PARTICIPATORY DEVELOPMENT IN INDIGENOUS FOREST MANAGEMENT

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Abstract

The rapid depletion of indigenous woodlands throughout Southern Africa has severe ecological consequences. The conversion of woodlands into farmland, the lack of national energy policies and programmes and the rapid increase of urbanisation lead to the increased demand for firewood and charcoal. These are contributing factors to deforestation. Also, government departments and their respective field staff are often unable or unwilling to enforce existing legislation. In view of these developments we have observed, over the last couple of years, a change in government forest policies in most SADC member states, making it possible to include and empower local communities in the management or co-management of forest and woodland resources. In Malawi this process takes place on customary as well as State-owned land.

This particular project, with activities in Botswana, Malawi, Mozambique and Namibia, has as its objective the development of strategies for community-based indigenous woodland management. It works with government and non-governmental organisations. Participatory rural appraisals were used to identify the needs of the local population, followed by socio-economic baseline studies and forest inventories. Local communities were encouraged to form themselves into village natural resource committees and other interest groups. Land utilisation plans were established and land utilisation activities were planned together with the communities. Apart from silvicultural activities emphasis was also placed on income-generating activities, particularly through the identification and utilisation of non-timber forest products.

Where possible, marketing activities are being undertaken, after conducting marketing studies. Village-based workers or researchers are selected and regularly trained. Subject matter specialists are called in for training of communities. By-laws to existing legislation have been established by village communities. Regular meetings with all stakeholders have been introduced.

First results indicate that communities are aware of the ecological problems in their areas. It also is apparent that only through the introduction of income-generating activities, can communities be motivated to reduce deforestation through land clearing, firewood collection and charcoal production. This in turn gives time and capacities to introduce woodland management measures.

1. Background

Kam'mwamba Village is situated on the Blantyre-Lilongwe Zalewa Road in Mwanza District, some 60 km from Blantyre, Malawi. It is a small village and has a population of about 1 200. According to the headwoman, charcoal production used to be an activity in the village. This is not so anymore as there are no more large trees to be found in the vicinity of the village and women have to travel far to fetch their daily requirements for firewood. Karaya gum used to be tapped around the village during the 1970s and the village headwoman was involved in the extraction. It was bought at 30 tambala per/kg. The buyers stopped buying because of the indifferent quality of the gum offered. Afforestation is not taking place because a tree nursery is lacking. People used to buy tree seedlings from across the Shire River but the forestry nursery is no longer there. Fruit tree seedlings are in demand to be planted on slopes, along gullies and river courses. Some local development committees are established: Health, School, MASAF and Forestry. However these are not very active.

2. Introduction and rationale of the project

The importance of the indigenous forests of the southern African region has been recognised for a long time. It is against this background that natural resources play an increasingly significant role in everyone's daily life in a variety of ways, which include, among others, aesthetic, economic, nutritional, social, scientific, educational and cultural values. However, very little has been done in the past to either maintain or manage these forests. In Malawi alone, some 27.6% of the country's land area is under forest cover. This includes national parks and wildlife reserves, forest reserves, protected hill slopes and natural woodlands on customary land. This type of natural woodland represents some 17%. And it is exactly these natural woodlands which are increasingly threatened by deforestation due to agricultural expansion, overgrazing, fuelwood-gathering, commercial logging, and large-scale industrial wood fuel utilisation for tobacco curing, lime burning, charcoal production, brick-making, etc. The total forest cover is, however, estimated to be declining at 1 – 2.8% per year with much higher deforestation rates in certain areas. The situation in other Southern African Development Community (SADC) member states is similar to that of Malawi.

The project concept is based to a large degree on the role the Forestry Sector Technical Co-ordination Unit (FSTCU) of SADC plays in the region, its co-ordination capacity as well as its mandate. Member states expect that the FSTCU will also play a leading role in the implementation and further development of a regional forestry sector policy. Particularly for this regional project, the co-ordinating capacities for the development and the dissemination of successful strategies for the sustainable management of indigenous woodlands will have to function effectively. The project is operating at two levels: 1) Development of regional policy and strategy aspects for the SADC forestry sector, and 2) Implementation of regional activities.

