

**ARABUKO-SOKOKE FOREST MANAGEMENT AND CONSERVATION
PROJECT**

STRATEGIC FOREST MANAGEMENT PLAN

COMMERCIAL USE OF FOREST

**Proceedings of Commercial use of Forest planning Workshop, Held at
Gede Ruins on 4th May 2001.**



Compiled by

**Joram K. Kagombe
Forest Management Coordinator**

**Francis M. Muchiri
DFO Kilifi**

June 2001

Acknowledgments

This report is as a result of joint effort from the ASMT members and the participants of the workshop who were drawn from a cross-section of stakeholders including community members. We wish to thank all those who attended the workshop and contributed their ideas.

Special thanks go to the European Union through BirdLife International for providing the funds to support the workshop. We would like to thank the Project coordinator Dr. Ian Gordon for the support he has given to the development of the strategic forest management plan.

We would like to thank those who contributed information during the write up of the position paper. Mr. Ndirangu requires special mention in providing valuable information. The three foresters in the stations, Mr. Makworo (Sokoike), Mr. Mwamela (Jilore) and Mr. Mwangi (Gede) did provide useful information. Finally is to thank every people who has contributed in ideas, comments, and information and write up of these proceedings

Proceedings for Thematic Workshop on Commercial use of A.S.F held on 4th May 2001.

Facilitators: Mr. M.T.E. Mbuvi and Joram Kagombe

Position Paper presenter: Mr. Francis Muchiri, DFO Kilifi District

Introduction

In a departure from the other workshops, the deliberations were conducted in Kiswahili to ensure that the community members participate in the proceedings effectively.

1.0 Presentation of Strategic Forest Management Process, by J Kagombe

The process of development of Strategic Forest Management Plan (SFMP) was presented to the participants and the outcomes of the workshops that had taken place. The details of the presentation is provided as annex 1. Below is a summary of the main presentation

The SFMP plan for Arabuko-Sokoke Forest will be developed through a series of thematic workshops that will focus on specific thematic area. In each of the workshop, an officer familiar with the topic will prepare a position paper. The aim of the position paper is to review the past work/studies in that area, the current status and propose ways forward for discussion during the workshop. The aim is to build on the existing information and structures. The position paper is presented at the workshop to enable the participants acquire the basic information that will assist them in the deliberations.

The SFMP will be developed taking into consideration the emerging changing trends in forestry both locally and globally. Table 1 in annex 1 gives a summary of traditional forest management and the changing trends.

1.1 Steps in Development of SFMP

The management process has involved the following steps:

- 1.0 Visioning workshop held in September to agree on the common vision for the forest during the planning period
- 2.0 Draft strategic management objectives –goals that will guide management of the forest.
- 3.0 Indicative zonation to identify various user categories operating in the forest.
- 4.0 Identification of working principles that will guide in the preparation of SFMP
- 5.0 Identification of main issues affecting forest management. The main issues were grouped to form various thematic themes.
- 6.0 Stakeholder identification for each of the thematic area

- 7.0 Assessment of information requirement for each zone and possible sources of this information
- 8.0 Further information gathering to fill the gaps
- 9.0 Zoning workshop to propose the zones. This was done in November 2000.
- 10.0 Preparation of Position paper for each of the thematic area.
- 11.0 Thematic Workshops

- 11.1 Ecotourism and education - Held in **March 2001**
- 11.2 Problem Animal Control - Held in **March 2001**
- 11.3 Subsistence use - Held in **March 2001**
- 11.4 Biodiversity Conservation - Held in **March 2001**
- 11.5 Infrastructure - To take place in **May 2001**
- 11.6 Commercial use - To take place in **May 2001**
- 11.7 Illegal Activities - To take place in **May 2001**
- 11.8 Human resource Development - To take place in **May 2001**
- 11.9 Policy, Legal, and Environmental profile - To take place in **June 2001**
- 11.10 Research and Monitoring, and Approval - To be held in **June 2001**
- 11.11 Sustainability - To be held in **June 2001**
- 11.12 Crosscutting themes - To be held in **July**

11 Prepare management guidelines for each theme - To be done in each workshop

12 Summarise workshop proceedings

13 Consult key stakeholders

14 Draft management plan

15 Workshop to present the plan - Proposed for August 2001

16 Revision of the plan

17 Approval of the plan

1.3 Outcomes from workshops

The outcomes from the workshop that have already taken place are summarised below:

1.3.1 Zonation.

Arabuko-Sokoke Forest is divided into four main zones. These zones have been identified, discussed and agreed with a wide range of stakeholder groups and their representatives during thematic workshops.

