



NATURAL RESOURCE BASED ENTERPRISES IN MALAWI

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Community
Partnerships for
Sustainable
Resource
Management in
Malawi

**Natural Resource Based
Enterprises in Malawi:
Study on the contribution of NRBEs to the
economic development and community-
based natural resource management in
Machinga District**

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Blantyre South-West MP Henderson Mabeti struggled to tell a half-interested audience exactly how they can benefit from a forest, if they do not cut down trees “wantonly”.

***Not only are environmental issues perceived as boring, but they are irritating to people who see that the felling of trees destroys the economy in the long run. Conserving the environment therefore remains a subject that needs political will and determination.
(The Nation, 2nd November, 2000)***

This extract from a recent newspaper article on forestry in Malawi amply demonstrates the reality with reference to what people think of forest and environmental conservation. It is unlikely that further “awareness raising” is going to have a significant impact – perhaps the development of sustainable strategies yielding significant income for rural people will.

This is the essence of this study and report

EXECUTIVE SUMMARY

This study was commissioned in recognition of the fact that community-based natural resource management (CBNRM) offers opportunities for local people to develop livelihood strategies from natural resource management and not just the opportunity to participate in conservation for its own sake. To date, however, whilst we find local people exploiting natural resources for financial gain rarely do these activities represent a long-term livelihood strategy. Instead we see natural resource “mining” which typically follows a boom and bust cycle. Alternatively we also see missed opportunities in the form of trading in unprocessed natural resources, which with the appropriate technology could be transformed into valuable products with the concomitant profit benefits for the local harvester / processor. Finally in cases where locals are using their resources in a profitable and sustainable way even these activities are under threat because the locals are not organised or have not been given the right to protect these resources from other more powerful demands – such as charcoal burning. How to rectify these problems is the aim of this study.

The site of Machinga was chosen for the study based on the fact that there is a good natural resource base already intensively utilised for commercial operations. The question is what interventions are required to turn these activities into sustainable activities. Sustainable activities (ideally) rely on sustainable raw material provision and in consequence provide a sustainable income stream. The reality is people are motivated to achieve a sustainable income stream and sustainable natural resource management is one way of achieving this. It is not seen as an end in itself.

The report consists of nine sections and four annexes. They cover the following areas:

Section 1: This section explores the thinking behind the belief that “natural product development is an alternative livelihood strategy” and reviews some of the initiatives, which are already underway in the region based in this hypothesis. The reality is that rural people throughout the region are finding it increasingly difficult to make ends meet through reliance on agriculture alone and in Malawi the intense population pressure on limited land makes this particularly true. Natural resources (where they exist) do represent a resource which if used wisely can maybe contribute to an alternative livelihood strategy. Much depends on the resources themselves, the potential for adding value and what the local and international markets demand. This section also cautions that non-timber forest product collection may not be as

benign as we sometimes assume. It also discusses that by definition the poor are also the powerless and there are risks that as soon as highly workable commercial opportunities emerge other powerful people will “hijack” the profits. After all many indigenous forested areas have supported high value hardwoods in the past – these rarely presented an opportunity for the local people.

Section 2: This section outlines the objectives of the study. The methodology and the analysis approach is also explained. Most of the material was gained by interviews, direct observation and through literature. Detailed inventories and market surveys were not done but these would be important in order to take the work into a next stage.

Section 3: This section reports on the state of the natural resources in the target area and how they are currently utilised and managed. There is a big difference between the hills of the forest reserves and the customary land. Most of the customary land is in fact farmland therefore ownership and tenure are reasonably clear and management is within the context of crop-husbandry. The forest reserves are the responsibility of the Forestry Department. Sadly, these days lack of resources and motivation amongst this department means – to put it bluntly - the reserves are not managed at all. There is no guarantee, that if nothing changes soon, the woodlands will not be completely degraded within the next decade. Poverty is forcing people to trade in firewood and charcoal which if conducted in an unplanned way will bring about irrevocable forest loss.

Section 4: This section is dedicated to the issue of management, particularly the forest reserves. It discusses that the most appropriate management mechanism can only be worked out when the objectives of management and the costs of management are understood. One reason why co-management in Malawi is failing to live up to expectations is that these issues have never been spelt out, nor for that matter properly understood. Management by the Forestry Department need not be thought of simply in terms of “denying local people”, it can also be thought of a “providing a service”. If conservation yields intangible benefits and subsistence benefits only, local people appear to be only semi-interested in CBNRM. If the forest yields significant cash benefits only, the direct beneficiaries of the cash income will be interested in CBNRM – not the whole community. Some of the cash generated by the woodland should be spent on management otherwise the woodlands remain unmanaged and eventually become less productive. Despite the tone of this

document it is possible that indigenous woodland management will never be sufficiently productive to pay for itself – in which case management must be subsidised by government (not enough money) or by local contributions of labour and time (not everyone wants to do this without cash benefits) or through donations (in the developed countries this is a major way of financing nature conservation e.g. The Woodland Trust in UK).

Section 5: This section leaves the discussions on conservation and management and focuses on the business and marketing aspects of natural product development. There are different levels to business development. It is suggested that mere subsistence income generation will not achieve significant economic development and will not provide sufficient incentives for resource management. Ideally the stable and growing micro-enterprises levels are required to bring about the desired changes. It is difficult for community groups to undertake these types of businesses successfully and individual entrepreneurs are better suited. Community groups may however be involved in semi-processing and selling to the local entrepreneurs or entrepreneurs could work as individuals but be organised and co-operative with certain parts of the business e.g. sharing processing equipment or marketing. The markets are described in this section and the advantages and disadvantages of local versus international markets are discussed. Marketing is a frequently under-considered element of product development projects and this often leads to failure. Whatever approach is adopted product development and marketing should be seen as a private sector initiative (communities are also private sector) and too many subsidies can disguise whether a business is viable or not, and should be avoided (this includes taking care not to rely on project or NGO overheads).

Section 6: This section explores the need for good monitoring to allow for periodic assessment and evaluation. Promotion of NRBEs is being recommended in order that various objectives are met. It is important to verify from time to time whether they are indeed being met. The need for formative (ongoing) evaluation is stressed, this allows the participants the chance to pick up on unintended consequence which can then be monitored and also to notice problems which can then be dealt with in good time. Whilst project staff can identify and articulate impacts of certain interventions it is up to the actual beneficiaries or key stakeholders to assess whether these impacts are acceptable or not.

Concerning the natural resource base the biggest complication is that “do we know

what we want the natural resource base to look like?”. We know what we don’t want i.e. degraded woodland and removal of commercially and environmentally important species and ecosystems. Whether we want the resources to stay the same as they are today (Nov 2000) or different is a question that needs some thought. It is difficult to stipulate that the forests must remain in their “natural” state because they are already much influenced by man and fire. Nevertheless common sense, local and technical knowledge should enable a sensible management plan to be drawn up based on wise (if not sustainable) use of the forests. It is understood, for example, that tree species can be maintained within the forest provided off-take does not exceed regeneration rate, therefore these parameters need to be known (or at least guessed at sensibly). Monitoring is therefore needed to check that the management plan is adhered to and that the consequences of implementing the management plan are as assumed. It is also important to continue to learn about the relationships between the ecosystem and management activities.

Section 7: This section brings into focus four products areas that are recommended for development into viable NRBEs. The reasons why they are selected and the characteristics of each product are discussed. An action plan for each product is drawn up. The four products are : curios, wild mushrooms, honey and honey products and fruits processing. In conclusion it is pointed out that the main opportunities for product development and marketing are the availability of the resources, lack of competition in the local market and the rising demand for “alternative¹” trade products. The main threats are the difficulty of instituting forest management to secure the resource base and finding the right business models for viable community-based enterprises avoiding dependence on long-term project support and subsidies and spreading benefits widely amongst the poor.

Section 8: This section consists of a concluding summary under the headings of: woodland, utilisation, co-management and local perspectives, natural resource based enterprises and what next?.

Section 9: This is the Action Plan section and explains that we are dealing with two separate but interlinked projects here. The first is **forest management**, which requires the Forestry Department to take a leading role since they are the “land owners”. The second is **product development and marketing** which is required to be a private sector initiative. These two parts can be addressed side by side as each should provide motivation for the other. NGOs could play a facilitatory role in either

¹ Organic, fair trade, FSC certified and others.

project but are perhaps best able to work with product development, trade promotion and community capacity building. The approach to assistance delivery is yet to be worked out – pending the stakeholder workshop.

There are four annexes.

1. People consulted
2. List of useful contacts and other relevant initiatives
3. Detailed profile of various natural products
4. Information about business support organisations

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ACRONYMS AND ABBREVIATIONS

BAM	Beekeepers Association of Malawi
CBNRM	Community Based Natural Resource Management
DBH	Diameter at breast height
IGA	Income-generating activities
FD	Forestry Department
FR	Forest Reserve
FRIM	Forestry Research Institute of Malawi
FSC	Forest Stewardship Council
MK	Malawi Kwacha
NGO	Non-governmental organisation
NNP	Nyika National Park
NP	Natural Products
NRBE	Natural Resource Based Enterprise
NTFP	Non-timber forest product
PCS	Production-to-Consumption System
PFM	Participatory Fisheries Management
RUP	Resource Utilisation Programme
VM	Vwaza Marsh
VNRMC	Village natural resource management committee
WSM	Wildlife Society of Malawi

WHAT IS A NATURAL PRODUCT ?

Rather than provide a water tight definition it is more useful to describe the types of products this term is intended to cover. There are a number of “guiding” criteria none of which are limiting, these are:

- resources occurring in the “wild” or in the “bush”
- resources which are indigenous.

Semi-managed, semi-indigenous or naturalised resources may still, however, be included.

Does not include: Agricultural products such as maize and pumpkins, minerals and banned natural resources such as leopard skins and ivory.

In between: On-farm fruit trees such as mango and *Ziziphus mauritiana* (masau). Mango in particular is managed and not wild at all. Banana leaves, sisal and *Azadirachta indica* (neem) could fall into this category.

Does include: Indigenous species, particularly those which occur in bush or forest. Fine timber hardwood species tend not to receive focus because there is no marketing and development problem – but there is no reason (*in theory*) why they cannot be included into a management system where they occur in good numbers.

In reality the farmers and the rural people do not distinguish between wild or on-farm if it comes to carving a livelihood out of their surroundings. The markets can be equally non-specific, herbal teas are often considered natural products and yet the plant may be intensively farmed. Indeed if certain resources prove to have a strong commercial value it makes sense to manage it more intensively (even cultivate) to make sure supply is maintained.

On the whole we are referring to those resources which have been over-looked but which occur naturally and abundantly and are accessible by the rural poor (again fine timber trees tend to be “accessed” by rich outsiders and not the rural poor).

A Natural Resource Based Enterprise

One again an all-encompassing definition is not sought but in the context of this document a Natural Resource Based Enterprise (NRBE) is a commercial business activity based on the sustainable harvesting, processing and marketing of a natural resource. In this case the main defining characteristics to make a NRBE interesting are:

- the ability to add value through processing or better marketing
- a link between the enterprise and an incentive for improved management of the resource base
- the resource in question is widely available to the rural poor

SECTION 1. INTRODUCTION AND OVERVIEW

1.1 INTRODUCTION²

In the recent past several NGOs and projects in Africa have converged on community-based natural product development and marketing, either as an income generating activity within a community development context or as part of appropriate land-use technology from an environmental perspective. Natural product development as such is not a new concept but within the context of offering alternative livelihood strategies to the rural poor of Africa it is. The next paragraph shows why this might be so.

Why natural product development?

Since the early 1990s in Southern Africa, it has become increasingly apparent that the conventional agriculture-based model of rural production is failing to deliver livelihood security for all. With limited access to markets, land shortages (Malawi) that inhibit extensification, an inability to obtain the required agricultural inputs to keep production at sustainable levels and a lack of economic alternatives rural people find themselves locked into ever-deepening poverty and environmental degradations. In the Southern region of Malawi off-farm sources of income have been identified as the main area of development to achieve livelihood security in the face of land shortage. The search for alternative production systems is intense.

With this background we find ourselves looking more widely and in different directions to find an alternative base for rural livelihoods. One resource that is often seen as a hindrance to agriculture is natural woodland, which in many cases comprises high biodiversity. Many rural people have access to indigenous woodland areas in Africa, large areas of which are in the process of being degraded by overuse and mismanagement or by conversion to unproductive arable land. The natural product thesis is suggesting that there are significant cost-effective options that are yet to be fully explored and developed, to enable the optimisation of people-focused economic and environmental returns in these areas. In other words one promising development option is the sustainable exploitation of natural products accessible to communities.

A Natural Product (NP) based livelihood approach consists of identifying a market, accessing a market chain and then enabling primary producers and harvesters to add as much value as possible to NPs through simple technological improvements. Such an approach would as far as possible build on existing people's knowledge and skills, provide a diversity of livelihood options, be market driven and led by the private sector rather than technology driven and led by the state sector.

CBNRM and natural products

Many critics are now pointing at the CBNRM model as failing to deliver. This is partly a result of the varied and contrasting expectations that have been held for it. Originally it was not conceived of as a livelihood diversification strategy, or as an alternative to the conventional agricultural production systems. It was seen rather as an alternative conservation strategy, one that would alter peoples' attitude to natural

² Main source: Discussion paper of the NGO Regional Natural Products Development Initiative. November 2000

resources. CBNRM has not, however, delivered tangible rewards in the sphere of livelihood alternatives, and it is clear that it has not really been given the chance. The shift in perception of CBNRM from conservation to development approach has been gradual and subtle and by no means shared by all CBNRM practitioners.

At the heart of CBNRM approaches is the notion that communities will choose to protect and invest in their local natural resources if they have proper incentives. Whilst in some Wildlife-based CBNRM programmes these incentives have been (or are intended to be) a sustainable income stream, in forest-based CBNRM programmes these incentives have tended to be environmental, subsistence and other economic – but not cash – benefits. Some practitioners and many experiences suggest that without the sustainable income stream the momentum for CBNRM amongst rural people gradually stagnates and dies off. Natural product development might therefore provide locals with a reason for CBNRM.

The usefulness of the many CBNRM programmes has been their emphasis on factors such as tenurial security, local institutions for management, enhancing understanding of the ecological principles of sustainable management etc. all of which are useful building blocks for a natural product based livelihood strategy. CBNRM has not however focused on the markets and products that will deliver cash into people pockets that will enable CBNRM to be seen as a true livelihood alternative.

Interestingly the non-wildlife based options from forested lands are just as important, if not more so than the wildlife based options because of the extent of their applicability (wider area than wildlife) and offer a greater diversity of economic options to the producer than wildlife products.

OVERVIEW

All this would be for nothing if the markets were not there and the products could not be produced to meet the market demand. It would appear however that enough initiatives have sprung up to show us the breadth and depth of opportunity, as follows:

Regionally

- 10% of commercial pesticides are natural origin – they have greater diversity, lower eco-toxicity and are quicker to register commercially than synthetic pesticides.
- The desert truffles of the Kalahari desert fetch prices in the order of US\$ 70 for 1 kg on the international market, and yet in parts of Zambia they remain completely unexploited.
- Wild silk based on the cocoons of the wild moth *Gonometa rufubrunnea*, (NE Botswana) is considered superior to the wild silks of India and China.
- Players in four countries have been undertaking research on products from the marula tree (*Sclerocarya birrea*). This led eventually to the Southern Africa Marula Oil Producers Network. The network focuses on marula oil from the kernel of the marula tree whilst attention is also paid to other potential products such as soap from the oil. The goal is to optimise the sustainable income for primary producers from the commercialisation of marula kernel products thereby contributing to improved rural livelihoods and development of the marula resource-base.
- In Namibia a joint government – NGO Task Team for the Promotion of Indigenous Fruits has been set up.
- Activities and interest in Zimbabwe were reaching a critical stage which led to the

formation of the Zimbabwe Natural Products Working Group. The intention is to establish an action-oriented organisation focused on the commercialisation of Natural Products.

