg per day of fuel wood (Angula, 2000). This translates in 3800 kg per household per annum (142 households). Their annual consumption is 540 tones of fuel wood. There are 20 dead trees per hectare and a total of 101,185 dead trees in the community forest area (Kanime, 2002). It is difficult to predict sustained yield for fuel wood because annual deadwood biomass is difficult to determine accurately. Hence, is cautiously proposed that 10% of total dead trees being harvested for fuel wood annual for the planning cycle of 10 years. This will result in 10,118 dead trees being harvesting for fuel wood annually.

6.3 Non-wood Forest Products

The information on the quantities of non-woody forest products utilized by the communities is very patchy, although the communities use the resources year round. Therefore, no prediction was made on sustain yields for these products. However, fruits are normally collected for own consumption and income generation. A variety of wild fruit tree species such as *Vangueria infausta*, *Ziziphus mucronata*, *Grewia flavescens* and many others are used to brew dry gin (ombike).

Moreover, thatching grass is found mostly at waterpans inside the forest area. The thatching grass is readily harvested from June onwards. The availability of thatch-grass depends on the rainfall received in a year.

It is increasingly an important issue to define the community forest area. Generally, community members do not utilize products from the smaller core area (inventoried area). However, they are using resources from the larger area as whole. According Geldenhuys (2002), communities collect forest resources (woody and non-woody) in a radius of one kilometer, which means in most cases that it is outside the smaller core area. Thus, it is easy to sustainably manage the core area than the larger area as whole. Therefore, it is very important that the DoF staff and Forest Management Committee will come together and address this issue, so that the larger area as whole will be managed sustainably.

7. Forest management objectives

The Ohepi Niilonga community has set the objectives that serve as the basis for management and utilization of forest resources.

1. To sustainable manage and use forest for grazing of livestock.
2. To conserve trees and plants for medicinal purposes.
3. To protect the forest resources against wild fires.
4. To maintain the biological diversity of the forests.
5. To generate income for the community by selling wood and non-wood products from forest.

8. Sustained yield estimates for woody forest resources

The calculation is based on the growth of the trees and the movement of stems from small diameter classes into bigger diameter classes. The main assumption in the calculation is that the diameter distribution during the ten years period of implementation of the plan will remain constant. This implies that the structure of forest could remain the same in the future. A mortality rate of 10 % has been used in the calculation. In practice, a portion of these dead trees can be harvested. However, in the calculation dead trees has not been taken into account.

According to the inventory report, only three tree species, *Combretum collinum*, *Terminalia sericea* and *Burkea Africana*, that can be utilized for renovation of homesteads (according to the by-laws no new homesteads could be constructed) and firewood. *Pterocarpus agolensis* can be harvested for commercial timber. The sustained yields of these four species are indicated below.

Table 3. Calculation of sustainable yield for *Combretum collinum*

Diameter class	# of stems/ha	# of stems/ha after 10 years	Total # of trees in area	Annual allowable cut
25-35	1	6	25,800	2,500
Total				2,500

Table 3 shows allowable harvesting of *Combretum collinum*. Estimates indicated that for *Combretum collinum*, 2,500 stems can be harvested per year in diameter class 25-35cm. There are few trees in the diameter class above 35 cm, therefore harvesting should concentrate more on the middle diameter class in order maintain a diversity of age classes.

Table 4. Calculation of sustainable yield for *Terminalia sericea*

Diameter class	# of stems/ha	# of stems/ha after 10 years	Total # of trees in area	Annual allowable cut
15-25	7	11	20,640	2,064
25-35	1	6	25,800	2,580
Total				4,644

The calculation in table 4 results in annual harvesting of *Terminalia sericea* is 4,644 trees in both diameter classes of 15-25 and 25-35 cm. It is more sustainable to concentrate harvesting of bigger diameter class and conserve smaller diameter trees.

Table 5. Calculation of sustainable yield for *Burkea Africana*

Diameter class	2002 # of stems/ha	2012 # of stems/ha after 10 years	Total # of trees in area	Annual allowable cut
5-15	13	16	15,480	1,548
15-25	7	11	20,640	2,064
25-35	5	6	5,160	516
Total				4,128

Table 5 shows that the allowable cut for *Burkea africana* is 4,128 stems per year for both diameter classes. There is potential to harvest 4,128 stems per annum. The estimate for current use in the area is about 1,800 stems per year.