The **objective** of this regional project, with country components in Botswana, Malawi, Mozambique and Namibia, has been defined as follows:

"FSTCU disseminates successful strategies for Community Based Indigenous Forest Management (CBIFM) to Implementing Agencies (IAs) and policy makers in order to enable communities in the Southern African Development Community to sustainably manage indigenous forests"

In trying to achieve this objective, the project is undertaking in its country projects a number of country-specific activities leading to the following results:

- Establishing the capacity of FSTCU as a co-ordinating unit for facilitating the formulation of innovative CBIFM strategies in the SADC region
- Developing strategies to empower communities in CBIFM
- Developing and disseminating techniques for sustainable indigenous forest management by communities
- Developing strategies within the existing legal framework for implementing the new role of the forest administration in CBIFM
- Developing strategies to maximise benefits for communities from sustainable management of indigenous forests.

3. Land tenure systems and forestry legislation

Although the State is the custodian of all the land in Malawi, there are different legal systems governing the right of ownership and utilisation thereof, i.e. Customary land, Lease and Freehold land, and State land or Public land. As 85 – 90% of the population in Malawi still live in rural communities, where customary law governs the distribution of land, the question of long-term ownership is vital, particularly in relation to areas covered by natural woodlands or forests, and their management. The area covered by indigenous woodlands in Malawi on customary land is approx. 8 843 km^2, in addition to 7 905 km^2 of indigenous woodland reserves, which represent 33.5% and 29.9% respectively of the total forest area of the country (Table 1).

Table 1: Some key forest resource statistics for Malawi, January 1999

1. Total forest area	26 428 km^2
• Indigenous woodlands on customary lands	8 843 km^2
• Indigenous woodlands in forest reserves	7 905 km^2
2. Indigenous woodlands in National Parks and Game Reserves	9 680 km^2
3. Timber plantations	74 315 ha
4. Private and Local Authority plantations	35 540 ha
5. Fuelwood/Pole wood plantations	22 895 ha
6. Percentage forest cover	27.6%
7. Rate of deforestation	50 000 ha per year (1980 – 1992)
8. Timber output/year	53 200 m^3
9. Fuelwood energy consumption	2 solid m^3 per person per year
10. Productivity	
(a) Natural woodlands	0.2 - 1.0 m^3/ha/year
(b) Fuelwood plantations	5 - 15 m^3/ha/year
(c) Timber plantations	10 - 30 m^3/ha/year

Source: Ministry of Natural Resources and Environmental Affairs (1999)

Considering the demographic development of Malawi (population growth of 3.2% *p.a.*) and the increasing pressure on these areas by the rural population for conversion into agricultural land, the need to develop management systems to maintain these forests becomes apparent.

In view of these developments, which can be observed in many of the SADC member states and which are coupled with financial constraints (reduced budgets), forest policies and legislation have been

reviewed and changed in most countries over the last two to three years. Among others the objectives of the new forest policies are to enable and empower local institutions, authorities and communities either to become partners or to take over the responsibilities for the management or co-management of forest and woodland resources.

In 1997 the Southern African Development Community (SADC) adopted the "Forestry Sector Policy and Development Strategy for the Southern African Development Community". In 1998 work started on the development of the SADC Forestry Protocol. Forest policy developments in Malawi envisage the involvement of local communities in forest management. This is supported by the Forest Act passed in 1997.

4. Project implementation (Malawi Country Project)

4.1 Project site

The Department of Forestry proposed the project area, as it represents a typical dry deciduous Miombo woodland region. Resulting from the construction of the new highway (M1), connecting the capital Lilongwe with Blantyre, this area having always had settlements, has attracted even more people over the last few years. Partly intact Miombo woodland alternates with deforested areas due to clearing for agricultural purposes as well as illegal charcoal production. The scenario here is typical for other parts of the country: deforestation due to heavy population pressure and development activities.

The project area lies in a hot, low-altitude climatic zone at 390 m to 565 m above NN. The annual rainfall is approx. 860 mm with a mean annual temperature of 21 to 24^{o}C. The soils of the project area are lithosols and shallow gravelly ferrugenous loam. The common tree species are *Acacia, Adansonia, Brachystegia, Combretum, Sterculia, Julbernadia, Cordyla, Diospyrus, Dyplorynchus* and *Pseudolachnostylis*. While in 1966 the population density was around 19 persons per km^2, this had increased by 1998 to 64 persons per km^2. Approx. 4 000 people are living in the project area in five villages covering just over 6 000 ha (see project profile in Appendix 1).