- In May 2000 a set of seven selection criteria for possible community-based NP production was established by SAFIRE and then tested against a number of known and documented species. The plants yielded between two and seven of the following products: fresh fruit, dried fruits, preserves and confectionery, beverages, oils and cosmetics, medicines and dyes. Application of the criteria yielded the following clear order of priority: *Adansonia digitata*, *Sclerocarya birrea*, *Kigelia africana*, *Ziziphus mauritiana*, *Parinari curatelifolia*, *Uapaca kirkiana* and *Berchemia discolor*.

Box 1. Muzama Crafts Ltd., Zambia.

Muzama Crafts Ltd owes its existence to the Forest Department and was set up in order to market forest products – particularly timber and timber products. Today the company is a profitable independent venture and is held up as a good model of what development can achieve. The company is unquestionably more sustainable and better able to serve their local communities than the collapsing agricultural marketing arrangement and the limping co-operative movement. Muzama is a private company limited by shares. The largest shareholder is the Uchi Mukula Trust which holds shares for and on behalf of traditional beekeepers, Muzama's producers and the wider rural community. Another major shareholder is the Craftsmen and Women Development Organisation another organisation representing the target group.

1998 – Muzama Crafts achieved Forest Stewardship Council (FSC) certification for 1 million ha of community managed forest. This was the first community managed forest to be certified in Africa and the largest area of FSC community managed forest worldwide.

1999 Forest Department declares all licenses issued to pitsawyers in the area illegal thereby suspending Muzama's operations

Discussion

This initiative is very interesting for many reasons, including:

1) How Muzama managed to achieve FSC certification

The obvious answer is that Forest Certification is achievable provided the FSC principles and criteria are fulfilled. In the case of Muzama the Soil Association undertook some preliminary studies (95 and 96) and recommended that Muzama had a reasonable chance of achieving certification provided that "a management plan be developed, which will be based on all the currently available inventory data" and also spelt out specific Key Issues for attention. In response Muzama prepared a management plan in order to show Woodmark that Muzama is a) committed to and has the capacity to carry out responsible forest management b) has a workable plan for achieving this and c) has made a good start with implementation.

2) How the local community and producers are represented in a Limited Company and the advantages this affords.

This is particularly interesting and throws a new perspective on how community participation can be designed. In this way it gives the producers elected leaders / Trustees more control over the Muzama company and also gives them access to relevant and high quality independent advice. Resolved

3) How the FD came to declare the operation illegal within less than two years of being certified (given that the first principle is that that the operations must be legal) and how this matter was resolved.

It would appear that there was indeed some legal irregularities although why the FD acted in an obstructive rather than co-operative manner is only part of the story.

A comparable company is North Western Bee Products Ltd, a company that trades in honey and bee products from a organically certified resource base. Uchi Makula Trust is also the largest shareholder in this organisation.

Source: Muuzama Craft Ltd, Plan for Certification. Third Draft 1996. Various letters between the Uchi Makula Trust and the Zambian Forestry Department dated 2000.

In Malawi

The interest in natural product development in Malawi stems from two directions:

- changing peoples' attitude towards protected areas by "enabling them to have some benefits" (e.g. National Parks) and if value can be added to these benefits so much the better, and
- encouraging them to change their destructive behaviour by giving them an alternative (e.g. Mwanza East).

The latter bears most relation to the livelihood approach but both recognise that for people to change their behaviour there must be an economic incentive.

The Resource Utilisation Programme (RUP) of Nyika National Park and Vwaza Game Reserve

The Resource Utilisation Programme was never intended as a livelihood strategy. It was designed in recognition of the fact that local people need certain resources for their subsistence living – some of which could be sold on the local markets. Unlike many other CBNRM projects the RUP did make some attempt to analyse the economic value of these resource for the locals – but giving people knowledge about economic values do not necessarily provide the same impact for behaviour change as helping people obtain a steady stream of income.

The following figures are derived from monitoring the products collected by permit holders and beekeeping clubs (not beekeepers outside the clubs). The figures represent monetary value although most of the resources are consumed and not sold, therefore monetary value does not represent income.

Table 1. Monetary values for resources collected from NNP and VM

	1996 (MK)	No of people	1997 (MK)	No of people	1998 (MK)	No of people
Vwaza Marsh	660,777	2395	764,728	3957	670,674	3340
Nyika National Park	177,465	1250	321,684	867	344,000	Not available

The lower figures for Nyika reflect the smaller area under monitoring. The products harvested include fish, thatch grass, reeds, caterpillars (various types), palm fruit, mushrooms (various) , bamboo and *Uapaca kirkiana* (masuku).

In addition to the products mentioned above the RUP allows local people to collect other products such as: matete grass, termites, dopoto plant and firewood. Almost none are processed or developed for the market in any way, except honey. Recent recommendations suggest the project programme should start looking into marketing and processing of fruits, mushrooms and termites.

Mwanza East

In order to curtail the impact of the charcoal trade in selected parts of the District of Mwanza the project aimed to identify and promote NTFP based enterprises, which could be undertaken by the local people. The project started in October 1997

- Beekeeping is being promoted – 22 beekeeping clubs with over 70 Malawi Standard Bee Hives.
- Guinea fowl rearing is being promoted – 25 clubs with over 700 birds
- Indigenous fruits processing, notably *Adansonia digitata* and *Tamarindus indica* are used to make juice for Malawi's supermarkets
- Rosella jam is being produced

This project is to some extent a pioneering project leading the way in Malawi in the field of natural resource based enterprises (NRBEs). The results are positive for the project villages. There are some questions, however, about the ease with which such a project can be replicated without the equivalent injection of donor money and technical assistance. The "main" products are the *A. digitata* (Mlambe) and *T. indica* (Bwemba) juice which according to some informants are still "infant" products which could benefit from further development with the consequent financial implications.

The project amply demonstrates that product development is very expensive. The concomitant capacity building and attitude changing activities within the local community are also very expensive but achievable. As far as the damaging effect of the charcoal trade is concerned an initiative with a far wider remit is required which should also take a look at demand reduction and sustainable management of forests for charcoal production. It is not yet clear how easy it will be for the facilitating NGO to withdraw from the activity leaving it to be a community-run profitable business.³

Beekeepers Association of Malawi

A beekeeping project was set up in 1989 to provide support to beekeepers who traditionally kept bees within the Nyika National Park. The project was implemented through the DNPW with funding from KFW. The beekeepers were trained in modern appropriate methods of beekeeping and honey extraction. A Beekeepers Association of Malawi was set up as a marketing body for the honey produced by the beekeepers. Sadly BAM folded in 1995 due to mismanagement leaving the beekeepers with no marketing mechanisms in place.

The main point for discussion is whether the problems that befell this project could have been avoided or not and whether BAM was the right sort of organisation or not. With a sure market honey production can quickly rise to meet demand, without it beekeepers lose interest and production falls. It is important to establish the marketing skills as close to the producers as possible so that they are in control of their sales rather than at the mercy of the middleman. The lack of local entrepreneurs⁴ willing and able to engage in honey trading and step into the vacuum created by the collapse of BAM is worthy of analysis. It could be do to:

- Lack of awareness of the value of the honey market or an understanding of how it works
- The capital investment needed to undertake the business is beyond what local entrepreneurs can borrow and are prepared to risk

³ An evaluation of this project was recently commissioned by USAID. The report produced in Feb 2001 has not yet been seen by the author of this report.

⁴ Some do exist but they are handling only relatively small quantities of honey

Box 2. Something fishy

Moving on from the theory that people protect what is theirs and what they get benefits from (CBNRM) to people will engage in CBNRM if it provides them with a sustainable livelihood strategy (Natural Product development and marketing) we find we already have a good example in Malawi: that is fisheries. There are a number of natural fisheries in Malawi and Participatory Fisheries Management (PFM) has been introduced on many of them. Whilst there are some notable success stories such as Lake Chiuta, on Lake Malombe PFM is still dogged with a number of problems. The main one is the difficulty fishermen face in regulating the activities of their fellow fishermen. Fishing is undoubtedly a livelihood strategy for these fishermen – a traditional strategy not a new one – and yet there are still problems. We should not assume that the NP option is suddenly going to provide us with an “all singing all dancing” solution.

ICRAF

The SADC-ICRAF Agroforestry Project based at Makoka Agricultural Research Station has for a number of years been working on domestication of selected indigenous fruits trees. The project “Domestication of indigenous fruit trees of the miombo woodlands of southern Africa” is a collaborative regional project co-ordinated by the southern Africa regional programme of ICRAF. The goal of the project is to promote the domestication and wider growing of indigenous fruits by farmers in southern Africa. Preliminary research results are available concerning the growth rates and establishment of the following species: *Uapaca kirkiana*, *Sclerocarya birrea*, *Parinari curatellifolia* and *Strychnos cocculoides*

Dr. Saka of Chancellor College and Alexandra Schombourg of Magomera Community Development Training Centre are undertaking research into fruit processing. Dr. Saka is looking at incorporation of indigenous fruits into traditional cakes (amongst other), whilst Ms. Schombourg is exploring methods such as jam making and fruit drying.

1.2 THE ROLE OF NTFPS IN CONSERVATION AND DEVELOPMENT⁵

Considerable interest in non-timber forest product or natural resource-based enterprises has built up in recent years in conservation and development circles. This interest stems from the following propositions:

- 1) Exploitation of NTFPs is less ecologically destructive than timber harvesting and therefore provides a more sound basis for sustainable forest management
- 2) Increased commercial harvest of NTFPs should add to the perceived value of the forest, at both local and national levels, thereby increasing the incentive to retain the forest in the face of alternatives such as conversion to farming land or degradation by charcoal burners
- 3) Finally, many rural people are failing to make ends meet through traditional farming activities, are failing to find employment or incomes from other sources and enhanced use of the natural resource around them does present perhaps one more option for them.

The purpose of this section is to examine these propositions and other issues that will have a bearing on the subsequent discussions about NRBE development in Malawi and Machinga in particular.

⁵ This section is largely drawn from Chapter 2 of *Incomes from the Forest* edited by Eva Wollenberg and Andrew Ingles.

The ecological perspective

Some ecologists are raising concerns that the arguments about relatively benign impacts of harvesting for NTFPs have been overstated or misunderstood. For example removal of excessive quantities seeds (fruit, nuts) can rapidly alter the composition of the forest and the frequency of occurrence of particular species. In Malawi it is possible that an increase in the removal of certain fruits (e.g. *Uapaca kirkiana*) which are eaten by monkeys might force the monkeys to come closer to the homesteads to look for food and it has been suggested that an increase in the collection of mushrooms has an impact on the resource base (the mycelium) on account of excessive trampling or breakage as the fruit body is pulled out. Other so-called NTFPs such as bamboo, reeds and also trees for wood curios do involve removal of the plant itself whereupon the principles behind their sustainable management are not much different than when timber is the sought after resource. Furthermore it is technically highly possible to manage timber products such as timber for sawn wood, poles and firewood in an ecologically sustainable manner and so one question might be should we not strive for sustainable management whatever the product, timber or otherwise.

NTFPs are most usefully commercialised if there is a good population of the resource to start with. This implies that a biologically poor resource is better managed and conserved through NTFP enterprise development than a resource rich in biodiversity.

The impact of market forces

The impact of market forces and commercialisation can have a whole range of impacts not all predicable and not all positive. A successful and profitable enterprise undertaken by local people will (we hope) raise their incomes. They in turn may replace NTFP subsistence use with imported products and use of the forest will swerve towards commercial only. The result is a change in harvest pattern and an alteration in the forest composition and nature. As commercial demand for a product emerges, there is a very great risk of over exploitation that may eventually lead to a decline in the viability of the activity in question. Clearly this is the risk which good management intends to mitigate and the why non-consumptive products are favoured – it is difficult to over-exploit the honeybee for example. The development of domesticated alternative sources is another possible outcome of an increase in commercial demand – the impact of this is that the enhanced commercial value of the natural woodland (for example) is once more reduced leaving it vulnerable to unsustainable use and degradation.

Household livelihoods and different categories of NRBEs

The development of NTFP based enterprises can have a range of impacts on household livelihoods. The need for money forces some people to collect forest foods and sell them to the richer families, rather than eat them, thereby reducing nutritional intake of the poorer. If the overall standard of living of the local people rises this means they might buy more of some things e.g. furniture and less of others e.g. forest foods, bamboo baskets (replaced with plastic). These dynamics impact on the NTFP collectors and processor. Some products have very steady reliable markets e.g. firewood.

It is sometimes possible to identify two categories of NRBEs. The first includes those activities that people resort to when they have no alternative and include simple gathering and trading. Such activities are undertaken by a large number of people as access is fairly easy but the result is that the market is quickly saturated offering the participants very low returns to labour. These activities are those that people would abandon if better options were available.

A second category includes those characterised by skill and capital requirements that *inter alia* establish conditions of entry, and expansion that limit participation in them. The participants probably adopted the activity out of recognition of the good market. This group includes products and processes, such as those involved in the manufacture of furniture, that involve technologies that enable businesses to evolve and improve. Their success lies in that they can compete with modern sector counterparts or have no modern sector equivalents.

Dependency and Equity issues

This issue of “who benefits?” is a crucial one. Market opportunities may open up with the development of new products, but constraints may exist which limit the ability of the poor to access the opportunities. The poor may not have the access to the skills, technology or capital necessary to be able to benefit from the opportunities presented by the markets. They may be dependent on traders or other intermediaries for access to those markets. Thus the benefits from NTFPs, and sometimes control, then accrue to outsiders.

Box 3. Differential interests in NTFPs within rural communities

Villages are often politically fractured and socially differentiated in complex ways. Fractures in the local community may run along gender, class, age or ethnic lines of identity.... Lines of differential access and ownership between men and women may be drawn depending upon the type of activity, type of product, the species, the location or the intended use of the product. It is quite possible that men and women make conflicting claims on NTFPs. In such a situation, interventions for conservation and community development may favour one group over another and exacerbate inter-gender conflicts.

Pronounced socio-economic stratification within communities can lead to the formation of class interests that may conflict on the question of NTFP use. Conflict may be particularly strong in cases where NTFP extraction for market sales is being promoted as a sustainable development alternative. In such a situation, profits may flow to the wealthy who have the capital knowledge and resources to mobilise labour and transport products to market. In effect, where patron-client relations exist, sustainable development projects based on NTFP extraction can serve to perpetuate or reinforce those relations without substantially improving the livelihoods of the “local people”, the exception of very few individuals

Source: Neumann (1996)

Leave the forests for the poor

In reporting on the results of a series of research studies into dependence on access to forest outputs, Ogle (1996) has commented:

In situations where agricultural productivity is low better off households may use forests and forest products to complement and improve their household economy, while poorer households, who find livelihoods difficult to sustain may rely on the forests as the primary means of survival or in crisis situations. In many areas as pressures on the forests increase, more products are extracted, consumed or sold, more encroachment takes place and the depletion of forest resource can be rapid. The poor, more forest-dependent households will then find livelihoods even more difficult to sustain.

With regard to the implementation of NTFP intervention programmes and research it is important then to consider the following:

- Growing demand for NTFPs will tend to be concentrated on a declining number of products of commercial value and access to their production and marketing is likely

to be increasingly limited to those with particular resources and skills.

- Many NTFPs are facing or are likely to face declining market opportunities and or decreasing competitive improvement, and so could be of less value in the future.
- Decline in the position of NTFPs, concentration of control in the hands of the local elites and outsiders, and the impact of overuse on the resource could have serious implications for those categories of users who are most dependent upon NTFPs to help meet their subsistence and income needs.

At the end of the day what we are asking is “what is the overall management objective?” for any given piece of woodland. The two possible management objectives for subsistence services and benefits or for commercial enterprise are quite different and require different management mechanisms that may not easily be reconciled. This is discussed further in Section 4.

Institutional and policy context

This institutional and policy context is crucial as it is these frameworks which will determine whether commercialisation leads to conservation or over-exploitation. For example lack of long-term security over benefits increases the incentive to grab short-term but immediately available gain, rather than wait for long term but potentially better but uncertain gain.

The increasing effect of market forces can weaken the institutional capacity to manage forest resources locally. Although market demand for its produce can give added value to a resource which could increase the incentive for conservation in order to secure its future availability it can equally subject the local control and management systems to increased pressures.

