Guidelines for managing non-timber products of miombo woodlands

RIU

Validated RNRRS Output.

Appropriate methods, better knowledge of product demand, and improved understanding of the factors that determine villagers' abilities to manage the miombo woodlands in eastern and southern Africa, have now been developed. Preliminary guidelines for the management of the three types of miombo forests (low altitude dry, montane/hill, and wet plateau) are now being used by government and NGOs in Malawi. Guidelines on the harvesting of non-timber products have also been produced, and awareness raised within target communities. Although abundant, miombo trees are slow-growing and were long thought unsuitable for cultivation, but these indigenous woodlands harbour a diversity of tree species producing lumber and valuable non-timber products such as poles, firewood, ropes, wild fruits, honey, reeds, bamboos, and medicinal plants.

Project Ref: **FRP14:**
Topic: **1. Improving Farmers Livelihoods: Better Crops, Systems & Pest Management**
Lead Organisation: **Forestry Research Institute of Malawi, Malawi**
Source: **Forestry Research Programme**

Document Contents:

Research into Use
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Park House
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Geographical regions included:

Malawi,

Target Audiences for this content:

Forest-dependent poor,

Description

FRP14

A. Description of the research output(s)

1. **Sustainable management of miombo woodlands by local communities in Malawi**

2. **Forestry.**

3. **R Number: R6709**

Partnership: Natural Resources International Limited and Forestry Research Institute of Malawi

Contact Persons: Dr. Dennis Kayambazinthu and Mr. Tembo Chanyenga

4. **Proposed outputs included:**

a) To develop **silvicultural** and **forest management prescriptions** for **miombo woodlands** in Malawi, especially those suitable for the use by the communities with simple supervision
b) To develop **appropriate methodology**, increase knowledge of **product demand** and greater understanding of the factors determining the villager's capacity to manage indigenous woodlands
c) To prepare **guidelines** for **forest management plans** for Village Forest Areas, community managed sections of **forest reserves**, areas of miombo woodland within forest reserves under Forestry Department management and natural woodland areas on estate land
d) To prepare **model plans** for two pilot areas representing different ecological and socio-economic conditions based on PRA, stakeholder analysis, village workshops and meetings
e) To raise awareness within **target communities** and widespread **dissemination** of research findings both in Malawi and regionally

The project achieved its first objective of developing silvicultural and forest management prescriptions for *miombo* that would allow utilisation and regeneration. Preliminary guidelines for management of the three *miombo* types (low altitude dry miombo, montane hill miombo and wet plateau miombo) developed are now being used. These were produced in 1999. In relation to objectives b), c) and e), planning guidelines for the implementation of co-management of forestry resources in Malawi were developed in 1999. Co-management guidelines were incorporated in the revised Forestry Policy (1996). Partially, guidelines on harvesting of NTFPs such as poles, firewood, ropes, fruits, honey, reeds and bamboos were also produced in 1999. These guidelines have been used by co-management communities, for example, those around Chimaliro Forest Reserve. Though the project achieved output "e" to some extent more needs to be done in terms of dissemination of research findings to the technical clientele and practitioners.

5. **The types of output(s) described by the project:**

Product	***Technology***	***Service***	***Process or Methodology***	***Policy***	***Other Please specify***
X	*X*	*X*	*X*	*X*	

6. The **main commodity (ies)** upon which the output(s) focussed

These relate to:

i) Timber
ii) Non-timber forest products (NTFPs)
iii) Pasture

The output can be applied to other commodities, which communities are allowed to benefit from through the management of the miombo woodlands, for example, controlled forest erosion and harnessed water supplies.