In 1998 the Survey Division of the Department of Forestry was commissioned to carry out a Participatory Land Use Mapping and Land Cover Change Analysis. The conclusion reads as follows: "1974/1995 land cover change – During the 1974-1995 (twenty-one year period) the area has changed remarkably due to socio-demographic and socio-economic reasons. Population increase is the major cause of significant change in environmental history. The population increased from 1,530 in 1974 to 3,200 in 1995. Human activities such as settlement, agricultural expansion, trade in wood/forest products increased in 1995 due to improved access by the opening of the M1 (Zalewa Road)."

The analysis concludes that the five villages in the project area underwent a remarkable change in land cover, especially forest cover, which changed from 82.2% in 1974 to 49% in 1995, a reduction of forest cover of 33.2%. The major causes are as follows:

- With the national population growth rate, which is estimated at 3.2%, many people are acquiring land for agricultural purposes and the project area is one of the areas which experiences such development.
- The illiteracy and poverty rate are high, hence people are striving to help themselves by actively participating in the wood utilisation business.
- Poor soils and climatic conditions do not favour sustainable agriculture, often resulting in food deficiency, and there is no alternative means of food supply.
- The development of the Matope Road and the M1 Zalewa Road attracted various activities such as the development of the lime production business, charcoal production and increased settlement due to easy access.

Agriculture changed from 13% in 1974 to 39% in 1995 and settlement increased to 8.7% from 2.3% in the same time. Agricultural expansion and settlement contributed 96.8% to deforestation, while actual charcoal and fuelwood business and other causes contributed 3.2%." [1]

5. Institutional set up and participatory management systems

In each of the four country projects the participatory approach is of vital importance. As can be seen from the model in Appendix 2, the understanding of the interrelationship between the various actors who are involved in maintaining indigenous woodlands is very important. Similarly it is essential to understand the economic objectives communities have when it comes to managing woodland resources. The graph in Appendix 2 (obtained from GTZ surveys in a number of countries) shows this quite clearly. The situation in the Malawi country project is not that different.

SADC and FSTCU's[2] policy recommends the involvement of NGOs wherever possible in the implementation of the country projects. Of the four country projects currently implemented, three are run

1 Participatory Land Use Mapping and Cover Change Analysis, Dept. of Forestry, 1999

2 Forestry Sector Technical Coordination Unit

by NGOs and one is run by a Directorate of Forestry. At the national level each country project is guided/supervised by a National Steering Committee (NSC), whose composition of up to 15 members draws people from a wide spectrum, who can contribute professionally to the advancement of the activities. The Chair is always held by the Department of Forestry. The NSC meets bi-annually. SADC's Technical Committee for Forestry (TCF), which meets annually, is responsible for the overall guidance of this particular regional project.

When implementing the project several stakeholders are involved at the local level. The most prominent are the targeted communities, with the Wildlife Society of Malawi as the leading executing agency and the Department of Forestry as the key advisor. Other stakeholders equally interested in maintaining and co-managing natural resources are churches, educational and research institutions, other government departments, non-governmental organisations and the business sector. A Local Steering Committee (LSC) consisting of ten members drawn from the five villages steers the project at community level. Below the LSC are Village Natural Resources Management Committees (VNRCs) and a number of interest groups implementing various project activities (see Project Structure in Appendix 4).

In planning the project and implementing its activities all country projects are following a number of major steps, though not necessarily in the order mentioned below:

- Participatory project planning through the use of the Participatory Rural Appraisal (PRA) and other participatory development methods
- Awareness and mobilisation of communities and formation of institutional structures such as Village Natural Resource Management Committees (VNRCs), Local Steering Committee (LSC) and National Steering Committees (NSC)
- Identification of project activities such as demarcation of Village Forest Areas, Individual Forest Areas, Institutional Forest Areas and other activities
- Preparation and implementation of land-use plans
- Conducting forest inventories and applied forest research activities
- Preparation of forest management plans
- Preparation of Village Forest by-laws and contracts
- Development of income-generating activities
- Establishment of village development funds and benefit sharing mechanisms
- Conducting a regular monitoring and evaluation process.