Past national policies have been blamed for not providing incentives for local people to take an interest in conservation. This was one reason for the fast growing interest in CBNRM. The “addition” of NRBEs makes CBNRM even more sensible – now at last the people understand what they are managing woodlands for and why it makes sense for them to have control.

Discussion

In brief it is now clear that it cannot be taken for granted that NTFP enterprise development will coincidentally meet both developmental and conservation interests. Attention is likely to be more effective focussed on understanding the areas in which they concur, those in which they are in conflict and in determining what balance between development and conservation is desirable and achievable

Whilst each situation and potential NRBE must be considered as a separate case there are some trends that should be considered in all cases such as:

- A focus on developing market outlets for NTFPs needs to be kept in balance with consideration of the huge continuing use of NTFPs for subsistence use
- It is important to target and understand correctly the characteristics and dynamics of different markets and product situations. Much emphasis has been on developing products for the international markets – but these are susceptible to changes. Domestic markets may provide more easily realised avenues for development.

Different situations have different potentials and limitations that call for different responses. People searching for activities with which they can economically sustain themselves face different needs than those who are responding to market opportunities. It may often be necessary in designing and implementing policy

and other institutional interventions to distinguish between those who can improve their livelihoods through NTFP activities and those who have no option but to gather NTFPs in order to survive.

SECTION 2. OBJECTIVES OF THIS STUDY AND METHODS

2.1 OBJECTIVES

BACKGROUND

In response to a proposal from the two NGOs Greenline and Wildlife Society of Malawi (WSM) this study was commissioned in order to assess the feasibility of the development of community-based natural resource based enterprises in the target area of Machinga district. The rationale behind the proposal stems from three main propositions:

- people are poor and struggling to make ends meet through their traditional activities i.e. mainly farming and petty trading
- the indigenous woodlands in the area are relatively extensive and yet are currently being heavily exploited for income generation, on top of the traditional subsistence uses, and are being threatened with degradation as a result
- in this area, there are already a number of examples of commercial use of natural resources notable the manufacture and sale of curios made from hardwoods and the harvest and sale of wild mushrooms

At present, the range of resources that are exploited on a commercial basis are fairly limited. Moreover, the economic benefits accruing to the communities are not as great as they might be if better marketing strategies and linkages were developed. Based on experience elsewhere in the SADC region, the potential for greater commercialisation of non-timber forest products such as wild mushrooms and honey appears very good. Furthermore, there is considerable potential for adding value to timber and non-timber forest products if they can be certified as being harvested sustainably as well as from unpolluted environments and where a significant proportion of the financial benefits are realised by rural communities.

The challenge then is to design development strategies that can add further value to the NRBEs already in existence and identify new opportunities. At the same time as catalysing progress in economic development it will be necessary to look for mechanisms that ensure that commercialisation happens not at the expense of natural resources but through the wise use of these resources so that any gains made in economic development can be sustained.

Recent changes in forestry and national parks policy and legislation allow for communities to develop new and potentially creative arrangements to access and manage these resources. Notwithstanding the opportunities that such liberalisation creates, it remains essential that the ecological and socio-economic sustainability of such ventures are carefully assessed.

While the immediate foci of this study are the communities bordering several protected areas in Machinga District, many of the lessons learned here are applicable to other parts of Malawi. With this in mind this study will also superficially address the opportunities with the vicinity of Liwonde National Park and within the other five COMPASS focal districts of Chikwawa, Rumphu, Ntcheu, Dedza and Nkhata Bay.

OBJECTIVE

To assess the potential for improved management and commercialisation of natural resources found mainly (but not only) within the protected areas of Machinga District and the other five COMPASS focal Districts based on the available resource base, community interest and capacity and the ability to ensure ecological and economic sustainability as well as social equity.

To develop an Action Plan for timber and non-timber forest products (and other natural resources) that can be discussed by all stakeholders and be used as a first step toward establishing agreements and partnership between government departments and community groups that empower the communities to adopt CBNRM strategies.

2.2 METHODS

DATA COLLECTION METHODS

The study involved two main parts. The first was to gain an overall view of natural resource based enterprises within Malawi and the region and to benefit from the experience others have had. The second was to make recommendations about the Machinga site in particular and therefore about three weeks of fieldwork was undertaken in the target area.

General overview

- Consultation with other professionals and practitioners working in the field of NRBE development
- Literature review covering other projects, market surveys and research on the role of NTFPs in development and conservation
- Attendance at the Southern African Natural Products Trade Association (SANProTA) business meeting in Harare
- Field visits to other COMPASS focal districts

Machinga specifically

- Consultation with the organisations and institutions concerned with the management of the natural resources in Machinga District
- Consultation with the resource users, local resource managers and those involved in income generation from natural resources trading and processing
- Collection of data such as how are the resources utilised, by whom and what quantities, prices and sale. A very small market survey was also undertaken.
- Observations on the condition and utilisation of the resource base
- Literature review
- Attendance at a meeting held in Machinga to discuss the problems of deforestation. The Forestry Department, the Greenline Movement, local traditional leaders and the District Environmental Officer attended the meeting.

ANALYSIS APPROACH - PRODUCTS

The analysis is important to answer the question “What interventions are required to make commercial use of natural resources contribute more to rural peoples incomes and conserve the resource base at the same time?”. In order to use the information collected to make useful and rational decisions about possible interventions the following analysis approach was adopted. It is sensible in the first instance to focus on a few resources and a few products and a few intervention strategies. The following steps were taken.

Select the products

In order to select the products a number of criteria were used. These are shown in Section 7 but include such criteria as: number of people involved, market opportunities, existing knowledge by both local people and “the technicians”, market value and conservation implications. In this study one of the main criteria was whether there was already good information available about the product in question and “potential” products that would require considerable research and development are not considered a priority.

Making the business more beneficial

A Production-to-Consumption model was used (partially) to identify areas in the chain from production to consumption which if changed (improved) would lead to more benefits for the rural poor, the enterprise itself and / or conservation of the resource. This is where “adding-value” comes in.

What is the Production-to-Consumption Systems Approach?

The PCS provides a framework within which to organise the many issues that need to be considered in developing a forest product. It is important to recognise that a forest product is a commodity that may change hands several times and go through a series of processes before it reaches the final consumer. Demand for the raw forest product depends on the demand for the final product, and therefore upon the organisation and efficiency of the whole system. The PCS approach provides a framework within which to assess the opportunities and constraints in existing NTFP systems and to draw lessons from present practices that can be applied to other new and evolving systems. The PCS considers the production, processing and marketing of biological products according to three dimensions: vertical coordination, horizontal linkages and the intensity of the activity.

These are explained.

- Vertical dimension. This consists of a description of how and under what conditions a raw resource is transformed into a final product. It may for example be collected, sorted, cleaned, semi-processed, processed, transported, sold and sold again. This is the vertical product flow. There are also vertical linkages that describe the relationship between each transformation. Research has shown that these relationships can be as important as the physical processing activities themselves. A typical relationship may be one of a contract and this can be very useful e.g. a buyer places an order with specific specifications or the trader provides inputs to facilitate production of the required product. Analysis of the vertical linkages can iron out misunderstandings. For example it is common for forest product market studies to conclude that the middleman is taking excessive profits. Before making such a judgment by looking at the cost increase alone, it is important also to ascertain what services are provided by the middleman and at what cost.

Examples of positive interventions identified by such an analysis:

- Encourage stronger vertical linkages, facilitating direct relationships especially between raw material producers and buyers
- Where possible displace exploitative relationships with more benign relationships (but be aware of that discussed above i.e. many middlemen are not exploitative but provide a valuable service to the enterprise)
- Improve the bargaining position of raw material suppliers by providing them with market and price information
- Horizontal linkages. These are the relationship between participants at the same level in the vertical chain. The linkages are important and useful for the exchange of information, consolidating power in buying and selling and to mobilise political

support in lobbying for policy change. Some of the stronger associations for example can act as cartels.

Examples of positive interventions identified by such an analysis

- Establish co-operatives to share the expense of costly equipment
- Encourage collaboration to meet large-quantity orders for certain items
- Intensity. Intensity here refers to the quality and quantity of inputs at a particular point in the PCS. Low intensity production may be collection from the wild whilst high intensity production maybe cultivation or at least enrichment planting. High intensity processing might require expensive machinery producing high quality goods as opposed to rough processing producing crude products. In a vertical PCS the intensity may vary from the beginning to end i.e. low intensity collection may lead to high intensity production or vice versa. High intensity is not necessarily better, profit margins are what count.

Examples of positive interventions identified by such an analysis

- Assistance can be provided to help people manage the resources more intensively
- Advice about new technology can be provided to improve quality or quantity of processed product

Opportunity costs of intensified production must always be carefully considered – especially the conservation trade-offs.

The challenge is to use a natural resource PCS as a basis for increasing employment and income-generating opportunities for poor people, and to generally improve welfare within a context of sustainable raw material production. The discussion above shows how this might be done.

New processes and new products

Through literature and meeting other people and projects new products were identified which could form the base for new NRBES. This part of the work quickly resulted in a long list of “potential” products about which very little is known. It was not possible within the TORs of this study to explore in any depth many of these products and whilst they may be mentioned in passing, emphasis is placed on “known” resources and products. A list of “potential products” could include medicinal plants, floricultural products, lichen etc. These were little explored.

SECTION 3. FINDINGS, ANALYSIS AND DISCUSSION CONCERNING THE RESOURCES AND UTILISATION

3.1 THE WOODLANDS

The forest reserves of Liwonde and Malosa cover an area of 294.73 square kilometres and 110.9 square kilometres respectively. Malosa FR merges into Zomba Mountain Forest Reserve whilst Liwonde FR comprises a range of hills named Chikala, Mongolowe and Chinduzi. The M1 divides the Mongolowe and Chinduzi hills. Liwonde FR falls entirely into Machinga District whilst part of Malosa FR falls within Zomba district, the boundary falling along the Likwenu River.

The majority of the woodlands are miombo and dominated by species such as *Brachystegia bussei*, *B. utilis* and *B. boehmii* found in association with species such as *Diplorhynchus condylocarpon*, *Uapaca kirkiana*, *Pterocarpus angolensis*, *Pericopsis angolensis* and *Pseudolachnostylis maprounefolia*. As with all miombo woodlands the species mix and size class distributions vary from one location to another depending on variations in soil type, altitude, topography and also utilization and fire regime. The riverine areas tend to support another species mix including *Syzigium* species, *Faurea saligna* and *Ficus* species and in pockets of the higher parts of the range of hills evergreen forest is found e.g. the summit of the Chikala hills.

There is a band of eucalyptus that was planted at the bottom of the hills during the World Bank Wood Energy Project of the 1980s. The plantation area reaches approximately 3222 hectares.

The hills are the source of several important rivers such as the Chigwandembo, the Mpelesi and Likwenu. The Lisanjala is a river originating from Malosa FR and has dried up in recent years much to the concern of local people. This problem was one of those that stimulated the formation of the local NGO Greenline.

To get a picture of the tree component of woodlands the results of two inventories are very briefly summarised here. For the methods, site details and introduction to both inventories the reports can be referred to.

Chikala Hills 1981.

In summary the main or constant species are recorded as *Brachystegia bussei*, *B. boehmii*, *Dalbergia nyasae*, *Diplorhynchus condylocarpon*, *Julbernardia globiflora*, *Pseudolachnostylis maprounefolia*, *Pterocarpus angolensis*, *Terminalia stenostachya*, *Xeromphis obvata* and *Ximenia caffra*. The inventory as a whole however revealed a total of 45 species in all plots, which totaled 3 ha but a large number of species were only recorded occasionally. On average 490 trees per ha (5cm dbh and above) were recorded which appeared to fall into three distinct layers: a primary canopy of tall *Brachystegia bussei*; a secondary canopy containing *Julbernardia globiflora*, *B. boehmii* and *Pterocarpus angolensis* and a mixed species understorey. It was noted that there was an almost complete absence of *Brachystegia* and *Julbernardia* saplings – i.e. between the seedling and 10cm dbh size classes. The author of the report considered that this could be due to the inability of these species to survive regular fire during their young stages and he then goes on to discuss how the existing canopy came to be established in the first place.

The most preferred curio species *Burkea africana* was indicated to be a “less common species” at an average stocking of 5 trees per ha (over 5cm dbh) with a mean dbh of 19 cm. *Pericopsis angolensis* was also indicated to be a “less common species”. (FRIM Report 81004).

Ndaje Co-management area 1999

The results revealed that *Uapaca kirkiana*, *Brachystegia spiciformis*, *B. utilis* and *B. bussei* were the most abundant species with more than 50 stems per ha. 114 species were recorded in the total area sampled of 7 hectares with the average number of stems per hectare (of 5 cm dbh and above) in the region of 350. The diameter distribution result indicated, as in Chikala, a disproportionately low number of *Brachystegia* trees in the 10 cm dbh size class despite a high number of seedlings. Interestingly the explanation offered in this report is related to preferred sizes for utilisation as opposed to fire intolerance as in the Chikala discussion. For all species together however the diameter class distribution gives a clear negative exponential (inverse J-shape) despite the *Brachystegia* diameter distributions. There is a persistent stocking of the curio species *Pericopsis angolensis* with an average of 50.9 stems/ha but perhaps no more than 8 trees per ha with dbh above 20 cm dbh. *Burkea africana* was stocked at 13.3 stems per ha on average but this includes all trees above 1 cm dbh. (FRIM Report 99002).

3.2 RAW MATERIALS

There is clearly a wide range of raw materials that can form the basis of product development. The study was by no means exhaustive and some categories such as medicines, roots, wild relishes and fibres have not been covered. On the whole people would bring to our attention those resources which were in abundance and where there as a known market for the resource or product.

Wood resources.

No inventory was done as part of this study. In addition to examining the data from previous inventories some direct observations were made. Observation of the woodland through woodland walks revealed that within 2-3 km of the external boundary of the reserve the tree species represent the typical miombo species with dominant *Brachystegia* species, some dense mono-species stands of *Uapaca kirkiana* with some rich bamboo resources. Concerning tree sizes, on the whole little above 20 cm dbh was encountered. Regeneration was patchy and in some cases very sparse. There is little undergrowth and evidence of repeated burning. The areas are undergoing heavy utilisation and there was much evidence of tree cutting. Almost no good quality, good-sized timber species were seen although the walks were only in small areas, of course. Some good-sized *Pericopsis angolensis* (mwanga) was seen near the forestry office, it was at first judged that felling would take so long and be so noisy (hard wood) that the feller would be unlikely to get away with it. Later we then found several (recent) stumps of large mwanga. Through interviews people told us that much of the curio timbers were coming from Kambende and Chinseu areas, high up and more or less into the Zomba mountain area.

There are some localised areas of encroachment e.g. Malopa area which in conservation terms has the most destructive impact, but not far behind is the impact of charcoal burners which is evident in the Domasi side of Malosa FR.

Non-woody resources:

Mushrooms including species such as *Cantharellus* species (chipatwe), *Lactarius gymnocarpus* (kungulokwetiti), *Amanita* species (utenga) and many others are

considered important. These are found in abundance in the Chinduzi and Mongolowe hills in particular although some respondents indicated that their abundance is not uniform, for example, few in Malopa village. Many species of indigenous fruits occur, the masuku (*Uapaca kirkiana*) are very abundant and are found in almost mono-species stands in many locations although some reported a local scarcity e.g. Naungu. Other species listed include *Azanza garckeana*, *Strychnos spinosa*, *Flacourtica indica* and *Vangueria infausta*. Masuku was always the species mentioned most frequently and said to be most abundant. Bamboo was said to be abundant and was given as a potentially under-exploited raw material, although it was remarked that there is a fine line between under and over exploitation. Thatch grass is a very important resource and some people make money from collecting and selling. These days there is little conflict with the FD over early burning because the early burning regime has stopped. The host of other plant species used for medicines and fibres for example were not looked into. Some reeds are found in the forest reserve and these are used for mat making.