ARABUKO-SOKOKE FOREST ZONES

1. Subsistence Zone

Forest areas lying closest to villages and most heavily used by village people for their subsistence forest product needs. Subdivided into:

Community Use sub-zone from where collection of a range of locally required forest products will be permitted

NTFP sub-zone from where a more limited range of products only can be utilised by local communities (particularly non-timber forest products).

2. Non-extractive Zone

Areas of forest lying furthest from villages and which are most important for biodiversity conservation. No extraction of forest products from this zone. Subdivided into:

Biodiversity conservation sub-zone consisting of the most sensitive and important biodiversity areas where there will be restricted access only for research and study purposes

Ecotourism sub-zone where greater access for ecotourism and awareness raising purposes will be permitted.

3. Commercial Zone

A very small zone consisting of the established plantations within the forest. These will continue to be managed for timber, pole and fuelwood production, but not extended.

4. Intervention Zone

An area lying entirely outside the forest boundary and consisting mostly of private land. Communities in this area will be supported in carrying out activities which give livelihood benefits as well as contributing to forest conservation.

1.3.2 Ecotourism and Education workshop output

The unique biodiversity of Arabuko-Sokoke is an important asset, which can be used for development of forest-based eco-tourism. This has potential to generate revenue from the forest in a non-destructive way and adds value to the forest resource. It also creates wider awareness of the forest, its importance, and the need for its conservation. Although eco-tourism is broadly compatible with biodiversity conservation, there is a need to clearly identify areas or zones within the forest where it can take place without any adverse impacts.

There has already been much activity in the development of eco-tourism at Arabuko-Sokoke, but there is still much under-utilised potential. For example, few hotels outside of Watamu have been involved in promoting the forest as a tourist attraction and more visitors from hotels in Malindi and Kalifi could be brought to the forest although tourist numbers to the area have generally declined in recent years. More promotional activity is still required to attract more visitors - particularly non-English speaking tourists, and further development of infrastructure and facilities within or adjacent to the forest are required to develop

it as a more attractive eco-tourist destination and create more opportunities for eco-tourism experiences.

As yet there is no mechanism in place for eco-tourism revenues to contribute directly to sustainable forest management and conservation. The amount raised from voluntary contributions has been small, and there is as yet no entry fee for the forest. Currently, most of the revenues from tourism activities go to local hotel and travel business with very little direct benefit to local people in forest adjacent villages.

In the longer-term, environmental education is the key to ensuring the future of Arabuko-Sokoke Forest. With better understanding and appreciation of its importance especially amongst local people, there will be less pressure in the future for excisions and more resistance to destructive developments. As with eco-tourism, a good start has been made in the development of environmental education, but further emphasis is still required to ensure that there is widespread and continuing understanding of the forest's importance.

Objective

To add value to the forest through revenue generation and improved awareness.

Strategies

- ❖ *INCREASE SUSTAINABLE ECO-TOURISM REVENUES*
- ❖ *IMPROVE LOCAL BENEFITS FROM ECOTOURISM*
- ❖ *FOCUS ON THE LONGER-TERM BENEFITS OF ENVIRONMENTAL EDUCATION*

1.3.3 Problem Animal Management outputs

Issues

Crop raiding by forest elephants (and also by baboons) causes considerable damage and occasionally loss of life in villages adjacent to the forest. Current policy does not allow problem animals to be culled, therefore it effectively places high value on wildlife (which is protected) whilst undervaluing crops and lives (which are lost). This is one of the main causes of antagonism by forest adjacent communities towards forest conservation and consequently it is difficult to enlist local support for forest protection whilst their livelihoods are being threatened in this way. Possible animal movement control mechanisms such as elephant

fences are prohibitively expensive - particularly when compared with the value of the crops being lost or damaged and their effectiveness in Arabuko-Sokokè has yet to be established.