Table 6. Calculation of sustainable yield for *Pterocarpus angolensis*

Diameter class	2002 # of stems/ha	2012 # of stems/ha after 10 years	Total # of trees in area	Annual allowable cut
5-15	1	16	77,400	7,740
15-25	2	11	46,440	4,644
25-35	0.2	6	29,928	2,992.8
Total				15,376.8

The calculation in table 6 results in annual harvesting of *Pterocarpus angolensis* to be 7,636 trees in both diameter classes of 5-15 and 25-35 cm. The harvesting should concentrate more on the 25-35 cm diameter class to maintain a diversity of age classes and obtain the best quality timber as required by furniture industry.

9. Management Approach

9.1 Grazing

Grazing is based on the availability of grass. Cattle for the community are grazed in the forest throughout the year. Outsiders have to ask permission from the headman to graze livestock in the forest from July to November. Normally the cattle herders are not allowed to set up cattle posts but join village members, whom they know in the community where they want to graze their livestock.

9.2 Firewood extraction

The community has realized a potential to sell firewood, due to the abundance of dead wood in the forest. They intend to collect dead wood from the forest and sell, when ever markets are available. Village based committees were established to coordinate the collection and selling of firewood. This venture is well in progress; however the community is facing problems of transport to haul the product to the marketing point. Firewood collection for sale should be managed to ensure continuous in supply.

9.3 Woodcarvings

The community is embarking on wood carving project. This is a well-established income generating activity for the Ohepi Niilonga community. Some of the products include wooden spoons, pestles, mortars, cases planks and many more. Annually they take part in the Ongwediva Annual Trade Fair to sell their products. Dead wood from *Burkea africana*, *Acacia erioloba* and *Commiphora* species are used.

9.4 Tree planting / regeneration

Tree planting is done through live fencing and the establishment of woodlots. The planting of seedlings is done at the beginning of the rain season to enable the seedlings to become established before the end of the rain season. The protection of planted trees should be rendered to avoid browsing by animals and small rodents to destroy seedlings. The most preferred species for planting are *Acacia nilotica*, *Acacia erioloba*, *Opuntia*, *Dichrostachys cinerea* and *Combretum imberbe*. Fruit tree planting at homesteads level will be given priority before planting will be carried out in the community forest.

9.5 Silvicultural practices

The forest management committee wants to close off some areas in the forest where some species such as *Terminalia sericea* and *Burkea africana* are coppicing to encourage tree growth. They want to encourage and practice selective harvesting of poles in the forest in order to maintain continuous forest covers as opposite to clearfeling.

9.6 Fire management

The community by-laws prohibit setting fires in the forest. The by-laws make provision for punishing anyone found guilty for causing fires in the forest. Every community member requested to participate in fires extinguishing, whenever fire occurs. However, all mechanisms such as construction of cut lines and fire management committee establishment is considered thoroughly. These will be implemented as soon as the DoF staff rendered their logistical and technical advice to the community.

9.7 Commercial timber for furniture

Carpentry activities such as making beds, doors and chairs are perceived by the community of Ohepi to be of high potential. During resource assessment meetings the carpenters agreed to establish two carpentry workshops at Oshilimeya and Onamatende villages, where most of dead wood of *Pterocarpus angolensis*. Agreement occurs was made to obtain a piece of land at growth points where road and electricity infrastructures are available like Ontana and Onkumbula growth point. Inventory results, Kiaat was recorded 0.8 m³ per ha of dead wood and about 3,892 m³ in the whole area. Such wood could be exploited for small-scale commercial timber enterprises. Five trained people in woodworking have initiated fund raising in June 2001 to purchase manual carpentry tools for the Tulongeni carpentry project. The current practice of turning a log into a plank with an axe or machete is very wasteful; therefore, appropriate harvesting techniques need to be employed like pit sawing or modern saw machines.

10. Expected revenue

The average price for a bundle of fuelwood, which weighs 20 kg, is N\$5.00. Annually it is estimated that 54000 kg of fuel wood (10% of own consumption) is harvested only for sales. This translates into 2700 bundles of fuelwood being harvested by all households annually. This will result in the total annual revenue of N\$13,500. Whether, selling of the poles is financially feasible, depends on the cost of labour required for collecting firewood and transporting it to the markets. These costs have not been included in the transportation calculation.

11. Harvesting plan

Yield regulation has to be done for the whole forest, so that harvesting can be proposed. The size of the area proposed for harvesting is 5180 hectares. There is only one visible cutline which goes through the community forest. Hence, it is difficult to divide the forest into blocks. Therefore, it is proposed that the forest management committee members should see to it that the community members selectively cut a given annual amount of poles in a radius of 1-2 kilometer from their homesteads. The aim is to keep the annual harvesting yield at a reasonably constant level.