On customary land, which is essentially farmland, there are few areas of indigenous woodland remaining. In Liwonde the natural resources available on customary land include (among others) the *Hypaene crinita* palm, *Adansonia digitata* (baobab), mango, *Zizyphus mauritiana* (masau) and a few mopane (*Colophospermum mopane*). Higher up in Machinga one finds chiwale (*Raphia farinifera*), mango and reeds. The vine *Cocculus hirsutus* (Nangoneka) used for basket chairs is widely distributed.

3.3 UTILISATION PATTERNS AND PRODUCTS

The miombo woodlands described above are heavily exploited for all the typical uses related to miombo woodland such as firewood, timber, poles, charcoal, fruit, fibre, mushrooms and medicine – to name just a few. Whilst the reserves have in theory been protected areas since 1924 they have been subject to considerable use both legal and illegal not only recently but also in past decades.

The forests are used as a “super-store” of *subsistence* goods and services. This goes without elaboration. Whilst undoubtedly this usage has an impact on the forest, the general opinion is that the forest is able to provide a vast quantity of these subsistence goods without suffering from over-exploitation. Subsistence use tends to be extremely diverse and spread relatively thinly over time and space. Population pressure can of course reach such levels that even local usage can have an impressionable negative impact especially if there is no management to speak of.

The forests are also used as sources of income generation and there is considerable trade in forest products of all kinds both within village and roadside markets. Natural resources are of course also found on customary land and they may or may not therefore be subject to some kind of management. Fruits trees in particular are deliberately left to grow to maturity.

Subsistence use, village trade and local markets

The subsistence uses include firewood, rope fibre, poles and bamboo, thatch grass, fruits, mushrooms, reeds, medicines and wild relishes. Within the village some of these products will also be traded, for example, thatch grass and also some products such as palm leaf or reed mats, the local bamboo baskets and chiwale furniture. It would be difficult to identify any strategies that would enhance these activities as the market is well known, understood and accessible by those interested in trade and yet expansion is limited by the low purchasing power of the village people. Some honey

is collected wild from the forest and very few individuals have beehives. Honey is consumed in the home and some is sold locally. Mushrooms are eaten fresh, dried for future use whilst fruits are mostly eaten fresh or sold. Those informants near the Chingale roadside said all the mushrooms in the forest are finished whilst those near Lake Chilwa said they could not manage to collect and eat all mushrooms and they are far from markets to sell. There is a local market in masuku (Machinga) and masau (Liwonde)

The timber trade

The utilisation of the reserves for the sale of firewood, charcoal, curio making and timber are the activities that cause the conservationists the most alarm. The sale of firewood around Machinga and Liwonde and the sale of charcoal at Domasi in particular has expanded considerably in the past few years and the impact on the forest can clearly be seen by anyone travelling in a car along the M1. Charcoal burning and selling at Domasi accelerated recently as a result of election campaigning on the part of the local MP. The resultant deforestation is clearly evident – more so than firewood which results in a general thinning out of the woodland rather than almost wholesale clearing. Charcoal burning also happens in other part of the reserves but less concentrated than the Domasi site.

The extraction of hardwoods for timber has been going on for years and several respondents alleged that most of the extraction is done with the consent if not direct involvement of the forestry staff. The extraction of high quality timber is selective therefore less obvious to the casual observer than the firewood and charcoal utilisation. Despite the “noise” made about the curio makers the activities of these people almost certainly uses less wood on an annual basis than any of the former activities. Managing the woodland for all these timber uses is technically highly possible although under existing forest law this would be illegal. It is worthwhile considering that given that the “number one” major resource within the reserve is trees it is highly prudent to consider deliberate management for these resources in order to generate the income and the incentive to ensure the forests future survival.

The collection of deadwood by the headload has always been permitted under forest reserve regulations. Of late (very recently) the selling of headloads of deadwood and also mendles of split wood derived from live tree cutting has increased enormously. Firewood selling points can be found at Ndaje (the co-management village), Mposa and Chingoli. A headload is sold at MK 50 or MK 90. A number of men and women are involved and several congregate at one site. Not each women sells a headload every day and they make between MK 300 and MK 500 per month. Men sometimes cut trees for firewood selling and may sell in larger quantities. The women said that the fire in the forest was too much these days and burns the deadwood. Some women said they sold the left-overs from the curio makers.

Roadside and external trade

Firewood and charcoal are sold at the side of the road. Fresh mushrooms, fresh mangos (included in this report as a natural product as opposed to agricultural although this is debatable) are also sold this way at the Chingale roadside and whilst basket chairs and palm leaf mats are sold nearer to Liwonde. Fruits such as masau and masuku also have a certain market and can be found at the roadside and in local markets. Chiwale is a naturally growing palm in the riverine areas both in the FRs but particularly on customary land. The stem of the leaves is used like wood to make furniture. One chiwale furniture maker in Ndaje village has been making chiwale furniture for 25 years and in doing so appears to have completely depleted the Ndaje resource and now collects the materials from other places. In the past he used to pay for the resource — to the FD – but now he does not. This is an interesting

observation – buying a permit from the FD in no way signified that the resource was being managed as via this method the furniture makers managed to destroy the whole resource.

With the exception of the FD and of late the Greenline movement there is little evidence of any individual, group or organisation taking any action to manage any indigenous woodland or natural resources within the FR despite its obvious value to local people. Utilisation is the only activity. Some of the more productively useful resources such as fruit trees and bamboo on customary land are however passively (if not actively) managed.

Detailed information about the main products is found in Annex 3 whilst Section 7 is dedicated to discussing the products that are recommended for further development and why.

Whilst discussing product development and marketing it is important to remember the very important subsistence benefits. Mwanga (*Pericopsis angolensis*) is a valuable curio species and a large tree can generate significant income if used for high quality curios. On the other hand mwanga is a desired tree species in the construction of local latrines. Which is the better use of the wood?

Interestingly rural people regard indigenous trees as “fair game” when it comes to “helping oneself” from the reserves, whilst they are more reticent about taking bluegums without permission. This is only partly due to the better firewood value of indigenous trees, it is also to do with the fact that because the bluegums were planted by the FD local people recognise that they do indeed belong to the FD. With indigenous trees this is not so. The forest guard asked one firewood seller where he obtained the wood that he was selling. He said the indigenous tree pieces came from the reserve whilst the bluegums came from his garden. This was almost certainly not true. He did not fear telling the truth about the indigenous species but was worried about being found with bluegum.

Most of the people who use the forest for income generation live near Liwonde or the M1. They may travel far into the reserves to find what they want. People from further away are less likely to travel to the market places with produce to sell however.

3.4 TENURE AND MANAGEMENT

Tenure is absolutely critical if one is considering developing a natural resource based enterprise using natural resources as “without secure tenure for producers of raw material there is no incentive for sustainable resource management or for resource enhancement”. Tenure is not ownership but access rights.

Forest Reserves

The Forest Reserves belong to the Forestry Department who has sole responsibility for management. During the past few years (5-10) their control over what happens in the forest has declined considerably. The DFO reported that boundary maintenance and fire control simply is not carried out, the permit system hardly functions and patrolmen are few and ill equipped. Even in the past however one could argue that the reserves were not managed but protected, an approach that is acceptable if it were not for the very high need of local people for both the subsistence and income generation opportunities that these extensive resources can provide. A simple way of thinking about these issues which was used during the fieldwork is that:

Management = Utilisation and Conservation at the same time.

Local people traditionally are accustomed to **using** natural resources but because they are by nature “natural” and “God given” the idea of man nurturing these resources is somehow alien. As one curio maker said “I have never seen a natural tree conserved by man”. The Forestry Department by contrast is traditionally accustomed to **conserving** natural resources only allowing minimum utilisation if they have to. These two opposing forces utilisation by the people and conservation by the FD has resulted in antagonism and confrontation and, as the FD began losing control, to over-utilisation and eventually degradation. Management is the only sensible option.

The new forestry policy allows for co-management, a management option which involves the sharing of responsibilities, rights and returns between local people and the FD. Co-management is being implemented in Liwonde FR by the villages of Group Village Headman (GVH) Ndaje. This is facilitated by the FD-led, World Bank-funded Co-management project. The initiative has made some progress by identifying blocks of FR to be managed by identified villages. Village natural resource management committees have been elected and have shouldered some responsibilities for patrolling and punishing culprits. The initiative apparently started with some enthusiasm, which is gradually wearing thin. The main problem seem to be that the FD made promises which were not fulfilled especially the training of the VNRMCs and that the community at large are not supportive of the whole process instead concluding that the initiative is simply a way for the FD to make local people do their job for them for no pay. These problems should not be taken lightly and, whilst it does appear true that the project has delivered little and facilitated little, some of the underlying weaknesses remain i.e. the existing incentives for the local people to enter into co-management are not enough for them. Once again this stems from the traditional belief that natural resource are simply there to be utilised. This subject will be discussed further in Section 4.

Fire

Fire is an extremely important management issue. In the past the FD used to practice at least some fire management, which involved making firebreaks and carrying out early burning. To date there is no fire management at all and the forest burns hard and repeatedly. Whilst there is no doubt that the existing woodlands are somehow fire created it is certainly true that the woodlands cannot thrive under the existing frequency of fires. 99.9% of fires are man induced, if not 100%, and as the population increases and the intensity of utilisation of the woodlands increase so does the frequency of fires. It is unlikely that there has ever been any time in the past when the hills of Malosa and Liwonde FRs have been subjected to fires as today.

The main impact of the fires is the destruction of seedlings, saplings, suffrutices and coppice shoots. Mature trees of most species can withstand fire but most of the regeneration bar a few of the most fire hardy cannot. The forest is thinning out, with the most fire-sensitive becoming less prevalent.

The causes of the fires are many and it is difficult single out any major cause. They are listed as:

Accidental whilst doing something else

- Spread from people cooking in the forest (e.g. curio makers)
- Spread from people clearing the gardens
- Spread from people using fire to drive away bees

Deliberate – with a purpose

- Clear vegetation in order to see animals (to kill or to avoid danger), good timber trees or FD patrolmen
- Hunting
- Early burning carried out by the Forestry Department - too late and with little control

Deliberate – with no purpose

- Sabotage
- Pyromania
- Because people think this is what is “supposed” to be done, as evidence by one member of the a VNRMC who thought that putting fire in the forest in October was a correct management procedure. When asked what the purpose of that fire might be he said – “to clear away the leaves”.

One reason that was not given (but might be the truth behind what the VNRMC member said) might be to encourage the density of thatch grass. It might be that people think that burning the forest regularly after thatch grass collection keeps down the undergrowth and encourages a good grass crop next year. Both this and the actually act of cutting the grass may remove many young regenerating tree seedlings and saplings. Is grass thatch somehow incompatible with a regenerating forest? Fire management in miombo woodlands – from a forester’s point of view - has been well studied and well documented (Probyn, 1997). What are less well studied are the local communities attitudes, practices and knowledge concerning fires “in the bush”. This represents a gap that needs filling if the fire issue is to be addressed.

Customary land natural resources

Allocated customary land falls under the responsibility of the person to whom it was allocated. There is little clarity about the ownership of the natural resources (NRs) on that land, however, stemming from the traditional belief that natural resources do not belong to anyone. Nevertheless as populations expand, as people become more household-oriented and as demand for NRs increase, individuals tend to try to assert more and more ownership over these resources. For semi-indigenous resources such a mango and masau and planted resources such as exotic trees and bamboo there is less ambiguity, with tenurial security strengthening the nearer the resource is to the homestead. A person has quite strong tenurial security over a baobab tree found in front of his house for example, even though this is a purely natural resource. Natural resources on unallocated customary land tend to be treated as open access except when it comes to valuable resources whereupon the village headman claims ownership to the extent whereupon he feels free to sell resources such as hardwood timbers – contrary to his traditional role as the protector, not the owner, of village lands.

Natural resources on allocated customary land may to some extent be managed in that they are consciously incorporated into the farming system but management is by and large quite passive. Efforts are made to keep fire away and naturally growing fruit trees are left to grow whilst other trees maybe removed.

The difference between customary land and forest reserve land is quite different in both terms of natural resources, management and tenure. On customary land there is also a great difference between allocated and cultivated land and unallocated land/bush. People have greatest control over those natural resources on their own farms and if no viable management system can be designed for the other areas it is more rational for rural people to invest in product development based on those products over which they have control. Management systems are discussed in Section 4.

SECTION 3.5 THE FOCAL DISTRICTS

In addition to Machinga, the COMPASS focal districts are Chikwawa, Rumphu, Ntcheu, Dedza and Nkhata Bay. In the course of this study the resources within each of these districts were considered for their potential as a basis for NRBEs. Time however limited the survey to be largely superficial.

Chikwawa

The main NGO to be working in the district is the International Eye Foundation. For a number of years they have been involved with the promotion of *Moringa oleifera* for oil production, amongst other uses. Recently the NGO prepared a proposal, jointly with the Management of Lengwe National Park, the Department of Forestry and Ministry of Agriculture to implement a sustainable CBNRM project. A core activity of the proposed project is the promotion of *Moringa oleifera*, *Azadirachta indica* and *Jatropha curcas*.

Neem oil can be used for the production of soap and pesticide but also can be used as lamp oil or to grease wheels of ox-carts. The oil can be extracted by either by hand or using a press. The seeds contain about 45% oil and with the hand method, 150ml oil can be extracted from 1 kg of seed, or about 200ml when using a press. On average a mature tree can produce 20-30 kg seeds per year. The oil of the *Jatropha* seeds can be used to make paraffin and also in modified diesel engines of maize mills or irrigation works. The oil can also be used to make soap and as an insect repellent. One litre of oil can yield about 1 kg of soap.

In Chikwawa there is particular interest in working with communities adjacent to the Lengwe National Park. It is anticipated that alleviating poverty in the surrounding communities and reducing the need for certain resources will reduce pressure on the park. The Lower Shire Wildlife Development Project has a component of community participation and it is likely that arrangements for benefit sharing and / or access to resources that can be sustainably managed will be put in place. Adding value to such resources can enhance the positive impact for economic development and conservation.

In a recent development the Malawi Agroforestry Extension Project has employed a development and marketing specialist for agroforestry tree products. As a result of his preliminary research work, he has identified tree oils as an area worthy of future investment. All of these species moringa, neem and *Jatropha* that grow well in the hot dry climate of Chikwawa are included.

Chikwawa district is also one of the areas where *Sclerocarya birrea* (Marula tree) forms a significant component of the vegetation. A recent study however indicated that there is poor regeneration of the species. Several factors such as low seed viability/long period of dormancy, long harsh dry season, dry season fires and fruit consumption by animals and humans are suggested to account for the low stocking density of individuals below 20 cm dbh (Khonje et al 1999). Nevertheless the fruit is one of the most valued indigenous fruit trees of Sub-Saharan Africa and can be eaten fresh or processed into many forms. The kernels produce extremely valuable oil. The Malawi fruit is said to be less sweet than that found in Botswana and Namibia where the fruit is more important still (F. Taylor pers. comm. 2000).

Rumphu

Nyika National Park and the Vwaza Game Reserve fall largely within Rumphu district and there is considerable potential to commercially exploit some of the

natural resources that abound within the protected areas in addition to tourism. Indeed many resources are already traded but mainly in an unprocessed form e.g. wild mushrooms, fruit, reeds, and termites. The Nyika Vwaza Borderzone project has put some significant effort into assessing the resources that are there and their value. There has been little work done on adding value however although a report by A. Seidel (1998) indicated the scope for processing some of the natural resources.

Honey is one of the most major resources as has been discussed in Section 7.2.

The Makhama palm (*Borassus aethiopicum*,) which is found throughout the district particularly the Bolero Valley, is a very interesting natural resource with considerable potential. The fruits are produced only once the tree has developed its characteristic bulge and are ripe in October / November. The outer part of the fruits are much liked locally especially by children. Sap from the tree yields a drink called "nchema". The leaves can be made into fibrous strips to make mats, baskets and fishing baskets. Over harvest of the fronds from the young trees inhibits their growth whilst the most destructive use is cutting the entire tree to be used as a roof beam. (Community resource utilisation report, Vwaza Marsh Wildlife Reserve)

Ntcheu and Dedza

These districts were not visited within the period and so information is limited. The pine plantations of the Dedza Mountain and Dzonzi Mvai in Ntcheu may well support significant quantities of the pine-dependent edible mushroom *Boletus edulis*. This mushroom is easily identified, there is no risk of confusion with any poisonous species and is known widely in Europe. It is however little favoured in Malawi because it is an exotic (came in with the pines). Any mushroom processing initiative would do well to include this species.