Activities to empower communities, including capacity building, rate very high on the priority list in Malawi. The mobilisation process is strengthened through training in leadership skills, the development of by-laws for the management of natural resources and the training of groups in various activities. In order that groups can commence activities, basic project materials such as tree seeds, planting pots, wheel-barrows, hoes, etc. are provided in the first year. Regular awareness campaigns are conducted with the communities to arouse awareness in and create action on environmental issues, mostly on the dangers of wanton tree-cutting. These campaigns usually take the following forms:

- drama performances by both local and professional artists
- songs and dances composed and performed by local environmental groups
- video shows, and
- direct meetings with communities.

Communities are mobilised to play an active role in natural resource management. This is done through the formation of VNRCs. These oversee natural resource management activities in each village. Within each village interest groups/clubs carry out various small-scale enterprises such as bee-keeping, guinea fowl rearing, tree nursery establishment and others. The VNRCs are responsible for the coordination of the various activities in each of the participating villages. The monitoring process is mostly done by Village-based Workers (VBWs), assisted from time to time by a Project Assistant, the Assistant Country Project Manager and/or the Country Project Manager. This is being carried out through frequent club or farm visits where meetings with the people are held regularly. The communities are trained to monitor their own activities and then give feedback to the office. The Village-based Worker gives advice when and if required.

6. Natural resource management and income-generating activities

Involving the communities to articulate their needs, a number of activities are being promoted. The economic priorities of the communities in managing forest resources have been detailed in Appendix 3. (These statistics were ascertained from socio-economic surveys undertaken in a number of projects with similar objectives in a number of different countries.) In Malawi, however, the main emphasis is on sustainable management of indigenous forest resources to ensure continued availability of benefits to the communities. In particular, these activities take the form of encouragement of natural regeneration of indigenous trees and of restocking/replanting and planting.

Tree planting and management are achieved at three levels:

- *Individual household level*: a household establishes its own woodlot near the home for easy access, or establishes its own Individual Forest Area (IFA). There are now 41 of these in existence.
- *Community level*: a village establishes or sets aside an area for a Village Forest Area (VFA) for communal use. 10 VFAs have so far been established/reserved comprising almost 24 ha.
- *Institutional level*: an institution such as a school or a church establishes its own forest area for the sole use of that institution.

Other activities include:

- conducting applied research on non-timber forest products (NTFPs), and
- assisting communities in developing by-laws, land-use plans and forest management plans.

Off-farm activities are encouraged for generating household income and supplementary food sources. Some of these include:

- *Bee-keeping*: although this has always been a traditional activity in the area using tree bark hives, modern methods such as the introduction of the Malawi Standard Bee hive (a modified Kenyan Top Bar Hive) are advocated. There are currently 22 bee-keeping clubs with a total of 70 beehives.
- *Guinea fowl rearing*: although traditionally a wild bird, domestication of these birds is encouraged as the demand for their meat and eggs is increasing and it is economically attractive. While at the start of project activities this bird was unheard of in the area, there exist now some 25 guinea fowl rearing clubs keeping over 700 birds.
- *Indigenous fruit processing*: a survey conducted in 1997 identified 18 wild fruit tree species. Local communities have always utilised a number of fruits for consumption and farm gate sales. The fruit from *Adansonia digitata* and *Tamarindus indica*, in particular, lend themselves to the value-added process. Fruit juices are now sold by the project on a commercial scale. This has led to the introduction of a benefit-sharing mechanism, the opening of a community bank account, and to communities undertaking village development activities from these proceeds.
- *Bamboo furniture making:* communities are trained in furniture-making, using fast-growing bamboos and creepers.
- *Fire briquette making*[3]: women in particular are being trained in this activity, as an alternative to fire wood utilisation and as an income-generating activity. The raw material for this process is freely available.

The possibilities of developing other products for the market are currently under investigation. Looking at some of the other country projects, particularly Botswana, the commercialisation of medicinal plants and tubers, herbal teas, mushrooms and thatching grass is ongoing. The sale of timber for construction or furniture-making purposes and the sale of charcoal from sustainably managed indigenous forests will contribute to the household income. The extraction of cooking oil, e.g. from the seeds of the marula fruit (*Sclerocaria birrea*) is yet another avenue to be further investigated, although already traditionally practised in the country project in Mozambique.