Information and understanding about elephant movements and the carrying capacity of the forest to support this population are inadequate although the situation is known to be dynamic. For example, following the high rainfall associated with El Nino, there were considerably less elephant movements outside the forest as water sources within the forest were sufficient. At present, KWS takes the sole responsibility for patrolling and for tackling elephant raids and is severely limited by the inadequate infrastructure, personnel and communications at their disposal.

Addressing the issue of problem animal management is a priority in this SFMP. Unless it can be tackled, there will be a continuing lack of local support for forest conservation, and increasing pressures for excisions and conversion to agriculture.

OBJECTIVE

To reduce and mitigate damage caused by wildlife in forest adjacent villages whilst maintaining the biodiversity conservation importance of the forest.

STRATEGIES and actions

- ❖ **CONTROL OF ANIMAL MOVEMENT**
- ❖ **IMPROVE EFFECTIVENESS OF PATROLLING**
- ❖ **REDUCE IMPACT OF ANIMAL DAMAGE**

1.3.4 Subsistence use of forest

Vision for subsistence use

The vision for Subsistence use is to Devise ways of improving FAC livelihood security and diversifies them through forest resources through substitution without compromising forest Biodiversity.

Issues

- ❖ Information gaps/Lack of adequate knowledge
- ❖ Lack of benefit sharing mechanism/unclear policy and institutional roles.
- ❖ Unsustainable-resource management/communication
- ❖ Inadequate means of communication

- ❖ Problem of defining zonation area and when a subsistence use turns to a commercial use
- ❖ Inadequate IGAs and GENDER issues leading POVERTY

1.3.5 Biodiversity conservation

Vision: Biodiversity of Arabuko-Sokoke Forest conserved and enhanced

Issues

- ❖ Information gaps/research needs
- ❖ Community awareness of Biodiversity
- ❖ Linking Research and Local community
- ❖ Forest degradation/loss of Biodiversity
- ❖ External threats/Interference
- ❖ Who should pay for conservation

1.4 : What to do with workshop outputs

The proceedings for each workshop will be printed for circulation to participants to get their comments

The final workshop proceedings to be produced as a separate report

Extracts from the proceedings to be used to summarise issues, strategies and actions in the main SFMP document

The proceedings of the workshop and the position paper will be used to prepare profile information in various topics in the SFMP. Profiles will appear as annexes to the plan. The profiles to be included are;

- ❖ **Policy and Legal Profile**
- ❖ **Institutional Profile**
- ❖ **Human Resources Profile**
- ❖ **Biodiversity Profile**
- ❖ **Socio-economic Profile**
- ❖ **Forest Resource Profile**
- ❖ **Ecotourism Profile**
- ❖ **Economic Profile**
- ❖ **Environmental Profile**

Each workshop is expected to prepare guidelines principles that will be used in developing the operation plans.

1.5. Focus of Commercial use workshop

Review the current commercial uses of the forest, the trend of changing subsistence use to commercial use, the supply/demand scenario of various products, how to ensure sustainable utilization of products from the forest.

Review the current status of forest plantations in the forest, the reason behind poor performance of plantations in the coast region and how to ensure that the available plantation area is used efficiently to supply wood products in a sustainable way that will reduce the pressure to natural forest. The products to be included in the commercial use are:

- ❖ Fuelwood
- ❖ Poles
- ❖ Timber harvesting in plantations
- ❖ Wood for carving
- ❖ Sale of seeds and seedlings
- ❖ Butterfly farming
- ❖ Herbs

2.0 Presentation of Discussion paper by on commercial use by Mr. F.Muchiri.

2.1 INTRODUCTION

Commercial utilization of forest products in ASF has not adequately addressed specific needs of the surrounding communities.