7. **The Production system(s) the output(s) focused upon**

Semi-Arid	***High potential***	***Hillsides***	***Forest-Agriculture***	***Peri-urban***	***Land water***	***Tropical moist forest***	***Cross-cutting***
X	*X*	*X*	*X*				

8. **Farming system(s) the output(s) focused upon**

Smallholder rainfed humid	***Irrigated***	***Wetland rice based***	***Smallholder rainfed highland***	***Smallholder rainfed dry/cold***	***Dualistic***	***Coastal artisanal fishing***
			X	*X*		

9. How could ***value*** *be* ***added to the output or additional constraints faced by poor people*** *addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)?*

The socio-economic study outputs under R4599 project add value as it dealt with forest growth and management as a response of use patterns, seasonality in use and gender issues. Number of benefits accrued from a given forest is a good stimulant to forest management.

Research outputs from R8305 complement and add value as this relates to sustainable bark harvesting through sustainable management of the miombo woodland by local communities. R8305 dealt on harvesting methodologies or best practices for sustainable management. The development and implementation of models, prescriptions and plans for estimating sustainable yield, through participatory techniques and collaboration greatly enriched knowledge on sustainable management of miombo woodland by local communities.

The work on field productivity of mushrooms in R7250, as a way of understanding the natural resources in miombo woodlands contributes to finding better methods for assessing forest products. Although fungus production could not be directly linked to and affected by local management of woodland, the project however improved our knowledge on some of the seasonal factors that influence production.

R7250 and R6709 and similar projects are most likely to be used as case studies in a wider study concerned with improving monitoring methods of natural resources, as this is vital in considering the wider potential for using forest products to address poverty and livelihood matters. Both demonstrate that good science allied to an

awareness of development issues is an effective approach for addressing social and economic problems facing communities depending on forest products.

The CIFOR-supported Adaptive Co-management Project (1998-2005) which followed the co-management project brought, as add on process, increased active participation of communities in management and decision-making through processes of social learning. Communities are now better able and have capacity to adjust and change some management decisions and have diversified on the management for non-timber forest products.

Validation

B. Validation of the research output(s)

*10. **How** were the output(s) validated and **who** validated them?*

The co-management planning guidelines developed from the project were validated and adopted by the Forestry Department for implementation of the World Bank funded co-management of forest resources in Malawi. This was done through the involvement of the Forestry Department in the participation and assessment of co-management as a process mainly by using its District Forestry Office staff. The Forestry Department also became critical in the co-management process by finally ratifying the drawn constitution and management plans for implementing co-management. The published booklet of guidelines draws on the proven essential elements of the co-management experience in Malawi and is designed in such a way that it is easy to follow. The developed guidelines provided the major building blocks for the incorporation of co-management in and influenced.

Currently, the Government of Malawi /European Union (GOM/EU)-funded project of Improved Forest Management for Sustainable Livelihoods (IFMSL) is also validating the co-management guidelines in 11 government protected forest reserves in Malawi involving local communities leaving adjacent to these forest reserves on pilot basis. The project has also discriminately used the developed silvicultural and management prescriptions for community involvement in managing sections of the protected forest reserves. This project was designed by drawing on the successes of implementing the Social Forestry Project, which also relied on co-management principles and the use of sivilcultural and management prescriptions. This was validated in 5 project districts by first training the forestry technical officers (as training of trainers) and then the communities using participatory approaches. Management plans for all the 5 districts were prepared and implemented with considerable success.

Following the validation by the Social Forestry Project, the preliminary guidelines for sivilcultural and management prescriptions of the three *miombo* types (low altitude dry miombo, montane hill miombo and wet plateau miombo) developed are now being used by some poor rural communities in their village forest areas (VFAs) with the support of NGOs and by the Forestry Department in the forest reserves as well as VFAs.

Under the Sustainable Management of Africa's Dry Forests Project (2003), supported by the Swedish International Development Agency (SIDA) in conjunction with CIFOR, the methods used were assessed and

validated for possible replication and/or adoption in countries with similar conditions. A consultancy engaged by FRIM under the project and done by Professor Rogers Malimbwi of Sokoine University of Agriculture, Morogoro, Tanzania in 1999 to evaluate the use of different silvicultural and management prescriptions through co-management had earlier recommended FRIM to initiate formation of growth monitoring in miombo woodlands in the SADC context.