7. Achievements and problems

Since the start of field activities in the country projects there have been some achievements worth mentioning in trying to maintain indigenous forests, although it is too early yet to draw any firm conclusions. The achievements include the following:

- increasing participation/involvement of community members (men, women and the youth) in project activities (from the planning stage to implementation) raises awareness and interest
- more land is being set aside as forest areas/woodlots by local communities
- decreasing trend of charcoal/firewood production in areas where illegal charcoal/firewood production was a major activity and income earner
- a well-defined participatory structure for all levels of management from project to village level has been put into place and is working successfully
- there has been a shift in attitude by the communities in their perception of natural indigenous forests. Much as they know that natural forests were provided by nature, they begin to realise that continued availability entirely depends on their attitude and conduct towards them
- several alternative income-generating activities have been identified, developed and are currently operational.

Inevitably there exist problems in this very diverse regional project, which were unforeseen and arose during the implementation of the planned activities. Although most countries within the SADC region have passed forest legislation which quite clearly stipulates that communities shall participate in or be responsible for the management of indigenous forest, respective forest departments find it hard to

[3] Developed by Stanlinks Organisation

relinquish their responsibilities. They still consider that the communities are unable to look after their resources. At the same time adequate training programmes for community members are lacking and forestry field staff very often lack specialised extension training. Generally it can be observed that:

- Indigenous forest management and environmental protection are still regarded as activities unsuitable for communities due to inadequate awareness
- the political will of the state is very often insufficient to release its control over resources and incomes to communities, particularly where income from export represents foreign exchange earnings
- the legal framework is generally still insufficient to permit the communities long-term resource security, particularly when it comes to questions in respect of customary land
- not all management methods are adapted to the capabilities of communities
- where pressure on land resources exists, coupled with a heterogeneous local population, the capacities of the communities to manage conflicts are often insufficient
- inappropriate harvesting methods of non-timber forest products, which could lead to the depletion of the resource, are very often due to inadequate training and insufficient and inappropriate extension messages
- inadequate empowerment of communities in respect of, for example, the confiscation and the disposal of these products (firewood and charcoal, poles, etc.)
- the question of marketing products and the development of new marketable products, particularly NTFPs, is often beyond the scope of the communities.

7. Conclusion

The rate of deforestation of predominantly indigenous woodlands has reached alarming proportions in all SADC member states, especially in Malawi, where it is a burning issue. It is also apparent that the demographic development and with it the rise of absolute poverty is the main contributing factor for this state of affairs. The development of participatory methods that allow communities a direct influence in the decision-making process of the management of their environment, and the immediate alleviation of severe poverty through income-generating activities, may be one way to maintain the still existing indigenous woodlands. However, there are actors other than government departments, e.g. research organisations and community development groups, which will have to contribute their active share to this process. Without a concerted effort of all the important players, the development of participatory methods, their introduction and application by the communities, indigenous woodland management will not be sustainable.