12. Selection of trees

In practice, the selection of trees will differ according to diameter class and species. Some rule of thumb is given below to assist with the selection of trees.

Combretum collinum

- No *Combretum* trees with dbh less than 15 cm and greater than 35 cm should be cut (table 2).
- All sizes between 15 and 35 cm should be selectively harvested.
- The distance of 100 m should be kept between trees in diameter class 15-25 cm.

- Similarly, distance of 200 m should be kept between trees in diameter class 25-35 cm.

Burkea africana

- No *Burkea* trees with dbh less than 5 cm and greater than 45 cm should be cut (table 4).
- All sizes between 5 and 45 cm should be selectively harvested.
- The distance of 90 m should be kept between trees in diameter class 5-15 cm.
- Similarly, distance of 560 m should be kept between trees in diameter class 35-45 cm.

Terminalia sericea

- No *Terminalia* trees with dbh less than 5 cm and greater than 25 cm should be cut (table 3).
- All sizes between 5 and 25 cm should be selectively harvested.
- The distance of 210 m should be kept between trees in diameter class 5-15 cm.
- Similarly, distance of 130 m should be kept between trees in diameter class 15-25 cm.

Pterocapus angolensis (kiaat)

- ◆ No standing fresh Kiaat trees with dbh less than 35 cm should be cut.
- ◆ All saw-able dead kiaat should be extracted for furniture.

13. Implementation of management plan

Regarding the implementation of the management plan the community has agreed to the following points.

- The entire Executive members and the committee should supervise the implementation of the management plan.
- According to the community members the management plan will be implemented by March 2004.
- Forest Management Committee (FMC) feels that there is a need of receiving continuous technical assistance from DoF staff to the community of Ohepi, whenever is required.
- Activities of harvesting of firewood and poles in the community forest should be monitored by members of FMC and guided by the DoF staff.
- DoF staff should train members of the FMCs in all technical aspects, which is needed to carry out effective management of forest resources.
- The DoF staff should make sure that the FMCs and the communities who are responsible for the implementation of the management plan are well-equipped with all necessary skills which will ensure sustainable management of forest.
- The committee will be entirely responsible for the actual implementation of activities on the ground.

14. Collaboration

Ohepi Niilonga Community Forest Management Committee shall continue to collaborate with DoF. The community requires assistance in preparation of annual work plan and implementation of it. However, the committee emphasized that DoF staff will only play advisory and supervisory in these regards.

15. Monitoring

All resource use from the community forest should be monitored closely. Each potential user must apply for the use of specific resources for specific products through the FMC. The amount allocated should be recorded as part of the permit system. The users should also record the amounts harvested. This information should be provided to the Forest Management Committee. Zones should be indicated in the areas where the resources have been harvested. Monitoring will be carried out to detect changes happened in the forest such as illegal harvesting, damage by wildfires, pests, etc. This would be done by Honorary foresters during their patrol in the community forest should do this.

16. Reference

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Annex 1

Table 3. Proposed management prescriptions

	Activities					
	Firewood collection	Tree planting	Grazing	Income generating projects	Fire management	Fruit harvesting
Months						
January	Harvesting Searching for market Selling Administering finance	Nursery establishment Pot filling and sowing, transplanting, watering,	Grazing	Carpentry Carving		
February	Harvesting Marketing	Watering	Grazing	Carving Carpentry		
March	Harvesting Marketing	Watering	Grazing	Carving Carpentry		
April	Harvesting Marketing	Watering	Grazing	Carving		
May	Harvesting Marketing	Seed collection Selling	Grazing	Carving carpentry		Harvesting and selling
June	Harvesting Marketing	Watering	Grazing	Carving Basket making		Harvesting brewing Selling
July	Harvesting Marketing	Watering	Grazing	Carving, carpentry	Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling	Harvesting and selling
August	Harvesting Marketing	Watering	Grazing	Carving, carpentry	Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling	Harvesting brewing Selling

September	Harvesting Marketing	Watering	Grazing	Carving,	Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling	Brewing Selling
October	Harvesting Marketing	Watering Planting in homestead, live fencing Selling	Grazing	Carving, selling	Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling	Brewing Selling
November	Harvesting Marketing	Watering Selling	Grazing	Carving, selling	Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling	Brewing Selling
December	Harvesting Marketing	Watering Selling	Grazing	Carving, selling	Identify areas for clearing cut lines Training Formulation of FMU, Construction of cut lines, patrolling	Brewing Selling