11. ***Where and when*** *have the output(s) been validated?*

A two day consultative meeting was held in 1997 in Kasungu for senior staff members of the Forestry Department to deliberate on the project findings and agree on the way forward according to recently gazetted Forestry Act (1997).

Forestry Research Institute of Malawi (FRIM) in collaboration with District Forestry Officers and extension staff organised two field tours in 1997 for communities from Chimaliro to southern and central parts of the country and communities from Blantyre to pilot sites, especially at Chimaliro, to deliberate and adopt the project findings. Both communities appreciated how methodologies and prescriptions, involving local communities can lead to sustainable management of the woodlands and to increased wellbeing and how the absence of these outputs has led to resource degradation and hardships among community members. Such exchange visits were observed as vital in the adoption and implementation of best practices.

A three-day national workshop on community-based management of miombo woodlands was organised from 27th to 29th September 1999 in Mangochi to bring together scientists, practitioners within the country with a view of sharing and synthesising the available information on community-based management of miombo woodlands for strategic planning. The silvicultural and management prescriptions were fully endorsed as holding high potential other areas with similar conditions.

FRIM was invited to participate in the 21st environmental co-ordination meeting in Blantyre at which the theme was the role of donor agencies and community-based organisations in empowering local communities in management of natural resources. Results from project R6709 on community-based management of miombo woodlands were directly imparted to NGOs.

A Natural Resource Stakeholders and Policy Makers Discussion Forum on Sustainable Management of Miombo Woodlands in Malawi held in Lilongwe, Malawi (2003), which drew participants from the region (i.e., Tanzania, Zimbabwe and Mozambique), endorsed the prescriptions for wider application.

Current Situation

C. Current situation

12. ***How and by whom*** *are the outputs currently being used? Please give a brief description*.

The co-management guidelines are used by the Forestry Department, Wildlife and Environmental Society of Malawi (WESM) and the Mulanje Mountain Conservation Trust (MMCT) in the establishment of co-management blocks with local communities in Mulanje Forest Reserve. The application of silvicultural and management prescriptions is vital in all these cases as management options as well as being used by the Forestry Department and local communities in the management and utilisation of Village Forest Areas.

The continued maintenance and monitoring of the sites from which the outputs were generated has created a lot of research, academic and stakeholder interest. These sites are hence visited frequently by many stakeholders, both national and international, to learn of the best practices for sustainable management of miombo woodlands by local communities. They have also been used as field laboratories by colleges and universities as part of the training programme of students undertaking forestry.

*13. **Where** are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used*

The silvicultural and management prescriptions are used at Moyo-Mauni Kam'mwamba and Leno village forest areas (VFAs) in Ntcheu, Neno and Nsanje districts, respectively. This has been done through participatory approaches initiated under the Social Forestry Project where the communities decide on the type of management prescription depending on the intended output of interest.

The co-management guidelines are used at Liwonde in Machinga District, Mbewa, Nakhonyo and Mangombo villages in Mulanje district and Chanasa, Makolera and Phunduma villages in Phalombe district. They have also used been used in Nkuwadzi in Nkhata Bay district in the establishment and implementation of co-management. These guidelines have also been adopted in other co-management projects in Tanzania and Zimbabwe and advocated as providing the best practices of community based natural resource management.

The silvicultural and management prescriptions and co-management guidelines are currently being used in formulating activities under the Improved Forest Management for Sustainable Livelihoods (9th EDF) work plans. This is for all the 12 project districts of Nsanje, Chikwawa, Zomba, Machinga, Ntcheu, Dedza, Kasungu, Ntchisi, Mzimba, Rumphi, Chitipa and Karonga districts.