The community based organisation Bwanje Environmental Rural Development Organisation (BERDO) of Bwanje Valley appears exceptionally well organised and are interested in branching out into income generating activities. The natural woodlands of Bangwe forest reserve fall within the area of the organisation that may be able to develop a co-management agreement with the FD based on beekeeping.

Nkhata Bay

This district is exceptional in its abundance and richness of natural resources. The high rainfall of some parts of the district allows rainforest type woodland to develop. Amongst a vast list of possible activities ecotourism, beekeeping and fruit processing were highlighted through local interviews.

Box 4. A tale of two beekeeping groups

Kalwe Beekeeping Club started their beekeeping activities in March 1992 under the Beekeeping Project of the DNPW, Mzuzu. The Chairman of the group – Mr. Mbewe - is also the chairman of the project area committee. They started with a loan for buying 10 hives and some equipment and they managed to pay back the loan quite easily. At first honey was sold through the project and then through the Beekeepers Association of Malawi. They wanted to increase the number of hives from 10-20 and gave money to BAM but they never received any more hives. Then BAM got into problems and collapsed in 1995. Gradually the hives rotted and broke and they only have two left. With the collapse of BAM they lost their market and whilst they tried to sell their honey in Nkhata Bay on the whole they failed. They still are highly interested in beekeeping and selling honey but now they are in trouble. They noted that the only indigenous forest left within the locality is where the beehives still remain.

Chisasira Beekeeping Club is headed by Fraydom Manda and was established in 2000 with a grant from COMPASS. This activity involves 150 people from 6 villages and the aim is to place beehives in an area of natural woodland both to prevent degradation of that woodland and to produce a marketable product. The area in which they want to put the hives – they have 30 to date (Sept 2000) – is 2000 hectares of indigenous woodland on customary land. The chief has decided to no longer allow people to open gardens in this area. Concerning markets the group have approached Bandawe Secondary School, Khande Beach Campsite and Tambala Foods. The project will be managed communally.

The natural beauty and biodiversity of the district – and the already thriving tourism at the lakeside - makes it ideally suited for ecotourism development. The District Forestry Officer suggested that one simple way of exploiting this opportunity was to open a gate and nature trail within the Mkuwadzi Forest Reserve. The local community adjacent to the entrance point could be allowed to man such a gate, collect fees and provide local guides. Minimal development would be needed to provide nature information and to administer the initiative.

There is considerable fruit production in the district, both exotic and indigenous. Exotic fruits include banana, oranges, lemons, pineapple and avocado. There is no fruit processing. A project was once started in Chikwira where soap was made from avocado. Reports indicated it was not a success.

Liwonde National Park.

Given the proximity to the FRs of Malosa and Liwonde it would appear prudent to explore those activities that could encompass LNP as well. Having said that the ecosystem and climate of LNP and the hills of the FRs are quite different with few resources in common. Nevertheless the existing policy within the DNPW is to endeavour to reduce pressure from protected areas in a positive people-benefit way as well as strict enforcement. Any local business that can be established dependent on sustainable use of natural resources must only assist with this process.

The park is rich in natural resources. Those resources mentioned by the Parks Manager include: palm leaves, grasses, reeds, thatch, baobab fruit, tamarind fruit, termites, fish, firewood, marula fruit, mopane worms and bees. Clearly only a few of these resources have the potential for development into a marketable commercial product. Although both marula and mopane worms have formed the basis of viable businesses in Botswana and Zimbabwe the production at LNP may not be sufficient to support a commercial activity of any size. Given the experience of making baobab and tamarind juice in Malawi elsewhere it might be more useful to use the information generated to expand production to other areas of Malawi – and the LNP locality may well be one such location. The existence of Mvuu Camp and Lodge and Chinguni Lodge represent real opportunities for local people to provide the tourist facilities with quality curios and handicrafts. They could also find a market for honey, fruit juices and guinea fowls at these establishments. The Parks Manager also raised the idea of

an artisanal village where goods produced from sustainably managed sources could be sold.

The research unit of the park would be responsible for monitoring utilisation rate and environmental impact.

SECTION 4. DISCUSSION OF LAND USE, ECONOMICS AND MANAGEMENT OPTIONS

The hills and forests of Liwonde and Malosa Forest Reserves represent a resource which for the benefit of the local people and the nation of Malawi as whole – by rights – should be managed in a way to optimise those benefits – taking into account all issues pertaining to economics, equity, sustainability and the environment. Looking at the curio makers or the mushroom sellers is in some ways the next step up – first we have to go back to basics – what is the best use of the land area in question.

4.1 LAND USE

What is the most appropriate land use for the hills in question? Given the large area of land this position must be questioned and defended from time to time. Just as the issue of large estates owned by rich landowners in the face of land hunger is a moral issue so is this. This is not the place however for an in depth analysis nor is one required. Suffice to say the two alternatives agriculture and plantation forestry lose out – all things considered – to maintenance of indigenous woodland. The main arguments would be:

Why not something else

- Not suitable for arable land – short-term harvest would lead to long-term land degradation and minimal production of any kind (food or wood)
- Plantation forestry requires a high investment and there are few willing investors – FD cannot and private operators would be more interested in existing plantations (of which there are many in need of privatisation) rather than new
- Both these options especially the first would jeopardise water sources

Why indigenous woodland

- Valuable water catchment area – best preserved through natural vegetation
- Indigenous woodland provides multiple goods and services needed by those local people who are basically subsistence farmers and need “safety-net” goods which they cannot buy
- Indigenous woodland also provide opportunities for the forestry “cash crop” equivalents to agricultural cash crops (e.g. honey, timber)

The same land use question can be applied to areas of customary land in Malawi. On customary land agriculture is almost always the *de facto* land use of choice, even in marginal areas. In such areas, however, productivity is declining, annual yields are declining and per capita annual income is declining. The ecological integrity of marginal agricultural lands is being impaired. It is prudent to question the continued use of such land for agriculture that tends to involve the use of more and more inputs and to question the continued conversion of indigenous forest areas to such a land use. Clearly this situation will continue unless an alternative can be presented.

4.2 MANAGEMENT OBJECTIVE, MANAGEMENT COSTS AND MODALITIES FOR MANAGEMENT⁶

Having “decided” that the hills should be “used” to support indigenous woodland we must also discuss the management implications. Evidence from many localities in Malawi show that without management this land use option is not self-fulfilling (unlike some areas of cultivated land for example). In order to determine the next step we must examine the management implications that can be looked at in terms of

- **The management objective**
- **How the cost of management will be borne**
- **The mode of management**

These are intimately linked, after all a community (mode of management) is not interested in volunteering their labour (cost) and commitment for water catchment (management objective) if the beneficiaries of the water supply are different people altogether. A tabular representation of the relationships is shown in Table 2.

Table 2. Relationships between Management Objective and Costing Mechanism.

	To pay	The government through the Forestry Department pays	Locals to contribute labour and opportunity costs	Cash income from sustainable utilisation of the forest	Donations
Objective					
Water		This has been the case up to date. The reality is there is not enough money made available.	Some communities are willing to do this - others are not. Probably depends on the opportunity costs and other pressures and dynamics.	Water does not generate enough cash money except in rare cases.	Largely unsustainable unless attract endowment fund.
Other subsistence goods and benefits e.g. firewood, medicine, fruits etc		As above	Communities to “pay” for these services and benefits through voluntary management is the main idea behind co-management. As above some people are willing and able some are not.	These goods do not generate cash (even though they have an economic value)	As above
Cash crop i.e. timber, honey, bamboo furniture etc		This situation is what is found in government run plantations – results indicate that this would appear not to be a good model to follow even when the government is the beneficiary	Locals are unwilling to contribute labour for free unless they are the ones to get the cash. Risk of uneven spread of costs and benefits.	This is the typical business model – make an investment, then reap income that then pays for the running of the business and yields profits in the pocket.	In this case a donation would be seen as subsidising a business

⁶ For the Forest Reserves

Of course in reality there will be more than one management objective, costs can be spread across different methods and the subsequent management mechanism will have to be designed to reflect this. However further analysis reveals that community management for subsistence, environmental benefits and low level IGAs may work on the basis of community cohesion and voluntary labour because costs and benefits are *relatively evenly spread*. Once “serious” cash income is introduced the need for balancing costs and benefits is even more important – after all no one wants to commit voluntary labour so that others e.g. curio makers can earn a good living even if the volunteer also benefits from the conservation of water (after all so does the curio maker). So whilst generating cash income from the forest might be important (the only way?) to pay for management (for all benefits - sustaining the enterprise, plus conserving the other benefits too) it has a *large* impact on the way management can subsequently be effected.

MANAGEMENT BY THE FORESTRY DEPARTMENT (FD)

Until recently the FD has been to all intent and purposes the only forest management institution in the country concerned with forest reserves. Currently the FD tends to be much maligned for its previous policies and actions – issues relating to being harsh and preventing people from accessing much needed resources which some argue were taken from the people who are the rightful owners. Now that harshness has been relaxed and replaced with corruption and inefficiency so criticisms continue unabated. What we tend to overlook is the FD was in effect doing a service for the rest of the Nation. Whilst some local communities tend to dismiss the idea that they in any way benefited from forest reserve conservation this is in fact untrue. People did have access to many resources via both legal and illegal means and importantly, on the whole, deforestation was prevented which means these reserve-periphery-dwelling peoples are still fortunate enough to derive benefits from the reserves up to this day. The facetious could say they now have the chance to make charcoal and sell firewood because the FD prevented their forebears from doing so in the past. Curio makers in Liwonde are benefiting a lot from previous FD policies and they put nothing back nor do they express their appreciation of these benefits – they think they are there by the hand of God alone. One could argue that they are getting something (the raw material) for nothing and in this day and age no one gets anything for nothing.

The main FD management objective has been conservation for environmental and service-benefit reasons, a subsidiary benefit was the provision of subsistence goods for the local people (even though access to these benefits were strictly controlled). Many communities still think the FD should carry on with the job, if only they could do it better and in a more people-friendly way.

In some ways there is definitely a good argument for establishing and maintaining a benevolent community-oriented, efficient and effective Forestry Department in order that it may carry out a service for the locals and the Nation if no one else is in a position to do it. If one is of the opinion that the benefits of miombo woodland are mainly environmental, service and subsistence benefits, it could be argued that government service provision (i.e. subsidy) is proper and correct. Even incorporating important cash benefits the FD could still manage the reserves by selling permits in accordance with a management plan based on inventory data. The money raised could then be recycled and spent on management.

The reason why this approach (FD management without power-sharing) is not pursued is mainly that the FD simply cannot do it (without considerable Treasury or Donor subsidy, neither of which is very likely to be forthcoming) and, secondly, that

even if such an approach were to be adopted it would be extremely difficult if the local people were not somehow involved as genuine stakeholders. The pressure on the forests would still be very high and law enforcement would still be a high priority.

DISTRICT ASSEMBLIES

The Forestry Department is destined for decentralisation. Whilst this may offer benefits in terms of accountability and local decision-making there are some fears. There is a risk that the District Assemblies will see forest reserves as potential sources of income. This is fair enough provided the reserves are managed in such a way as to produce this income in a sustainable way and local people do not “lose out” to such an extent that incentives for controlled utilisation are eroded even further. If District Assemblies see the reserves as “mines” of resources and income-making potential the result may be accelerated deforestation. The issues here are capacity at the district level and priorities for development.

CO-MANAGEMENT THE MALAWI-WAY

The co-management model promoted in Malawi today relies on community⁷ cohesion, a common goal, community commitment and voluntary contributions of labour and time to carry out the management functions. The management objective has never very clearly been analysed but usually takes the form of subsistence benefits and water catchment protection. Opportunities for IGAs are sometimes tagged on but only on a very low level of local trading in NTFPs. These IGAs were never intended to pay for the cost of management but rather vaguely labeled as “incentives”.

In Chimaliro Forest Reserve, Kasungu, this model has been working to some extent. In such a case the benefits and costs are *relatively* evenly spread across all members of the community and costs are quite low. Importantly in the Chimaliro case the opportunity costs are also low i.e. people were not cutting and selling firewood and have little inclination to do because the market is small (this could easily change). Even if the only cost associated with management is to stop doing *something* – if the *something* is to stop selling firewood this in fact represents a big opportunity cost that can only be borne if the cost is offset somehow.

In Nadge, Machinga, where co-management has also been implemented the situation is quite different. The co-management model just described is not working there at the moment. Whether this is because the FD-led World Bank co-management project is being ineffectually implemented or whether it intrinsically will not work is an important question. In an attempt to answer it some lengthy discussions and woodland walks were undertaken with the Nadge co-management participants.

⁷ In such a context as this read village for community

Box 5. What the Ndaje co-management VNRMCs say.

The committee members were highly concerned that they had not gone for training as they were promised. This fact seemed to eclipse everything else concerned with co-management. Efforts were made to put aside this issue temporarily and to discuss how important they considered co-management to be.

Question: Is co-management an important development for you and the community?

Answer: It is important but in the early days we used to make an effort and you would not see these trees felled like this - now we have given up — because we did not go for training.

Question: But if it is so important – why give-up just because of the lack of training?

Answer: The training is important because other members of the village do not respect us if we have not been trained. Other initiatives and committees are started up in the village and the committees always go for training. In this case we did not. It makes other people think that the government is not serious about co-management, if that is the case then why should we the people be serious. Without training we have not been given authority.

Question: But do the rest of the villagers value woodland management and value the chance to safeguard their own resources?

Answer: Oh yes.

Question: But if that is the case why do you need further government sanction – the villagers can legitimise your position by saying “we want co-management and we want you to hold these positions”?

Answer: Villagers cannot respect a poor man in rags (after training – people are able to buy a new shirt) , they cannot respect someone who does something for nothing.

Remarks

- Training it would appear is more about gaining some respect and authority than actually learning something
- Unfulfilled promises can be very destructive
- Villagers think co-management is about doing what the government wants
- There was evidence to suggest that far from co-management at all – in places where co-management has been introduced the FD had rather “washed their hands” of the place. They no longer patrolled and certainly did not work alongside the committee giving them advice and guidance (possibly negating the need for training if done)
- One could conclude that if co-management really made sense to the village community as a whole they would have embraced the opportunity more wholeheartedly than was evidenced, despite the problems

Source: Interview with two committee members in October 2000 in Ndaje co-management block.

If local people are not willing or able to manage the woodland for subsistence benefits that relies on community cohesion, shared goals and low costs then the only alternative available (apart from donations) is the “pay for itself” scenario. The following breakdown was drawn – up in order to test whether this would work.

Can co-management pay for itself?

Let us imagine a scenario where three villages have linked up, elected a VNRMC and have been allocated 1000 ha of forest reserve to manage together with the Forestry Department. Unable to rely on voluntary contributions of labour and unable to rely on all community members automatically sticking to the management plan the VNRMC will employ labour when needed and raise money through selling permits (to village members and maybe even non-village members at differential rates) to all those who wish to use the forest for *commercial* purposes.