Strategic forest management planning has to address the needs of the people, vis a vis the available forests resources.

Therefore the objectives of this outline discussion on commercial forest use is to look into ways of how the surrounding communities can benefit through commercial use of forest products and at the same time not compromising forest biodiversity.

Commercial use of forest products should take into consideration

- The areas of operation – zoning.
- What products are available.
- Quantities
- Demand
- Existing Markets and Prices.
- Methods, costs and policies in exploitation of the forests resources.

2.2 THE COMMERCIAL ZONE:

- This should be a forest area with more than a given stocking level, and inventory data should be the guiding principle
- Commercial plantation– covers plantation areas only

Commercial use may be through:-

- Harvesting fuel wood (dead wood).

- Harvesting of poles – both in plantation and indigenous forest.
- Timber harvesting in plantations.
- Wood, for wood-carving.
- Sale of seed.
- Sale of seedlings.
- Butterfly farming.
- Herbs.
- Venom – possibility of snake park.

Commercial Forest Products

Fuel Wood:

Licensing

for fuel wood extraction has been on until late 1999 when the moratorium was effected on exploitation of forest products. Demand for fuel wood has greatly increased since then, as most of the surrounding population use fuel wood for 90% of their energy sources.

Table 1: Volume of fuel wood in different vegetation types

| PRODUCE | BRACHSTEGIA | | CYNOMETRA | | MIXED FOREST | |
|-----------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|
| | Vol. M ³ | Vol. (per ha) | Vol. M ³ | Vol. (per ha) | Vol. M ³ | Vol. (per ha) |
| Fuel wood | 5500 | 0.79 M ³ | 134400 | 0.62M ³ | 3800 | 0.66M ³ |

Source: KIFCON Inventory 1994

Pole wood:

Poles are commonly used for building local houses. Until 1999, harvesting of land poles in ASF was licenced. However, illegal acquisition of poles existed and is still an issue even today, due to high demand mainly in the rural area.

Highest yield are in the cynometra vegetation zone (estimates 7,300 M³ - source KIFCON 1994). The ban on cutting mangrove has lead to increase in demand of land poles.

Table 2: Tree species commonly use for poles.

| BOTANICAL NAME | LOCAL NAME |
|-------------------------|------------|
| Hymenea verrucosum | Mtandarusi |
| Manilkara sansibarensis | Mng'ambo |
| Manilkara sulcata | Mutsedzi |
| Brachyleana huilensis | Mhuhu |
| Casuarina | Mvinje |
| Mangrove poles | Mkoko |

Source: Ndirangu/Makworo 2000

Table 3: Market prices of different types of poles.

(a) Casuarina poles (Kilifi/Malindi middlemen) – most marketable size.

| SIZE DIAMETER (CM) | COST PER POLE (KSHS) |
|--------------------|----------------------|
| 5.0 | 250 – 300 |
| 7.5 | 350 |
| 10.0 | 400 |
| 15.0 | 5500 |

Source: per. Comm./Ndirangu

Table 3: Market prices of difference types of poles

(b) Market Prices for Mangrove and Land Poles.

| MANGROVE POLES | | LAND POLES SAME AS MANGROVE |
|----------------|-----------------|-----------------------------|
| Type | Cost Kshs./pole | Cost/Pole |
| Pau | 20 | 15 |
| Mazio | 40 | 30 |
| Boriti | 80 | 60 |
| Nguzo | 100 | 80 |
| Magogo | 300 | 100 |

These prices will sometime mainly depend on willing buyer willing seller basis.

Demand for species like Casuarina is relatively low. These poles are mostly used in construction of cottages and hotels. Supply is mainly from individual farms. Any commercial extraction of pole wood should take into consideration.

- Stocking levels and forest conditions
- Regeneration potential.

Supply of pole wood also is supplemented through plantations of fast growing species like Casuarina equisetifolia, with well laid down planting programs and harvesting plans.

2.3 PLANTATION DEVELOPMENT

Timber Harvesting

The existing plantations to the North and North-East (see map) comprise of both indigenous trees viz Muhuhu and exotics that include Araucaria, Gmelina arborea, Eucalyptus, and neem. With a total of 247.3 ha (Existing plantations) (See Form No.1) Total existing plantable area = 700 ha.