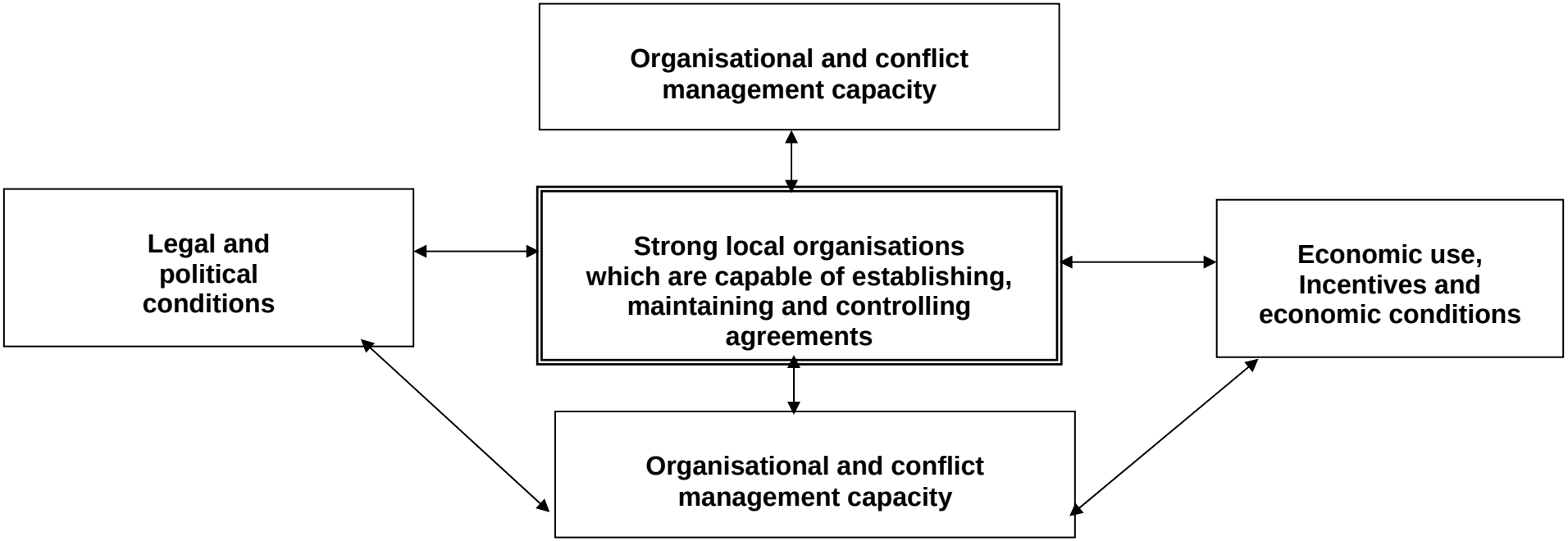
Appendix 1

SUSTAINABLE MANAGEMENT OF INDIGENOUS FOREST PROJECT: PROJECT PROFILE

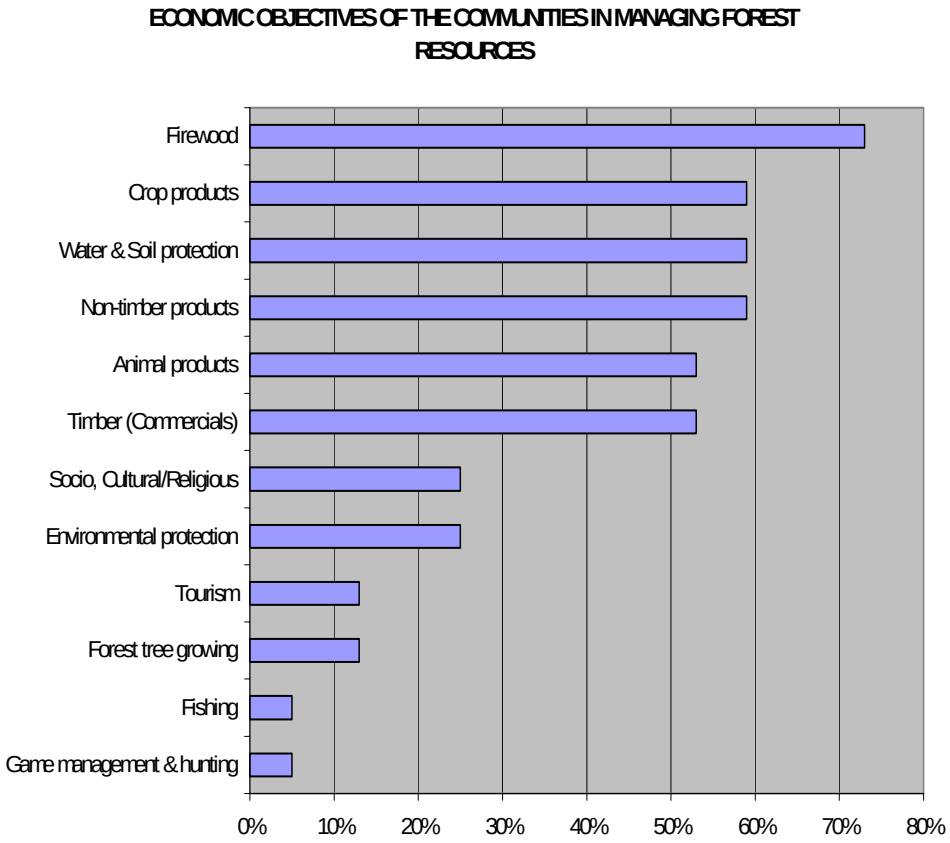
Location	Mwanza East, Southern Region of Malawi Between 15^0 23'S $34^0$50'E and $15^0$23'S $34^0$55'E			
Number of Villages	5 (Chikwekwe, George, Gobede, Kam'mwamba and Manyenje) in T/A Symon			
Type of tribe/society	Chewa tribe dominant (matrilineal society) with some Yao and Lomwe tribes.			
Total No. of households	930			
Total population	3 956			
Total Area	60 km^2 (6 000 ha)			
Total arable land	1 950 ha			
Type of land	Customary land			
Type of Agriculture	Subsistence (cereals and pulses) and cotton as a cash crop. Livestock production			
Livestock population	Cattle	1580	Pigs	153
	Goats	2 852	Sheep	7
	Chickens	5 779	Ducks & turkeys	159
Soil type	Stony red soils along escarpments and ridges with lime stones and sandy loam and Makande soils along streams and rivers.			
Vegetation type	Dry Miombo woodland with associated mixed vegetation types. (*C. mopane, Sterculia* spp*, Combretum* spp*, Pterocarpus angolensis and Adansonia digitata*) and others.			
Mean Annual Rainfall	<800 mm			
Forest Productivity (total volume)	<14 m^3			
Maximum Annual Increment (MAI)	0.5 m^3 to 2.5 m^3/ha (depending on soil type)			