Under the Lake Malawi Artisanal Fisheries Development Project, the forestry and catchment management component aims to reduce pressure on natural resources, increase and sustain the population of trees, bring better understanding about initiatives and responsibility over resources, economic empowerment reducing dependence on wood selling and motivating composed village committees to do more afforestation and catchment protection. The silvicultural and management prescriptions and co-management guidelines are being used in the design and planning of these community based activities in the 5 project districts of Likoma Island, Mangochi, Nkhata Bay, Nkhotakota and Salima.

*14. What is the **scale of current use**? Indicating how quickly use was established and whether usage is still spreading.*

Beyond the sites indicated above, the outputs in government-initiated programmes have been used to a limited extent because the technologies require a lot of input in the form of dissemination and involving the communities

through trainings. The spread of the technology has been a problem. The project produced 19 internal reports but most of them are not in more user-friendly format. They ought to be translated for easy dissemination by the extension staff. Due to low levels of education country-wide, effective dissemination will have to involve the right extension packages that are user friendly and can be easily digested by the rural masses.

However, the scale of current use through partnerships between government and donor agencies has been increasing, as shown by examples in 14 above. How quickly use can be established and how fast it will spread will greatly depend on these partnerships.

*15. In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the **promotion and/or adoption** of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success?*

The co-management guidelines have largely been promoted by the Malawi National Forest Policy (1996), which specifically advocates for the involvement of local communities in sustainable management of woodlands in co-management arrangements. Though there has been some success in following up on what the policy stipulates, some bottlenecks remain. Most forestry frontline staff lack the capacity to understand the concept of co-management and implementation has been a problem. There is need to train the forestry extension staff to understand the concepts stipulated in the Malawi National Forest Policy.

The training programmes have been some of the means that have assisted in the promotion and/or adoption. The Malawi College of Forestry and Wildlife (MCFW) have used the silvicultural systems in forest management training and used the existing experimental sites for training and demonstration to college, university students and communities on community-based natural resource management programmes. The College has also offered the same training to NGOs and NGO-supported communities for effective implementation of their own programmes. While government, through its well-established institutions down to the community level, has provided an important platform, this also serves as one platform that has been used to reach out to communities, with the NGOs providing the necessary resources to mobilise communities in natural resource management. The key to this largely being having the extension or facilitating agents being locally based and closest to the community.

One example worth quoting is the Social Forestry Project mentioned in 13 above. The project assisted greatly in the promotion and/or adoption of the outputs by using the existing institutional structures under the District Forestry Office (DFO). The DFO largely depended on the forestry extension staff available in each area at the community level by first training the staff in the DFO and then extension staff at the community level. The day to day interaction of trained personnel with sensitised communities has been most helpful.

Current Promotion

D. Current promotion/uptake pathways

*16**. Where** is promotion currently taking place? Please indicate for each country specified detail what promotion is taking place, by whom and indicate the scale of current promotion.*

In Malawi, promotion of co-management and subsequent use of management prescriptions are taking place in Mulanje, Liwonde, Dzonzi-Mvai and Perekezi Forest Reserves involving rural communities. The Mulanje Mountain Conservation Trust, entrusted with the general conservation of natural resources on the mountain, is promoting co-management involving community surrounding Mulanje Mountain Forest Reserve while through the Government of Malawi/EU funded project is promoting co-management in the rest of the reserves mentioned above. The activities include consultations with local communities to try and explain (sell) the ideas and benefits of co-management; community mobilisation and sensitisation; formation of village natural resource management committees; demarcation of co-management blocks; preparation of management plans; drawing up of the local constitution or bye laws; benefit-sharing and training of Village Natural Resource Management Committees. As these have been initiated following successes elsewhere on co-management, their implementation is an indication of scaling up and promoting the outputs.

*17. What are the **current barriers preventing or slowing the adoption** of the output(s)? Cover here institutional issues, those relating to policy, marketing, infrastructure, social exclusion etc.*

Though the policy advocates involvement of poor communities in sustainable management of natural resources for their benefit, some elements in the Forestry Act as an implementing tool are prohibitive. There is need for the Forestry Act to accommodate or recognise local bye laws as the two are, in some areas, at variance.