- Commercial logging activities can be carried out. Harvesting licences will be issued only where Sustainable felling plans are laid down. Note, most of the exotic plantations have reached rotation age.
- There is great need for various silvicultural operations to be carried out
- Extraction of fuel wood in a sustainable way may be permitted e.g. in Eucalyptus plantations (coppice management)
- Management of existing plantations should be reviewed to ensure all available areas are fully stocked.
- That maximum yields are obtained.
- That the most appropriate species are being grown.
- Species choice should be guided by reports on the success of existing trials by KEFRI.
- Neem plantations for wood carving, commercial seed production, and Casuarina equisetifolia for quality construction poles should be a component of any plantation program..
- Use of high quality seed will result in production of better quality trees.

Methods of plantation establishment

- Land clearing (or burning) and pitting – Is an expensive undertaking that will require intensive labour.
- Non- Residential cultivation (NRC) – (Shamba system). The piloting of NRC currently in place is one method that can successfully and economically be

used in establishing plantations. Proper management of this system is crucial. Guidelines and conditions for management of NRC Released December 2000 by Forestry Department should be followed.

2.4 Exploitation

Plantation exploitations (ASF) 1998:

Poles R/M - 1580

Poles M³ - 1480

Timber M³ - 54.22

Natural Forest Exploitation (ASF) 1998:

Poles R/M -7252

Fuel wood M³ -1250

MFL M³ -1300.6

The growing populations in urban areas, has greatly increased demand for construction timber, and also in the furniture industry. Plantation development should be aimed at meeting this demand.

WOOD FOR WOOD CARVING

Wood-carving has become a very successful income-generating activity in the coast region. Due to decreased availability of *Brachystegia huilensis*, there is need to encourage the carvers to use other equally good species.

Table 5: Commonly used wood carving trees:

| LOCAL NAME | BOTANICAL NAME | PRICES |
|--|--|---|
| Mhuhu Mtsedzi Mbirandu Mfunda | Brachyleana huilensis - Oldfieldia somalensis Cynometra webberi | Prices vary in different spp depending on size and availability. Wood sold in billets, or whole tree. |

Source:- per Commu. Muchiri - Kavoo 2001

- Plantation Development should address the wood carving industry. Neem is a good alternative tree species. Rotational age 36 years.
- Other species include, *Manginifera indica* and Mihuhu. *Brachyleana huillensis* trials have yielded poles of about 20 cm dbh after 30 years.

2.5 ISSUES

- Little emphasis has been put on plantation Development over years, which has resulted to back logs in silvicultural operations.
- Illegal removal of forest products from Arabuko Sokoke forest has threatened the existence of favoured tree species of *Brachyleana hulensis* and others.
- Forest valuation - What quantities are available for commercial use.
- Animal damage - Young to mature plantations face risk of animals damage.
- When do subsistence use become commercial - monthly fuel licensee (kuni groups) are now commonly seen selling head loads of fuel wood in hotels.

POSSIBILITIES SOLUTIONS:

- Reviewed management of existing plantations with an aim to planting fast growing tree species, and also introduction of indigenous tree species that are suitable for Forest products.
- Establishment of seed stands and increased seedlings production commensurate with planting programmes.
- Encourage and facilitate farm forestry with greater emphasis on technical and extension services.

- Research into regeneration mechanisms and dynamics
- Support participatory forest management and increase capacity to protect forests area and the resource within
- Revenues collected should be retained for forest conservation projects.
- Inventory data on current stocking levels. (C.K Kirinya and D.M. Mbithi Inventory Report.
- Emphasis on tree species that are least damaged by wildlife.