Table 3. Self-funding, not-for-profit co-management - cost and income breakdown

Cost/Income	Item	Amount per year
Direct Costs	Two patrol men	48,000
	Boundary maintenance	22,000
	Firebreaks around coppiced coups	5,000
	Receipt books	1,000
	Gum boots and pangas (replaced every four years)	4,000
Other costs	Time for meetings and commitment to make decisions, deal with management and conflicts. Contributed by the committee in particular and all villagers from time to time.	0
Other costs	FD technical support and advice is subsidised by the Government. Law enforcement (police and court hearings) likewise is paid for by the government.	0
TOTAL COST		80,000
Income from permit sales and selling timber, bamboo etc.	Firewood – mendle permits 400 @ Mk 10 per mendle	4000
	Timber ⁸ – for planks or curios @ mk 4000 x 6	24,000
	@ mk 3000 x 6	18,000
	Mushroom permits @ mk 200 per permit per year x 45	9,000
	Beehive permit @ MK 300 per hive per year x 40	12,000
	Bamboo @ MK 30 per bundle x 80	2,400
	Misc – such as hoe handles, pestle and mortars, grass for sale	2,000
Income from local fines	For violating the management plan e.g. cutting without permit or in wrong place, setting fire etc	5,000
Free benefits	Subsistence use, water, other service functions - free	0
TOTAL INCOME		76,000
Balance		- MK 4000

Notes:

- Those that do not want to pay can contribute labour @ MK 40 per day e.g. 4 mendle permits = 1 day of boundary maintenance (thereby making a saving in management costs)
- Another option might be to have a SAVE OUR RIVERS DAY whereby each able-bodied person contributes to the firebreak maintenance work thereby reducing the cost by : 300 able-bodies people x MK 40 for 1 day = 12,000. After all everyone gets water not just the commercially active.
- Those individuals who are paying for their permits are also making money themselves by selling the subsequent produce.
- Those engaged in commercial activities will be more interested in paying for the permits if they are getting more money from their activity that is where adding-value comes in.

At the end of this analysis one could not help but ask, “what incentive is there for the VNRMC take on this role?” when the main beneficiaries are those who are undertaking commercial enterprises. The VNRMC is managing the woodland so that these people can carry on their businesses or in other words so that the raw material they need is maintained. This is a bit like farmers producing flour for free (albeit at no actual monetary cost) so that the baker has flour to make and sell bread. In the breakdown described above their only incentive is public spiritedness so that the non

⁸ price depends on size, species and quality

cash-benefits from the woodland are realised and enjoyed by everyone, themselves included. This is when it is important to ask again “what is the main objective of management and who’s objective is this?”.

If the breakdown revealed a positive profit the profit could be used to give allowances to the VNRMC, to employ a manager so that the VNRMC time contributions are reduced to a minimum or to be spent on village development projects. Whether the forest could yield a significant profit depends on adding value to the resource e.g. by encouraging growth and protection of valuable hardwoods or by adding value to the products which the commercial users are selling and then raising the price of the permits.

Various other people were asked what they thought about co-management, some were local chiefs and others were not. Many people said they had heard about it, for example on the radio. On the whole people thought it was a good idea but were “waiting for someone to bring it here”, most said they would participate if they were paid. All VH said they could identify an area considered to fall under their jurisdiction if need be. One person asked the question “if the government can’t manage, what can we do” (VH Wilson)

With or without co-management there remains a lack of ability for locals to say “no” to other people who want to collect products from their local area of forest reserve. Without co-management this is not surprising but this was supposed to be one of the *strengths* of the approach. One example of this is the case of Malopa Village as follows:

The VNRMC of Malopa village are involved in co-management of a certain area of reserve near the Chikala hills. The same area is being subjected to encroachment by other people altogether. The VNRMC seems unable to deter them. The question is, “can they really do nothing?” or are the stakes not high enough to force action. If it was their farmland they would not stand by – likewise if the area was their resource base for a viable honey industry would they also stand by and say, “we can do nothing?”

Box 6. What benefits ?

Shibu Mala is the Chairman of Block C of the Ndaje Co-management grouping. He is from Kawamba village. Discussion revealed he was somewhat bitter about the co-management project as it was not delivering. He was interviewed:

Q: “but doesn’t co-management have its own rewards?” A: “No, not really”.

Q: “you get nothing from the forest?”

A: “well we get mushrooms and masuku but not benefits as such”

Q: “are there any undeveloped possibilities which, with the right sort of help could allow you to get more from what is there?” A: “there is nothing we can get”

Later when leaving the chairman was finally asked about crafts and making things. He then showed us some basket chairs that he had made. He said he was the only one to make them from his village and that he worked with his brother. He explained that borers did not eat his chairs as he used good wood (*Dalbergiella nyasae*).

Q: “where does the wood come from?” In reply he pointed to a hill on the other side of the co-management area.

No wonder he gets nothing from co-management – he sources the resources he needs from other parts of the forest! (The consultant then bought a chair for MK 200 – a benefit?)

AN ALTERNATIVE CO-MANAGEMENT MODEL

An alternative approach is the interest group approach or the main stakeholder approach. If lack of money (problem with the FD approach) and lack of

community cohesion and poverty (problem with the co-management model) are insurmountable problems another option is to attempt to meet **all** (or a large part of) the management costs through income from woodland productivity. This can only really work if the main users manage the woodland themselves.

A possible example would be the formation of a beekeepers and mushroom sellers association. This would consist of a limited number of members from different villages. They could co-manage a block of woodland in the forest reserve. There would be a management committee, a constitution, a management plan and rules and regulations. The management costs would be borne by the members either through labour or money. Both they should have and be willing to give.

Let us imagine a scenario where 50 beekeepers and 100 mushroom sellers from 10 villages agree to co-manage 5000 hectares of forest reserve.

Table 4. The user group approach – cost breakdown

Items		Per year
Direct Costs	Five patrol men	120,000
	Boundary maintenance	50,000
	Firebreaks around coppiced coups	12,000
	Receipt books	4,000
	Gum boots and pangas	8,000
Lease fee to FD	5 MK per ha (nominal)	25,000
Other costs	Time for meetings and commitment to make decisions, deal with management and conflicts. Contributed by the committee in particular and all villagers from time to time.	0
Other costs	FD technical support and advice is subsidised by the Government. Law enforcement (police and court hearings) likewise is paid for by the government.	0
TOTAL COSTS		219,000
Basic membership fee	150 members pay MK 400 per year	60,000
Beekeepers with more than 10 hives pay further MK 200 per hive	100 "extra" hives	20,000
Income from other activities e.g. selling permits to other users	Firewood – mandle permits 1000 @ MK 10 per permit	10,000
	Timber – planks or curios @ mk 3000 x 20	60,000
	@ MK 1500 x 30	45,000
Income from fines	Misc. – such as bamboo, hoe handles, pestle and mortars, grass for sale	5,000
	For violating the management plan or setting fire etc	15,000
Free benefits	Subsistence use, water and service functions - free	0
TOTAL INCOME		215,000
Balance		- MK 4,000

Notes.

- The beekeepers and mushroom sellers can act as individuals when conducting their business or can form their own small groups. Their profits would simply have to be enough to enable them to pay the membership fee of MK 400 per year.
- All other locals would have to abide by the rules of the association.

- Collection for subsistence use would still be allowed – for locals not outsiders.
- There would be problems such as the system prohibits occasional trading of mushrooms
- None of the mushroom people want to pay because they are used to getting it free. It is easier to introduce payment with a new activity e.g. beehives rather than an ongoing activity.
- A mushroom processor or trader may choose to buy only from association members – a factor which would facilitate the approach.
- There could be an equity problem. Why should the beekeepers be given this privilege and not the charcoal burner? The other members of the village may resent the association having powers over them (even though they will benefit because the reserve will at least be managed).
- The role of the Village Headman is difficult to imagine.

TRUSTS

Either a village or a group of users could be formalised by the establishment of a Trust. The concept of villages legalising themselves by forming village trusts was first introduced as a concept in Malawi in the process of strategic planning for the Nankumba Peninsula Strategic Plan.

Under existing law a village could form a village trust. The trust would provide a mechanism through which the village as a community group could enter into a legally binding agreement or lease arrangement with another body e.g. the FD. The first step is for the village to register its entire membership as beneficiaries of the trust. The beneficiaries then select a board of trustees from among themselves to represent them. The beneficiaries through their trustees develop a constitution to govern their affairs, then register the trust under the Trustee Incorporation Act of 1968. This registration confers upon the trust (i.e. the village community), a legal persona, giving it the right to enter contracts, operate business enterprises and own land and property.

In this way either a village or even several villages together or a independent group of interested people can become a legal entity and could lease an area of woodland for management and production. This is like privatisation of forest reserves, not to a private company as such, but to a local community organisation, the trust could then run the forest management activities like a business, employ a manager and other workers as necessary. This could only happen if the woodland generated enough money.

NONE OR ALL OF THE ABOVE MANAGEMENT MECHANISMS?

Investing in adding value to mushrooms without any of the above structures (including effective FD management as an option) would help the people (short term) but not the forest. In the long term without any of the above the mushroom collectors may not be able (or even have the right) to protect the woodland from complete degradation.

One can still have a mixture of the above and even if management cannot pay for itself then this is no reason NOT to try to develop NRBEs but if in the process other stakeholders lose interest in management the dynamics can be very much upset. In Chimaliro for example some people are keeping bees. It might happen that if they do very well other say “well you do the work then, why should we conserve your forest if you get so much and we get so little?” in which case model 1 would in effect be transformed into model 2.

Inherent in the management mechanism is the issue of tenure. Tenurial security has to be there for people to make investment in woodland management. Investing in certification (by any body except the FD at the moment) particularly cannot happen unless tenure rights are clear. Whatever mechanisms are worked out there must be a legally binding document to support tenure rights and responsibilities for management.

PRIVATE OR STATE

Forest management itself could be handled by the state sector or by the state in partnership with local people or through privatisation to a local Trust. Natural product development and marketing, however, are tasks for the private sector (local communities included) not the state. The difficulty comes when we reflect that the natural product actors must have some security that their resource will be well managed in line with their needs. Food for thought!

Concerning customary land most of this section does not apply although clearly forestland still needs to be managed and ownership and access issues are still highly important.

SECTION 5. DISCUSSION ABOUT BUSINESS AND MARKETS

The previous section introduced the concept that forest management could be approached in a business-like manner. This is open to discussion. There is no such question concerning product processing and marketing which must form the basis of a viable business or else it cannot be sustained. Business and marketing are closely related and both are tackled in this section.

5.1 THE BUSINESS⁹

This report is dealing with the development of Natural Resource Based Enterprises and it is important to place as much emphasis on the “enterprise” itself as the natural resources. There are a number of issues:

DEFINITION AND UNDERSTANDING ABOUT ENTERPRISE/BUSINESS/IGA

The terms enterprise, business and IGA are sometimes used interchangeably. This is incorrect and more accurate usage of these terms can help us to plan more successfully. Figure 1 gives a more accurate picture of the reality.

Economic development is unlikely to be achieved if activities remain limited to the lower levels i.e. subsistence entrepreneur (see Fig 1). The Section on conservation and woodland management highlighted that with management come management costs. It is unlikely that a subsistence-level micro-enterprise will yield sufficient profits to **pay** for woodland management (e.g. in the form paying for a permit) on top of running the business.

The existing commercial activities in the target area appear to be at the level of subsistence micro-entrepreneur.

- Curio makers – do not expand or diversify. Do not undertake market surveys. Do not buy equipment such as lathes to allow for new designs.
- Bamboo furniture women’s groups – limited vision, do not have marketing strategy, do not have enough profit to build up a stock of wares to allow customers to choose rather than taking orders.

Thoughts need to be geared towards helping people move into the stable and growth micro-enterprise levels or objectives of economic development and conservation may not be met.

⁹ The first part of this section is drawn directly from the document Micro-entrepreneurship in Malawi prepared by the Rural Economic Policy Centre. The document should be referred to directly for more details.

Figure 1. Levels of Micro-enterprise Development

<p>Small-scale entrepreneurs 10-49 employees Asset base of more than \$3500 Annual sales of more than \$10,000</p>		
<p>Micro-entrepreneurs – Growth More than 5 employees Asset base of more than \$1000 Annual sales of more than \$ 5,000 Multiple businesses – some agri-based, some not. Expanded business, requires good knowledge of products and markets Able to get loan and service it</p>		<ul style="list-style-type: none"> • Qualifies for a loan from a larger financial institution such as commercial banks. • Financed from savings, retained earnings and enterprises. • Mixed low and medium skills with the owner working and some unpaid family members. • Assets are more mixed of current and moderate value fixed assets and has access to services • Stable ventures with potential for diversification and specialisation growth • Mainly second generation enterprises such as trucking and trading in specialised agricultural products, second hand clothes etc
<p>Micro-entrepreneurs – Stable Runs business alone or with family Starts to employ 1 or 2 people Fixed place of work No operating license Self-raised capital in business Asset base of \$ 200 - \$ 1000 Capital required for expansion</p>		<ul style="list-style-type: none"> • Difficult to get loans from bank • Women able to access group loans • Financed by savings, retained earnings and the enterprise itself • Owners tend to work independently unless they want to grow then they seek financial assistance • Basic business training and credit management necessary • Available assistance focuses on credit rather than training and technical assistance.
<p>Subsistence entrepreneur Self-employed, independent income generation. Short-term goals. Roadside sales. Start-up funds come from savings or informal loan</p>		<ul style="list-style-type: none"> • Inexperienced in business management and still need general support and training in technical as well as management skills. • Rely on family labour where necessary • Assistance project combines training and some credit.
<p>Pre-entrepreneur Women's group Crafts Group income generation</p>		<ul style="list-style-type: none"> • Not yet in a position to take up independent economic activities. • Assistance focuses on social welfare, consciousness raising, health etc. with some focus on income generation. • Welfare oriented approach.
<p>Basic survival Domestic activities No economic independence</p>		<ul style="list-style-type: none"> • Isolated from market centres, unaware of their own potential, illiterate • No income generating activities.

GOING INTO BUSINESS – INHIBITORS, PROMOTERS AND SUPPORT AVAILABLE

The promotion of any enterprise (including those in question here) requires an understanding of the conditions that help this process and the factors that inhibit enterprise start-up and growth. Some of these are briefly discussed here but for more details the source document should be referred to.

External environment level

Research has revealed that Malawians feel that the government has provided a atmosphere conducive to conducting business at the informal level. This is in contrast to the more restrictive regulations governing small businesses once they become formal (e.g. licensing of businesses and high taxation rates).

Factors promoting informal sector enterprises have been identified as:

- new business support organisations (see next paragraph)
- more people in business acting as role models
- improved transport and communication
- increases status of women
- increased provision of services such as schools and health clinics

Inhibiting factors were identified as:

- inflation
- small markets in rural areas
- loans for working capital and investment (as opposed to start-up) difficult
- effects of large and extended family (dependents)
- jealousy and witchcraft
- lack of know-how for value-added production

Interestingly the same report states that, *“production technology is limited. The main focus is on trading. Production takes more skills and more capital – it implies that more time is involved in one particular enterprise. Moving towards production has implications for time, capital and thus the business portfolio”*.

Micro-enterprise support programmes and policies

There are about 13 main business support organisations that target micro-entrepreneurs at the national level (See Annex 4). Around half the organisations provide training and six operate as financial intermediaries. The Foundation for International Community Awareness (FINCA) and Malawi Rural Finance Company (MRFC) have group lending methodologies for smaller loans. NABW give to both groups and individuals. NGOs also operate a range of projects that target micro-entrepreneurs on a localised basis. Four new projects have started this year in Malawi. Two are business development projects Training in Enterprise and Export, Malawi (TEEM) and BEEP and two are international micro-finance institutions (Opportunity International and PRIDE Africa).

With funding from the World Bank and the European Union the Malawi Confederation of Chambers of Commerce and Industry (MCCCI) has embarked on an expansion of its activities to fully represent the private sector including micro and small entrepreneurs. There are regional offices of the MCCCI in every region and plans are underway for district offices thus providing the rural entrepreneur with a locally-based trade information service.

Government interest in the Micro, Small and Medium-Enterprise (MSME) sector is high and has led to the adoption of a number of supporting policies such as:

Ministry of Commerce and Industry has a new Enterprise Development and Employment Creation programme funded by UNDP. The objective of the programme is to create an enabling environment for viable development of micro, small and medium enterprises that would expand opportunities for employment creation and private sector activities. Direct support services such as training and other non-financial services form the core activities provided by the programme.

Investment Promotion Policy – this policy has led to the establishment of a number of institutions and organisations that provide a wide range of support services. It has also led to a number of laws and regulations aimed at promoting enterprises notably

the development-export investment act, the export processing zones, and the industrial licensing act.

INDIVIDUALS, GROUPS OR COMMUNITY BASED

An important issue still remains to be discussed and this is of the nature of the business model. There are two dimensions, that of:

- 1) integration or separation of production (collecting), processing, packaging and selling and
- 2) community, group or individuals.