Inadequate knowledge with regards to forestry frontline staff on the technical aspects used in the co-management guidelines as well as silvicultural and management prescriptions of miombo woodlands is slowing the adoption rate.

The village natural resources management committees (VNMRCs), which are local institutions in forest management are weak in most cases to govern or execute effective management practices due to low level of understanding of some of the basic techniques required in order to sustainably manage forest resources.

Lack of financial resources, qualified personnel and transport to reach out to many village forest areas has prevented or slowed the adoption of the research findings.

There has also been a weak research-extension linkage to effectively transfer the developed information and technologies. As a result, there is a backlog of information and technologies that require extension packaging for these to be widely disseminated and used.

*18. **What changes are needed to remove/reduce these barriers to adoption**? This section could be used to identify perceived capacity related issues.*

Strengthen the linkages between research and extension and indeed with NGOs and any other community-based organisations. The existing loose linkages have meant low promotion and adoption of outputs.

Provide an enabling resource (both human and financial) environment to strengthen the training of extension workers and communities. This involves, *inter alia*, the capacity to train people at various levels down to the community level.

Provide resources to conduct more demonstration and pilot projects throughout the country for greater adoption. The sites from where the outputs have been generated are too distant to some areas for any effective promotion and adoption; 'seeing is believing'.

Conduct a participatory action research into factors that lead to low adoption even in areas surrounded by existing good examples of community management of resources. This will also help answer the question of the enormous disparity between research results and those achieved in practice.

Provide resources to usefully and holistically engage one of the Forest Reserves in sustainable management. The slow and piecemeal approach of engaging local communities to restricted, small areas has had its own setbacks as resources at their disposal fail to fit into any sustainable model of supply and demand.

*19. What **lessons** have you **learnt about the best ways to get the outputs used** by the largest number of poor people?*

Through an effective delivery (extension) system you are able to reach out to the majority of the target group. This will at all times involve learning by doing by the poor people for them to fully appreciate, understand and own any process they are involved in. Adequate time must be set aside at the beginning to explain fully and in the simplest terms possible why and how they have to be involved in the process. This will require changing the people's mindset and perceptions on intentions to particular programme they are requested to participate in. The change in policy to suddenly allow communities access and management of forest reserve hitherto prohibited to them is one such case.

Through participatory action-oriented research you are better able to get more in-depth commitment and learning for effective involvement of communities for sustainable management of natural resources. This is very critical for scaling up purposes as people, conditions and resources will differ and you need to appreciate the intrinsic elements of community involvement as building blocks to co-management

Greater acceptability and ownership of the processes involved by the communities leads to sustainable management systems and greater improvement in people's livelihoods. Mere participation with no regard to the opportunity costs the poor people are exposed to will lead to failure due to little or no participation, no commitment and lack of ownership and responsibility.

Exchange visits have always paid dividends as this has allowed communities understand and appreciate their plight and potential to change their lives for the better.

For productive community based natural resource management poor people must be assured of the availability of markets for their products, markets that are near to them. Non-availability of these always leads to disinterest.

A community with high social capital, cohesive, strong leadership, institutional structures and arragements.

Impacts On Poverty

E. Impacts on poverty to date

*20. Where have **impact studies** on poverty in relation to this output or cluster of outputs taken place? This should include any formal poverty impact studies (and it is appreciated that these will not be commonplace) and any less formal studies including any poverty mapping-type or monitoring work which allow for some analysis on impact on poverty to be made. Details of any cost-benefit analyses may also be detailed at this point. Please list studies here.*

The Adaptive Co-management studies in Chimaliro, using co-management blocks have demonstrated a positive impact in helping to reduce poverty and improve livelihoods, through a number of income generating activities, for example.