3.0 Questions/clarifications from the presentations and suggestions

- The burning question was when an originally subsistence use of forest becomes commercial. A specific example given was of women who sold their fuel wood to hotels, instead of using it in their homesteads. Kipepeo farming is another example of a income generating activity that has turned commercial
- Harvesting of timber depends on the stock in the forest. There are 453hectares of plantation backlogs in ASF Any commercial venture in the forest must start by establishing plantations in these areas. Saw millers can be approached to assist in tree planting to clear the backlogs.
- Commercial use of trees both in the forest and on farm depends on availability of quality seeds and seedlings. The method used in the past for distribution of seedlings through the provincial Administration ... was not the best. A suggestion was made for the seedlings to be distributed to individual farmers, and a follow up made to monitor survival of seedlings. The seedlings are only to be provided in areas with water problems where it is difficult to raise them. In other areas farmers or a group of farmer will be facilitated to develop a nursery where they can be raising seedlings for sale to the other farmers. Private nurseries to be given a chance, by not distributing free seedlings and thereby demoralizing farmers who had such nurseries The ultimate goal is to have a situation where farmers tree nurseries can sustain themselves through sale of seedlings.
- Seedling production in and around ASF is low. The DFOs informed members that the seedlings available for on-farm planting were 15000 and 53,000 seedlings available in Malindi and Kilifi respectively.. FD need to raise adequate seedlings for their use.
- KEFRI need to take a lead role in promotion of species that can be used in wood curving
- KEFRI need to take a lead role in promoting use of quality seeds. Mechanisms for control of seed quality need to be worked out
- An assurance was made by the ASFMT that seed distribution and monitoring was being strengthened. This would be dealt with through PFM, DIFA\AFA and FADA.
- Members felt that no more sites should be opened for plantations. The emphasis will be to improve the performance in within the existing plantation areas. In the past little emphasis has been put on plantation forest in the Coast region.
- Animal damage is one major contributor to failure in plantations in ASF. As we address the issue of game damage to crops in the farms, we have also to address how to keep the animals away from plantation areas. At present the animals have damaged the plantations including KEFRI experiments that contain seed stands and provenance trials
- There will be need to address the illegal removal of timber products from the forest

- Mr. Muniu informed the participants that the one month licence for firewood collection that allows an individual to collect one load per day was not banned. The DFOs were advised to resume issuance of these permits. The community were not getting this benefit from the forest. The DFOs agreed to resume issuing of firewood permits.
- There is urgent need for the economic resource value of the forest to be carried out. This will determine the total value of the forest and act as cushion against threats of the forest.
- A permanent source of water was needed to enable the community to have and maintain their own nurseries.
- It is important to determine the stocking of the forest through inventory. The KIFCON inventory in 1994 showed low levels of commercial timber in the forest. Kirriya and Mbithi conducted an inventory last year. The results of this inventory will show the current status of timber in the forest. Since we are developing a plan for 25 years, we cannot rule out timber harvesting from the forest within the plan period. However any harvesting must be guided by the inventory that will show the stock in the forest. Periodic inventory need to be conducted to show the change of stocking levels

4.0 Vision and strategies for achieving the vision

4.1 Vision

Optimal commercial consumptive use of forest resources, while emphasizing non-consumptive use of the forest ecosystem, ensuring that its Biodiversity value is not compromised and taking cognizance of other forest values.

4.2 Problems/constraints hindering the attainment of the vision

The participants brainstormed on the problems hindering the attainment of this vision through card system. The issues raised were grouped into four categories. Four discussion groups were formed to deliberate on the above and also suggest solutions to the hindrances.

Group 1: Research and Information gaps.

Group 2: Policy and politics/poverty and population.

Group 3: Awareness, relationship and extension.

Group 4: Proper Forest management and utilization.

4.3 Group presentations

4.3.1 Group 1: Research and Information gaps

Issues

1. Inadequate inventory and scientific information on the amount of the products existing in the forest.
 - Commercial timber species
 - Picnic site/View point (camping/tourist attraction sites.)
 - Potential species.
2. Inadequate participation of the community members in research and information gathering/dissemination.

Strategies/solutions

1. Carry out/conduct intensive inventory and research on the different forest products of commercial value including those that used to exist, the existing and others that might exist and are of commercial importance.
2. Carry out need driven research to fill up the information gaps identified by the managers
3. Involve the community members in research, information gathering and dissemination.