Table 5 presents some examples of business models with differing degrees of integration and group activity. For the sake of example the beekeeping and honey processing activity is used.

This discussion is principally designed to stimulate ideas for how best businesses can be established at the local level. The combination of vertical and horizontal linkages are however endless. It is also important to have linkages outside of the local area for a whole range of business-related reasons such as:

- market and price information
- technology information
- access to credit and advice
- collaboration with like-minded people for lobbying purposes

Whichever way you look at it this is a private sector initiative from marginal producer along a chain that is sometimes long, to the ultimate consumer. Communities are as much a part of the private sector as domestic commercial interests and multinational companies.

Table 5. Business model alternatives

Business model	Comment
<p>Community-based (Village Trust?) The co-managing community own beehives. The co-managing community harvest and process honey, bottle and sell it. The money goes pay for all the costs and profits go into the Village Treasury to pay for community patrolmen and village development activities. The management of the business is done by the committee whilst labour maybe done voluntarily or by paying labourers.</p>	<p>Highly vertically integrated and equitable (in theory). Maximum profits accrue to the producers (the community) and considered to benefit lots of people. For such enterprises to be a success there must be good cohesion in the community. Group ownership is not a concept that can be imposed on a community. Despite well-meant efforts from all sides there are many cases where this form of ownership has been promoted but borne no fruits for the community – only frustration.</p>
<p>Group-based 10 men collectively own 20 beehives. The rest is as above. They have to pay the Forest Management Body to place their beehives in the forest. The profits are shared equally amongst the 10 after having paid for all their costs.</p>	<p>A very commonly promoted approach in Malawi – often transforms into the next one.</p>
<p>Individuals (family) but together 10 men each own a number of beehives. They share duties e.g. checking on security and checking on progress. Processing, bottling and selling is done in a cooperative way but the profits are split in accordance with how much honey each producer produced. If one fails to produce any he gets nothing – unless his fellows choose to come to some agreement.</p>	<p>Good. A bit like an association but less people and more informal. Might lack some advantages that a larger association can have. [The Thyolo banana traders work a bit like this. Banana production and even selling is done by the producers individually but when it comes to the difficult bit i.e. transport they work together]</p>
<p>Individuals (or family based) One man, many beehives. He collects, processes, bottles and sells.</p>	<p>Fine but he is may struggle to produce large quantities and to find the capital needed for equipment and bottles etc. Could expand by employing people.</p>
<p>Many producers, one processor Many people have hives. They produce honey that they sell in a semi-processed form to a single entrepreneur who does the processing, bottling and selling.</p>	<p>Probably very effective. Better still if the single entrepreneur is based locally (profits stay local) and links with the producers are of a nature to discourage an exploitative relationship (Fair trade).</p>
<p>Marketing association Many producers producing and processing up to a certain level – individually or in small groups. A local marketing association (members are the producers) then handles the final packaging and selling. This marketing association has paid employees who are paid from the membership fees of the producer members. The association could for example hire transport to take all produce to the market.</p>	<p>Good but recall what happened in Mzuzu with the Beekeepers Association of Malawi</p>
<p>Community producers, middleman trader The product can be produced on a group or individual basis. A trader then buys and sells elsewhere.</p>	<p>There is an assumption that the middleman trader is exploitative. This assumption needs to be re-examined however. Compare with example how Chambo fish are bought and sold twice (more?) in between the beaches and the kitchen.</p>

5.2 THE MARKETS

The marketing aspect of NRBE development is a crucial area, possibly the most crucial area of the subject but one that has largely been under-considered by very many development projects. There has been a tendency to produce what people can easily produce with resources that are easily obtainable rather than produce what the market demands. In cases where people are producing what the market demands there has been a vague assumption than simply by producing it the people will sell it. Evidence has shown us that these assumptions are far from reality.

MARKETING AND KNOWLEDGE OF MARKETS

Looking at the variety of NTFPs it very quickly becomes obvious that there are only a few products suitable for the regional and fewer still for the international market. The majority is for home consumption and local (within few kilometers) sale in which case marketing does not present any problem, as local people know exactly what they can and cannot sell. Market promotion for the national, regional and international markets require skills that are usually not readily available. Consequently the employment/engagement of specialists is essential. Market surveys, the evaluation of consumer habits and promotion and advertising are specialized tasks beyond the capacity and scope of most producer organisations. The access to international markets requires goods not only on a regular basis but also on a pre-arranged often already contracted quantity. It becomes obvious that the organisation of producing products and the actual marketing for the latter two markets goes beyond the capacities of the target group producer.

INTERNATIONAL VERSUS LOCAL MARKET

The local market and the international markets have different characteristics that in turn can be both advantageous and disadvantageous.

Domestic markets for NTFPs may provide more easily realised avenues for development. In many countries these trades are much larger, involve many more people and are more easily understood and accessible to small producers. In Malawi the local market is under-exploited and there is little competition. Market expansion is however, probably limited as in-country purchasing power is limited. Nevertheless the local market should not be underestimated.

Within Malawi the market is of course further differentiated. Putting aside the village market (which is well understood by locals and probably allows little room for growth) one can identify various categories.

- The mass market for which a product such as Chibuku is designed.
- Middle income Malawians who may buy processed foods as long as the price is very reasonable.
- The in-country expatriates, the tourists and wealthy Malawians may buy products such as curios, bamboo furniture and pure fruit juice for example.
- There is also a local industrial market for honey for example.

The roadside market also has some interesting characteristics. It may seem primitive but has some interesting dynamics within. On the one hand the customers are travelling in cars and, even if the customers do not own them, anyone travelling in a car usually has more spending power than a person on foot, a bike or a bus. This encourages the traders to set the prices above the village price and town market price even though their costs are minimal or non-existent (although waiting at the side of the road requires considerable investment of time). The value of a roadside

market is of course highly related to the location of the road. One trader mentioned that since the opening of the Zalewa road the traffic from Blantyre to Lilongwe via Zomba decreased thereby reducing the value of his roadside site. Locations with no roadside site are at a severe disadvantage and a few kilometres can make a lot of difference. Customers tend to buy from the roadside because they think they are getting a cheaper product and in the case of wild mushrooms it is important because people are more confident that they are buying non-poisonous mushrooms if they buy from a village woman who collected the mushrooms herself than a town-based trader in the market place. There is some evidence that customers quickly become accustomed to buying certain products from certain locations. If you are fortunate enough to have established a market on this basis business can be good but to break into this market can be difficult.

Finally it is perhaps it is important to reflect that for various reasons even very basic Malawian commodities such as tomatoes, chickens and onions are apparently out competed by Zimbabwean imports.

The international market is characterised by being

- a) very selective and specialist therefore requiring specialist market information
- b) highly sensitive to quality
- c) subject to fashion and consumer fickleness
- d) competitive
- e) in need of large quantities to be provided on demand

The obvious advantage is the higher prices which customers can afford and are willing to pay although only a very tightly integrated production to consumption chain can guarantee these benefits reach the producer group as the costs of producing goods of export quality and the costs of exporting are correspondingly high. The other reason why we look to the international market is that there may be demand for products that have no market within country. Alternative trade labels are a marketing tool applicable almost solely to the international markets but could apply to the within country tourist market.

International trade is also burdened with trade restrictions that may or may not present obstacles to NTFP trade. One such restriction – quite correctly- is the maintenance of certain standards, especially where food product are concerned. European Union standards disallow the use of preservatives in pure fruit juice for example and set limits for preservatives in other products (Dietz, 1999). The technical and administrative knowledge required to manage export constitutes a professional specialisation in its own right and is evidently beyond the small-scale rural producers.

Box 7. Some marketing lessons

- An international NGO encouraged rural groups to produce wild fruit jams in glass jars for the local market. The cost of the glass jar and the sugar put the product beyond the reach of the local consumers. Furthermore the labels were sub-standard – the name of the community group was the boldest writing (not that interesting to the consumer) whilst no reference was made to the fact that no preservative had been added (good selling point).
 - There has been some consumer resistance in the local market against rurally made (traditional) products. People prefer, if they can afford, modern equivalents.
 - A certain canning company attempted to can Mopane Worms. Canning the worms seemed a viable project but it did not last one year because the label was unattractive and dark blue – not a food colour.
- (Taylor, F. 2000)

ALTERNATIVE TRADE AND MARKET LABELS

There are a number of “alternative” trade labels that can be useful marketing tools. These labels provide information to the buyer, information that makes the buyer more interested to buy this product as opposed to the next one. Such information may be about how the raw material was produced or who benefits from the business profits. There are three main label types: organic, sustainable forest management and fair trade. These may require a certificate or simply a description. The value in a certificate is that overuse of “alternative” labelling reduces confidence of the consumers who then demand “proof” that what the label says is correct. Accepted creditation may then be required.

Fair trade Experience has shown that in general the private sector is better at doing business than either government or NGOs. The main reasons for this are that the incentive for the private entrepreneur to do everything in his power to maximise his profits is much higher than for government institutions or even NGOs where business managers usually earn a salary and costs associated with the business are easily lost in overheads of the larger organisation. Having said that, this same incentive leads private sector business people to pay communities as little as possible. If the objective of promoting NRBEs is to enable economic development by the rural poor clearly we do not achieve it if the producers are paid little – what is required is investors whose objective is to pay communities as much as possible. This is what fair-trade is all about and it works by passing these extra costs not onto the business but onto the customer. The fair trade market is a niche market and there is genuine consumer demand for fairly traded products and it is growing. There are many organisations around the globe facilitating the promotion of fair trade (see Annex 2). The type of products discussed in this document are ideally suited to attract fair trade labels given that one of the main reasons for their promotion is to increase the incomes of the rural poor.

Box 8. Fair Trade and Trade made Fairer

While more advantageous market arrangements (such as those engineered in pursuit of fair trade) will be very welcome, it seems unlikely that goodwill and a sense of fairness will replace the bottom line as the dominant criterion in trade. The “fair trade” model is difficult to replicate widely as it involves relatively high transaction costs to establish and enforce. The middlemen in most systems do not receive exorbitant profits because of the costs associated with the many functions they perform. Moreover, the “green market” and “fair trade” approaches can only be expected to reach a small audience of producers. Elsewhere, market pressures will continue to drive prices down.

An alternative to the project-level “fair trade” type of arrangement is to use policy level interventions to encourage stronger competition in NTFP markets. While strong vertical linkages help to bring about efficiency in the market by reducing transaction costs, such linkages do little to encourage equity in the market. The bargaining position of raw material producers could be better improved by making market information more easily available, and making investments that will reduce marketing risk (better storage, clear grading), transportation and other transaction costs.

Source: Wollenberg and Ingles 1998

Organic. Organic produce is another alternative trade label that can offer increased remuneration for NRBEs. For natural forests achieving organic status is not difficult unlike for agricultural produce where the whole production system (usually) needs to be modified to avoid use of chemicals and to avoid contact with the use of chemicals by other people. An organic label can increase the retail price by up to 50% and once again the market is a niche market but not yet saturated. The demand for organic honey in particular is very good due to the need for the use of pesticides to maintain a healthy bee population outside of Africa. The cost associated with organic produce in a natural forest is the cost of the certificate only rather than the cost of organic production. The investment should be fairly cost effective since one certificate can cover a very large area and resource base that in turn can provide the raw materials for a large number of primary producers and processors. The organic certificate can be applied to all products from that area so that one may sell organic honey and organic fruit juice from the one certificate. It would be very difficult however to certify as organic, products produced from customary land areas in Malawi where agriculture is the dominant land use even if the product itself is not an agricultural crop. Masau (*Zizyphus mauritiana*) for example is a “wild” fruit but grows in proximity to cultivated areas as opposed to forest areas.

Within most markets, use of an organic label is only possible if a recognised certifying body has certified the source. A description such as “harvested from the wild” however does not, and for many consumers this may be enough for them to appreciate that the product is produced without use of chemicals. The use of the organic certificate can add value to the product but does little to correct existing mismanagement unlike the fair trade and FSC certificate because natural forests are already organic.

Box 9. North Western Bee Products (NWBP) (Zambia)

The successful and profitable marketing strategy has been made possible by the UK based Soil Association which awarded its Organic Certificate in 1990. This certificate is valid throughout the EEC and has enabled NWBP to export its products at much higher prices than would otherwise have been achievable. This organic label has proved to be a useful tool in community based forest management:

- it adds value to indigenous methods of forest production bringing tangible benefits to the producers
 - it gives local people an incentive to look after their forest
 - the certifying body has real power to act if problems arise
 - The certifying body's annual inspections give local people direct access to relevant and sympathetic expertise
 - Certified products give customers in developed nations an opportunity to make a real contribution to sustaining the forest and a way of life which the forest naturally supports
- (Muzama Craft Ltd, Environmental and Site Setting Document. October 1996)

Sustainable Woodland Management. "Harvested from the wild" may sound organic but for some consumers this has a negative implication too i.e. that of destruction of nature. Tropical timber, in particular, has developed some marketing problems for this reason. In Europe and North America consumers are concerned as to where the wood product, which they buy comes from, and whether such and such a purchase is not in fact contributing to deforestation in the tropics. Certifying woodland as being sustainably managed is one way of regaining consumer confidence and the independent Forest Stewardship Council (FSC) has developed internationally recognised standards and criteria for sustainable woodland management. The FSC accredits certifying bodies with the right to certify woodlands. There appears to be some debate however as to whether the FSC label enables a product to be sold at a premium to those customers who are concerned with environmental issues or whether it allows access to an otherwise closed market. The actual FSC principles are discussed in sub-section 7.1 where the steps that need to be taken in order to meet the principles in Machinga are explored. "Green" labels for forest produce which describe a product as not harming the environment can still be used without an FSC certificate but it is simply a question of whether the consumer will be convinced or not.

As it happens one of the most important benefits of using these labels is that one is forced to be specific in one's choice of trading partners and this has enormous benefits for trade. Identifying a customer or linking with a customer can:

- a) create a relationship where the customer places orders, guarantees and market and some basic prices and through feedback can work with the producer to help them produce what is in demand.
- b) cut out the middlemen (some of them)

Fortunately, it would appear there is tremendous potential for exploiting these labels – but mainly internationally. The local markets of these labels could, however, be developed with some consumer education.

5.3 STANDARDS

Malawi Bureau of Standards

The main function of the MBS is to develop standards and to assure that the products in the market conform to the set standards. Malawi does not have food law but is a member of the Codex Alimentarius Commission; the contact point is MBS. For control and monitoring they largely adopt Codex standards. MBS has the mandate to control the food processing industry. Enterprises do not have to

be registered. When new products are sold on the market, samples should be submitted to MBS first; however, in most cases this is not being practised.

MBS has well equipped laboratories staffed with qualified people. The microbiology laboratory is capable of analysing most pathogens. The services can be obtained against the payment of a fee.

Chancellor College can also carry out such analyses, including mineral analyses so the nutritional quality of a new food can be determined.

SECTION 6. MONITORING IMPACT

Given that the underlying assumption that NRBE development can combine the objectives of biodiversity conservation and economic development then it is necessary to check continually that these dual objectives are being met. The approach and methods for monitoring both these intended impacts are different and treated separately in this section.

6.1 ASSESSING AND EVALUATING SOCIAL IMPACTS¹⁰

It cannot be taken for granted that by developing commercial products local people will benefit. For example Dove (1993) suggests that if forest resources are really very valuable external actors at the expense of local people usually appropriate them. He goes on to suggest that NTFPs available to poor people are those that are in fact economically marginal. This may or may not be the case but it does highlight the fact that it cannot be assumed that exploitation of NTFPs will lead to substantial economic benefits to local people. There are other risks as well. It is possible that interventions might lead to an overall improvement in economic conditions locally but at the cost of worsening the conditions of some segments of the population. An important observation noted by one project was that whilst impacts (both intended and unintended) may be there – whether they are good, bad or acceptable can really only be decided by the people themselves.

Identifying project impacts is both a responsibility of projects and practically important for project management, but the evaluation of the acceptability of impacts is a matter for the people affected by them. In other words, the people affected ought to participate in the decision-making aspect of project evaluation. Participation in the more mundane data collection phases of monitoring, evaluation and impact assessment is often unnecessary (and even burdensome) but participation in decisions making is essential (Fisher and Dechaineux in Wollenberg and Ingles 1998).