Appendix 2

Interrelationship of capacities, actors and facts in sustainable management of indigenous forest resources by communities

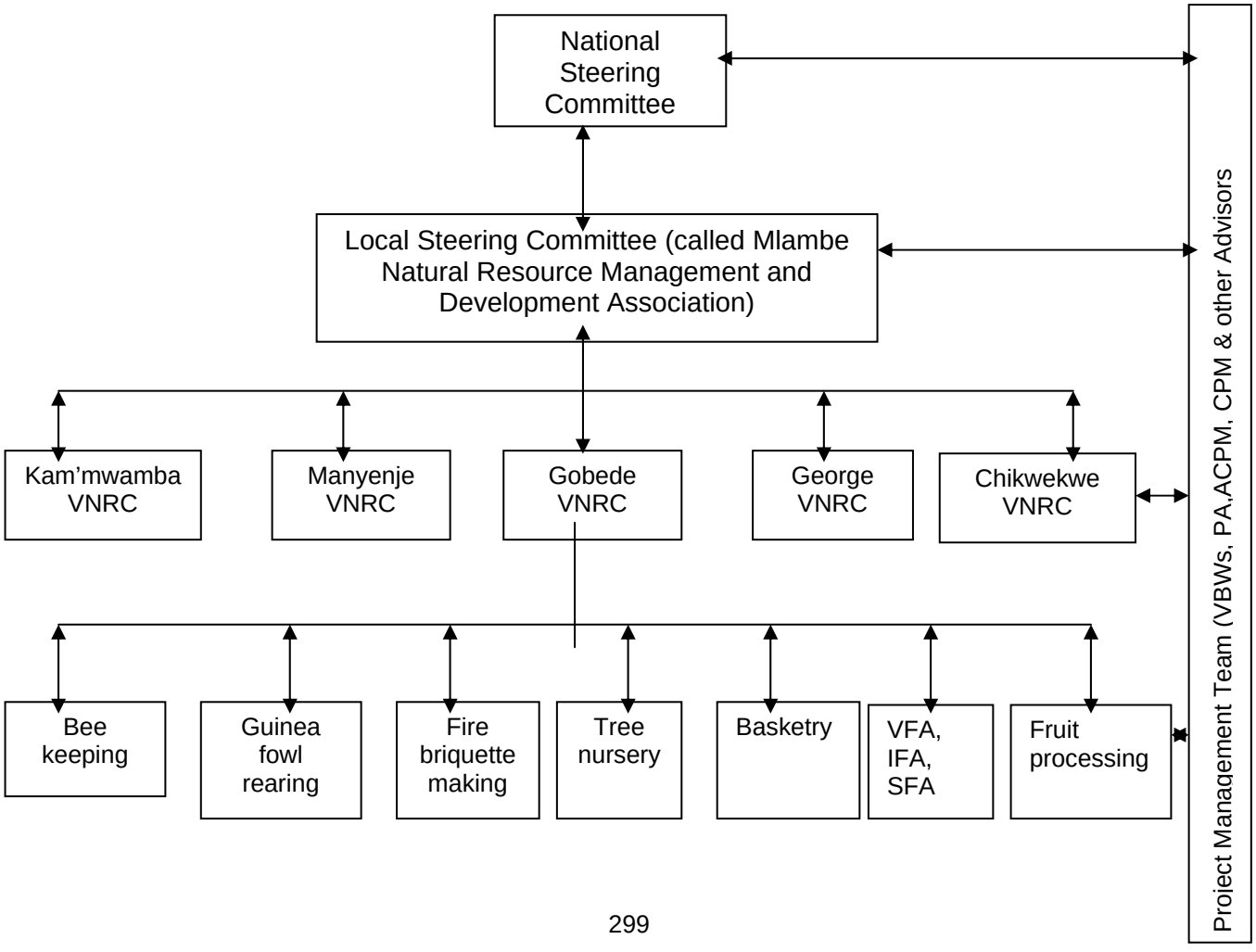


Appendix 3



The Project Structure

Appendix 4



References

FAO (1995). Non-wood forest products for rural income and sustainable forestry, *Non-wood Forest Products* 7, F.A.O, Rome.

GOVERNMENT OF MALAWI (1999). *Some Key Forest Resource Statistics for Malawi.*

GTZ, Eschborn (1996). Grundlagen und Leitfragen zur Thematik von FNHP.

IUCN (1996). *Communities and Forest Management*. A report of the IUCN Working Group on Community Involvement in Forest Management with recommendations to the Intergovernmental Panel of Forests. IUCN, Cambridge, U.K.

LAMIEN, N. SIDIBE, A. & BAYALA, J. (1996) Use and commercialization on non-timber forest products in western Burkina Faso. In: FAO (1996) Domestication and commercialization on non-timber forest products in agro-forestry systems. *Non-Wood Forest Products* 9. F.A.O, ICRAF, IUFRO.

MATAYA, J. (1997). *Sustainable Management of Indigenous Forests*, Workshop report. ZOPP.SADC/ FSTCU-GTZ. Lilongwe, Malawi.

MAUAMBETA, D.D.C (1994*). The Role of Fruit Trees in Farming Systems in Eastern and Southern Africa*. MSc. Thesis, Oxford Forestry Institute, University of Oxford, United Kingdom.