4.3.2 Group 2: Policy and Politics

Issues and strategy in Poverty and Population

1. Existing law governing resource use is inadequate to achieve the vision
 - The enactment of the proposed new Forest policy and legislation will address these issues.
 - Mechanism should be put in place for reviewing from time to time according to the needs and realities.
2. Lack of goodwill and devotion from all/some Stakeholders.
 - Clear information on forest values should be brought to the attention of all Stakeholders e.g. awareness creation through training, barazas, and discussions.
4. Political interference/other interested groups
 - Make the politicians understand the values of the forest and its proper use.
 - Make laws, which will deter interference.
5. Population pressure and poverty in forest adjacent areas. (FAC)
 - Educate the FAC and Others on the dangers of population explosion.
 - Promote and diversify income generating activities within/outside the forest e.g. beekeeping, butterfly farming, commercial raising of seedlings, commercial tree farming etc.
 - Promotion of improved agriculture e.g. agro-forestry, agro-silvipastoral culture and soil fertility programs
 - Using community groups to enhance the capacity of sustainable forest utilization through participatory forest management approaches.
6. Illegal removal of forest products
 - Forest patrolling to be enhanced and intensified.
 - Promotion of deterrent law to those involved in illegal cutting of wood
 - Propose empowerment of the community in forest protection.
 - Propose severe and immediate disciplinary action to Officers who do not carry out their duties as is required of them.
7. Limited forest area.
 - Encourage on-farm tree farming of fast growing tree species.
 - Promote use of affordable alternative source of energy.
 - Promotion of efficient utilization of forest products.

4.3.3 Group 3: Awareness, working relationships and extension

Issues

1. A weak forest extension service.
2. Perceived low value of the forest by the community.
3. Inadequate awareness on Biodiversity value of the forest by the public.
4. Poor co-operation between the Stakeholders.

5. Inadequate financial support for the forest.
6. Low usage of non-consumptive use in A.S.F.

Strategies

1. (a) Train pluralism, extension, diversification Officers and facilitate them e.g. proper training. The extension officers should be able to give the farmers a full package to allow him make informed decision.
(b) Develop a forest extension plan for Kilifi and Malindi district.
2. (a) Develop benefits sharing formula between communities/other stakeholders and the government.
(b) Initiate more income generating activities and enhance the existing ones to the surrounding communities e.g. Kipepeo farming, poultry farming e.c.
(c) Introduce PFM all over the forest.
3. (a) Carry out a thorough joint research and study and have the information available to the proposed community resource centers.
(b) Create awareness forums to the surrounding communities.
4. (a) Create consultative Stakeholder forums at appropriate intervals with clear guidelines, which will be legally recognized.
(b) Have in place the PFM agreements with all registered forestry association/s
5. (a) Lobby for funding from G.O.K, NGO, Donors and private sector.
(b) Retention of part of revenue generated from A.S.F to assist in forest operations.
6. (a) Commercialize Eco-tourism.
(b) More research on other non-consumptive uses of the forest.

4.3.4 Group 4: Proper Forest Management and utilization

Issues and strategies

1. Insufficient alternatives to forest products.
 - Promote alternative tree species for forest products e.g. coconut shells as fuel wood, Neem for timber and wood curving.
2. Insufficient supply of quality seeds and seedlings.
 - Train communities in suitable seed collection and treatment methods.
 - Train farmers in nursery establishment and management.
 - Establish seed quality control measures
 - Decentralizing selling.
3. Lack of involvement of all Stakeholders
 - Enhance P.F.M. strategies
 - Establish ASF forum where various stakeholders can express their opinion
4. Poor marketing and pricing of forest products.
 - Provide adequate information on pricing and marketing of forest products.
 - FD to review prices of products to make them competitive with farmers
5. Lack of efficient monitoring of extraction from A.S.F
 - Enhance monitoring skills
 - Educate communities on sustainable harvesting.
6. Problem Animals
 - Increase patrol.
 - Communities to be trained in animal handling techniques (e.g. thunderflash etc)
 - Fence off severe problem areas (in all area zones)
 - Develop less palatable species.
7. Poor plantations yields and backlog in plantation.
 - Carry out prescribed silvicultural operations at the right time.
 - Employ casual labor for reducing backlog in plantations
 - Proper choice of species
8. Unsustainable use of the forest
 - Develop a management plan
 - Provide means and ways towards sustainable use of the forest resources.