However, studies on the Miombo woodlands and HIV/AIDS interactions have proved that the inability to use and/ or enable communities to use the outputs leads to unsustainable levels of management and to further worsening the poverty and risk to HIV/AIDS.

R7250 has related benefits accruing from management of woodlands and selling of mushrooms; how communities are helped where there are a lot of trees.

*21. Based on the evidence in the studies listed above, for each country detail **how the poor have benefited** from the application and/or adoption of the output(s)*

There has been increased cash flow within the community in a period of three years and this has had a positive impact on livelihoods. There has also been an improvement in the social capital as more people have been trained and enabled to constructively engage in profitable management. The resource base had been better management than before the technologies were adopted.

Though the positive impact has been felt by the community as a whole, this has been particularly the case within women groups, for example the bee-keeping group at Chimaliro.

The one example of Chimaliro involves a populace of about 2,500 people who have benefited community-wide. The individuals involved in specific management activities are much less, however. These are in the range of between 50 and 250 but these are statistics obtained in 2003. It is however difficult to know what percentage increase this is.

Through the use of approved silvicultural treatments in the management of woodlands, poor communities have benefited from having greater access to fuelwood and timber for household use as well as for community use. This also relates to some NTFPs, such as mushrooms and edible caterpillars.

Environmental Impact

H. Environmental impact

*24. What are the **direct and indirect environmental benefits** related to the output(s) and their outcome(s)?*

Participation of local communities in sustainable forest management while promoting and improving the quality of life among the poor has a direct bearing on conservation of the natural resources. The wanton cutting down of tree is reduced and biodiversity of the woodlands is improved. This also leads to environmental stability of ecosystems as soils are protected and water sources are harnessed. Through following management plans, communities are able to do this through careful selection and retention of trees for particular sites to conserving the environment.

As human welfare is improved and appropriate incentives are obtained through sustainable management of natural resources, greater value is placed on the natural resources and the environment, which leads to prevention of environmental degradation or practices thereof.

As gender disparity is eliminated at all levels, greater conservation of particular biodiversity is realised, for example, those plants that are so well recognised by women as vegetables from the forests.

Through sustainable management and appreciation of the value of forests in offering a variety of medicinal plants, which help in healing various ailments such as malaria and other diseases, there is also greater conservation and protection of the various medicinal plants.

When principles of sustainable development are integrated into policies and programmes, it is expected that loss of environmental resources is reversed. This may even involve programmes that promote and increase forest-based enterprises that overall puts a greater value on the resources and therefore the need to conserve them. Advocacy, proper training and co-management arrangements will ultimately increase species diversity and prevent the extinction of some species, make efficient use of wood and other forest products all of which increases the value of the resources and the need to reduce wastage, protect and sustainably use the environment.

*25. Are there any **adverse environmental impacts** related to the output(s) and their outcome(s)?*

None so far that have been observed and proven or are indeed envisaged.

*26. Do the outputs **increase the capacity of poor people** to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience?*

The outputs have the greatest potential to increase the capacity of poor people to take charge of their destiny by using resources sustainably and thereby coping with the ill-effects of climate change, and be able to reduce the risks of natural disasters and thereby increase their capacity and resilience to overcome them.

Increasing the capacity of poor people has the effect of increasing the social capital of communities and making them self-reliant, as they are able to identify and understand their environment and natural resources at their disposal better. This means the poor people are able, for example, to identify and understand species behaviour

and make selective decisions on which species to plant or indeed any management prescriptions to cope with drought or natural disasters like flooding.

The increased capacity of the poor people to sustainably manage resources, in particular non timber forest products such as medicinal plants, which act as livelihood safety nets has the capacity to increase their resilience and are able to cope with the effects of HIV/AIDs and diseases in general.

Annex

Annex (References)

Government of Malawi, 2006. Policy logical frameworks for the establishment of the Malawi Agricultural Policy framework. Ministry of Agriculture and Livestock Dvelopment, Lilongwe.