MAUAMBETA D.D.C & KACHIGWALI, F.E.D (1996) *A Report of a Participatory Rural Appraisal (PRA) Conducted in Chikwekwe, Kam'mwamba, Manyenje and George Villages, Mwanza District, Malawi*. The Wildlife Society of Malawi, Blantyre, Malawi.

ROS-TONEN *ET AL*. (1995) C*ommercial and Sustainable Extraction of Non-timber Forest Products. Towards a Policy and Management-oriented Research Strategy.* Tropendos Foundation, Netherlands.

ROS-TONEN, M.A.F., VAN ANDEL, T., ASSIES, W., DIJK, J.F.W., DUIVENVOORDEN, J.F., HAMMEN, M.C., VAN JONG, W. de, REINDERS, M., RODRIQUEZ FERNANDEZ, C.A., & VALKENBURG, J.L.C.H. (1998). *Methods for Non-Timber Forest Products Research. The Tropendos Experience.* Tropendos Documents 14. Tropendos Foundation, The Netherlands.

SAKA, J.D.K. & MSOTHI, J.D. (1994). Nutritional value of edible indigenous wild fruits in Malawi. *Forest Ecology and Management 64 (1994) Special Issue.*

SIMONS, G. & CHILIMAMPUNGA, F. (1997*). A Study on Utilization and Marketing of Non-timber Forest Products (NTFPs)*. Community-based natural resource management in Mwanza East-Malawi. SADC/FSTCU-GTZ Project. Lilongwe, Malawi.

SKOTTKE, M. (1998). *Erfahrungen mit FNHP in Vorhaben* "*Kommunale Trockenwaldbewirtschaftung".* GTZ-Wald-Info.