There was concern from the community that if all forest products were commercialized it would be difficult to sell things like palm wine which is extracted free from the forest.

5.0 Action Plan/points

1. Report of the Workshop to be out in one month's time. Action -Mr. Kagombe, Mbuvi and Muchiri
2. Circulate report for comments within two weeks. Action -Mr. Kagombe
3. Determine stocking density (inventory) of Commercial products in the forest. Action – Research and monitoring working group
4. Report on inventory conducted by Kiriya and Mbithi to be completed and availed to ASFMT members. Concern was raised that the inventory report has over delayed since it was originally expected in September last year. Dr. Gordon to pursue this issue.
5. Raise adequate seedlings for plantation establishment in 2002 FD. Action – DFOs and the three foresters in Gede, Jilore and Sokoke.
6. Improve seedling distribution to community members located in areas with water problem. Action -DFOs, Foresters, KEFRI, PFO and Project. FADA to be involved in distribution of seedlings.
7. Develop systems of controlling and improving quality of seeds and seedlings used inn and around ASF. Action – KEFRI, FD and community members
8. Investigating promising plantation species. Action - KEFRI
9. Work closely with community members in introducing new technologies, improving on the existing ones and identifying and promoting markets for tree products. Action – KEFRI, FD, NMK and community members
10. Inform the community about the resumption of issuance of Monthly Fuelwood Licence. Action - All Workshop participants..
11. Initiate Consultative Stakeholders meetings for A.S.F. Action – ASFMT. Mr. Kagombe to organize for the first meeting.
12. Assessment of non-consumptive uses/tourist attraction sites of the forest. Action – NMK, KWS, KEFRI, FD and community members

List of Participants

| | |
|-------------------------|--------------------------------|
| 1. Mr. W.Mwamela | Forester Jilore |
| 2. Mr. A. A Mamu | FADA Chairman |
| 3. Mr. Kahindi Dickson | Chief Ngerenya |
| 4. Mr. Hussein Kassim | Hafswa Sawmills Ltd |
| 5. Mr. Ali K Ali | Casuarina pole licencee |
| 6. Mr. Dixon M Kalama | FADA treasurer |
| 7. Mr. Joram Kagombe | FMC ASFMCP |
| 8. Mr. Julius Katama | FADA |
| 9. Mr. Enock Kanyanya | Forest Department Headquarters |
| 10. Mr. Richard Wambua | DIFAAFA |
| 11. Mrs. Peris Shida | DIFAAFA |
| 12. Mr. Josiel Ferneli | DIFAAFA |
| 13. Mrs. Lydia Benjamin | DIFAAFA |
| 14. Mr. D.G Ndiritu | Forest Department |
| 15. Mr. M.T.E. Mbuvi | KEFRI |
| 16. Mr. S.N. Wairungu | KEFRI |
| 17. Mr. Douglas Barawa | DIFAAFA |
| 18. Mr. Lucas Chengo | Forest Department |
| 19. Mr. Evans Jefwa | Forest Department |
| 20. Mr. F Muchiri | DFO KLF |
| 21. Mr. B. Kivyatu | DFO Mld |
| 22. Mr. D.O Otieno | Forest Department Headquarters |
| 23. Mr. S.I Mwangi | Forest Department |
| 24. Mr. Yasin Gambere | KWS |
| 25. Mr. Suleiman | Bahari Community |
| 26. Mr. Tsofa Mweni | Birdlife International |
| 27. Mr. M.W Muniu | Forest Headquarters |
| 28. Mr. C. Mwakoro | Forester Sokoke |
| 29. Ms. S. Crook | Kipepeo/FoASF |
| 30. Mrs. S. Mlamba | ASFMCP |