A formative approach to evaluation is recommended, in comparison to a summative approach. The difference is that a summative approach measures the situation before the start of the project and then at the end according to various indicators. A formative approach allows for continuing evaluation and feedback.

¹⁰ This entire sub-section has been drawn from a Chapter within Income from the Forest. The Chapter in turn was based on a proposal made to the NTFP Project in Laos (Fisher et al. 1996). Whilst the principles are relevant exact details would have to be worked out in context of any project that may be designed for the Machinga setting.

Box 10. Two types of evaluation

Summative evaluation

- Takes place at the end of a project and sometimes at project mid-term
- Aims to determine project success or failure (did the project pass the test?)
- Determines whether expenditure on the project was justified by the results and;
- Asks whether there are any lessons that could be applied to future projects

Formative evaluation

- Continues throughout a project
- Aims to identify issues and problems
- Enables corrective action to be implemented quickly if problems (or unintended consequences) are identified; and
- Enables the project to identify success that it can build on

Summative evaluation has some limitations particularly it depends on being able to predict all the key issues and it is difficult to account for unintended consequences, also problems cannot be dealt with before it is too late. It is suggested that summative evaluation is relatively unhelpful unless it is combined with formative evaluation and a combination is therefore more useful. The underlying philosophy is compatible with a participatory learning and action approach, in which activities are amended as a result of continuous critical reflection on observed outcomes.

Many of these principles – participation of main actors and use of a formative approach – are incorporated into the community-based monitoring approach designed by COMPASS for monitoring the impact of the Small Grants Programme. A set of guidelines has been produced (COMPASS Document 6, 1999) which show how community-based monitoring can be best undertaken and these can be referred to for easy-to-use instructions for how community groups can set objectives, identify indicators etc.

What should be assessed?

The underlying concern, from the socio-economic perspective is that “sustainable economic exploitation” improves or maintains the material well-being and economic security of rural people in the long term. It is therefore reasonable to examine the effect of any interventions on:

- 1) Well-being. This encompasses quality of life and such things as health, education as well as economic factors which provide access to material good such as – assets, capital, labour availability, credit and cash.
- 2) Equity. This refers to the extent to which well-being is distributed between different individuals and groups. Equity involves fairness not equality and on the whole must be determined by the peoples who lives are affected. It is common for example for local chiefs to benefit more than the very poor or that family incomes might go up but at the cost of increased labour for women.
- 3) Risk. People operating close to the minimum subsistence level are greatly concerned with risk. In such cases it is quite rational to avoid potentially profitable changes if these changes involve risk of complete failure.

These three aspects of impact are often closely related, for example certain interventions may involve varying degrees of risk depending upon the individual. When it comes to assessment it is easier to identify indicators for measuring well being and these can be included in a baseline survey. The changes in equity and risk probably emerge best from analysis as a part of the evaluation and the participatory nature of such an evaluation should be stressed. People know what has changed in their lives and reliance on understanding will be more useful than over dependence

on “objective” indicators.

A four-pronged approach to social impact assessment and evaluation is suggested.

- Collection of information for a baseline study by field staff. One approach is the preparation of a Village Profile (VP) for each site once this is known. The VP consists of a checklist of minimum information needed plus any other relevant information. Remember that the approach is a learning process approach, not a formal baseline survey approach and the VP should reflect this.
- Continuing observation of social impacts by field staff. Field staff should make observations about socioeconomic changes, and their documentation, a routine part of all fieldwork. Casual conversations are often the best way to understand the concerns of villagers – central to understanding project impacts.
- Village case studies. Field staff may have limitations in skills and expertise. There is often a role for a suitably trained and experienced person outside of the field staff to carry out village-level case studies of socioeconomic changes in greater depth. Such case studies could occur on a scheduled basis or an *ad hoc* basis where specific issues have been identified for exploration.
- External review. An external review could use all the information available from the Village Profiles, field reports and Village Case Studies.

This methodology is aimed at projects that have a commitment to a critical learning approach to implementation. While recognising the legitimacy of needs for summative assessment and evaluation the methodology is based on a view that formative assessment and evaluation are crucial of projects are to identify emerging problems and adjust their activities accordingly.

6.2 ASSESSING AND EVALUATING IMPACTS ON THE FOREST

Just as NRBE enhancement has social objectives it also has conservation objectives. In order to ensure these are met efforts must be made to plan, monitor, assess and evaluate on a regular basis.

ESTABLISHING SUSTAINABLE OFFTAKE

Here the assumption on which we base this work is that ideally use should be sustainable. This means that today’s use should go on in a way that the future supply is in no way jeopardised. A conservationist would talk of not altering the integrity of the ecosystem. In the miombo woodlands in question it is true that utilisation and the impact of man (fire in particular) have already shaped the current composition and nature of the woodlands, so it is in fact difficult to talk of ecological integrity in this way.

One of the reasons why NTFP use is proposed as opposed to conventional timber use is that harvesting is somehow intrinsically more sustainable. However, it is also the case that considerable forestry expertise exists in the country and drawing up a broad-brush sustainable (or at least sensible) forestry management plan based on data and knowledge could at least be attempted. With regard to harvesting NTFPs there is no such knowledge base and yet there are a number of indications that the benign nature of NTFP collection is over-stated.

One programme that has attempted this task before is the Resource Utilisation Programme of the Nyika National Park and Vwaza Marsh Wildlife Reserve. The programme devised some methods of assessing the yearly stock of various NTFPs such as thatch grass, termites, mushrooms and caterpillars. The

assessments were made using transects or sample plots and then harvesting and weighing all of the particular NTFPs in that area, then extrapolating the data over the whole area likely to support the same NTFP. The methods probably produced only rough estimates as for the mushrooms for example the stock was measured 3 times a year therefore not accounting for all the mushrooms which appeared and were eaten or rotted within the 3 spot counts. The information was then used to set quotas for the local people to collect. Percentages of the measured annual stock were given e.g. 50% of the thatch grass or 60 % of the mushrooms. The report where these figures were derived was not available but it would appear that the percentages were not based on any scientific knowledge of the impact of taking more or less. Since the quota system was introduced a system of permits and monitoring was also introduced. Ideally over time it will be possible to understand if there are any negative consequences associated with the harvesting or not. To some extent the impact of harvesting in Nyika and Vwaza is “simpler” to monitor than in Machinga because the programme started from a baseline of no human harvesting (in theory) whereas in Machinga use is there already. In Machinga we have to consider whether it is desirable for the forests to “stay the same” or be modified in some way. This issue complicates that of monitoring sustainability.

In Machinga it might be useful to think of product utilisation falling into three categories.

- 1) Direct consumption e.g. tree or bamboo harvesting
- 2) Consumption of the annual products (leaving regenerative matter intact) e.g. mushrooms, fruits and grass
- 3) Indirect or non-consumptive e.g. honey, water

The difference between one and two is hardly scientific – the division lies in the rate of replenishment and whether the main producer is left intact or not. Some resources do not clearly lie in one or another e.g. bark, branches or roots. Removal of these products does not involve killing the entire plant (provided not all is removed) the issue is quantity of matter removed and rate of replenishment therefore should be placed in Category 1. In Category 2 it is assumed that even if the majority of the product is removed yearly the regenerative potential is not altered. If this were true monitoring may not be necessary – however it is unlikely to be true as there are many other impacts such as effect of removing organic material from the ecosystem may have an impact on soil nutrients or the diet of certain animal species therefore impacting on their lifecycle and behaviour.

Category 1.

Involves the matter of understanding stock and flow. How much is there and at what rate will that removed be replenished? In a sustainable system, rate of in-flow or replenishment must at least equal the rate of offtake. Both rates can be altered but altering the in-flow rate of some resources can be quite difficult (e.g. difficult to increase the growth rate of some curio hardwood species).

Whether our objective is to maintain the current stock must be discussed. It might be desirable however to increase the current stock either because the population has fallen so low that the population is under threat and it is important to regain a critical population to kick-start a higher rate of replenishment and/or because it is a commercially useful species and the managers do not mind having more if it even at the expense of other less useful species.

In order to understand sustainable off-take it is necessary to do research on reproductive biology and in the absence of full knowledge sensible

deductions can be made using what knowledge is available. With respect to curio species it may be extremely difficult to claim to be able to manage them sustainably in which case the best alternative is to manage them sensibly.

Category 2.

The Nyika-Vwaza RUP exhibited some caution (some used to the levels of utilisation seen in forest reserves would be surprised) with respect to harvesting these resources. This is mainly on account of their management objectives of conservation of unspoilt nature. Nevertheless despite the apparently benign nature of utilisation, impacts may be there such as:

- Mushrooms - increased trampling may effect mycelium, deprives animals of food
- Fruits – increased offtake may deprive future generation of seeds or monkeys of food that in turn will lead monkeys to eat other things with the subsequent consequences this will entail.

Category 3.

Honey. From the forests point of view there is no discernible negative impact of placing hives in the forest. The risk of placing too many in one place is that each bee colony may struggle to find enough food therefore limiting productivity per hive. This is an issue of hive management and does not really have an impact on the forest. Impact could be in use of fire to harvest and this is already understood to have negative impacts.

MONITORING

	Monitoring is important to:	How can this be undertaken
1	Make sure that the sustainable harvesting levels or at least the agreed harvesting levels (in cases where no knowledge is available to set sustainable harvesting levels and best-guess harvesting levels are used instead) are adhered to	Within the management plan there must be systems put in place to monitor the rate of off-take. This is particularly important for curio timber species. A simple way of doing this is once the number of trees of which size and which DBH is decided the particular trees may be marked and felled within a specific period only. After that time every tree felled within that area is declared illegal. This will be monitored by whatever patrolling mechanisms the management authority puts in place.
2	To check whether the sustainable harvesting levels are having the intended impact and to enable modification and improvement	Periodic inventories must be undertaken to check how the tree composition or bamboo stands appear after certain periods of years or months. This can be done using permanent sample plots or inventories (latter probably better)
3	To check unpredicted effects of utilisation – particularly of those resources about which little is known e.g. trampling on mushroom mycelium	Specific studies concerned with certain resources. Collection of baseline data, with periodic re-assessment of certain parameters. The difficulty here is knowing which factors cause which changes – hence the need for experiments. Need expert advice coupled with local knowledge.

4	To establish a greater understanding of the ecosystem functions and the relationships between the ecosystem and the management and utilisation operations. e.g. impact of fire on mushroom productivity, impact of fire management on species composition in tree regeneration.	Permanent sample plots or experiments. The FRIM WEF project should yield some valuable data on mushroom productivity and relationships with trees.
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SECTION 7. DISCUSSION ON PRODUCT FOCUS

In order to select appropriate interventions to enhance the contribution of NRBEs to rural people's livelihoods and conservation it would appear prudent to focus on a few NRBEs in the first instance. The main criteria for selection are as follows:

- Availability of market – either local or export, preferably both. Expertise can be developed whilst supplying the local market and opportunities for export can be explored at a later date.
- Value – high value products should yield more profit for the local people
- Knowledge about the product or at least the resource – by the locals and the technicians (this is an important criteria in the first instance but in future no reason why cannot trade in completely new products). Also knowledge about the resource base is useful so that productivity can be understood and maybe even increased.
- Contribution of the NRBE to conservation (all that which is discussed in Section 4 must be taken into account but even so a resource which is multi-species or ecosystem-based will have more conservation impact than a single species resource)
- Community-based – a process or a production which can be handled at village level is better and some products are more appropriate than others for this. There may be some characteristics which favour village handling. Within this criterion is the issue of numbers – many people with some income maybe preferable that than few people having a large income (within reason).
- Other specific factors. There are other factors such as acceptability to the Forestry Department, acceptability to local people, can attract “alternative” trade label etc. which are also taken into account.

Of the products briefly discussed in Section 3 and presented in detail in Annex 3 four products are chosen (also see Table 9) as follows:

- 4 Curios
- 4 Wild Mushrooms
- 4 Honey
- 4 Fruit processing

Table 6. Selected focus products and characteristics.

Criteria	Curios	Dried wild mushrooms	Honey and honey products	Fruit processing
Comment	Main reason why chosen is that it is a high profile, high value activity involving a good number of people already. Currently the resource base is being “mined” with future risk to all those currently involved.	The Liwonde area is well acclaimed for being rich in mushrooms. Many are already involved. The market in dried wild mushrooms appears very promising.	Almost absent but potential extremely high. Local market unsaturated and good potential for organic honey for export. Excellent for conservation and home-processing	Absent but lots of fruit – mainly mango. Using mango as a vehicle into fruit processing could explore wild fruits which otherwise might not interest people at first e.g. Masuku. Mangoes are wasted in large numbers.

Market	Already there. Good within Malawi and export market. Improved designs and FSC label could increase premium.	Fresh: Good market locally, could be expanded for local and regional markets. Dried: local market would have to be developed. Export already very promising.	Local market might be limited (even though still unsaturated) unless efforts are made to turn honey into a mass-market product. Export would be for organic. Bee products would be very important addition.	There is a local market – already dominated by imports. Opportunity lies with replacing these with local produce. Use of wild fruits would enable the production of “exotic” products that could have extra market appeal.
Value	High (though falling?)	High /medium	Medium/high	Low /medium
Knowledge - the product	Much	About the product not much local knowledge but there is knowledge within the region. Lot written on drying technologies.	Not in Machinga but in Malawi in general knowledge is high	Not much local knowledge much globally a great deal.
Knowledge – the resource	It would be possible to come up with broad-brush management plan quite easily	FRIM research underway.	Much literature about beekeeping	Concerning wild fruit trees some research has been done and is on-going (FRIM/ICRAF)
Contribution to conservation	Good but very difficult. Limited to few species rather than whole ecosystem.	Good – ecosystem dependent	Good – ecosystem dependent	Mango – not much Wild fruits – medium impact
Community-based	Already is	Could be – except for processing where issue of hygiene critical	No problem	Not too difficult but need a processing plant – where?
Seasonal	Not really	Yes	Yes	Yes
Gender	Men	Women/Men	Men	Women
Management costs	High (but also consider that currently felling curio timbers is illegal)	May be difficult to ask collectors to “pay” for management because not used to this	Easier to introduce management costs within a potential enterprise because a “new” thing	Management costs low if depend on mangos.
Main challenge	To halt the current over-exploitation. Maybe it is too late.	Quality and hygiene.	Although a “new” activity people are aware. Challenge is to add value to the product in order to compete with an already competitive market.	Find the “right” product

7.1 CURIOS

Existing “Production to Consumption”

The vertical integration is quite weak as traders appear on a very *ad hoc* basis with little predictability. The prices are quite low but whether this is the maximum price the market can withstand given that fact that the curios pass through two hands before reaching the customer or whether the traders exploit the vulnerability of the carvers is not known. The curio makers are not in control of selling – they simply have to wait for traders /customers therefore difficult to set their own prices. Although the traders claim to not be organised they are informally organised on a very local scale. This does not appear to help pricing (in fact there is too much competition at the one site) but it certainly helps with bulk orders. A trader can be confident about buying in bulk if needed. The volume of production appears in itself not the limiting factor. A boom and bust result may well be soon forthcoming. Having said that the whole industry works reasonably well for a large number of people, especially considering the current low investment.

The market

Many of the Malawian carvings are sold to tourists within the country, but many more are exported to neighbouring countries. This is carried out on an informal, low-investment basis and suits Malawian entrepreneurs. The market appears good. Further a field there is also demand for curios and small wooden trinkets. A European buyer would have much higher standards (no splitting, warping or shoe polish), the process would be complex with the necessity to fill orders and tie up a large amount of capital in a container-load quantity of carvings. The prices for quality carvings in Europe and USA would be higher and yet without assurances that the wood is sourced from sustainably managed forests some traders may choose not to trade in these products (Murdoch Gatwood, pers.comm 2000). This factor is probably a minor limiting factor – at the moment – compared to the other issues involved in export to Europe but may be a factor that becomes more important. There is little evidence to suggest that a carving with an FSC label can attract a higher price but it may be sold more easily.

A success story

From an “economic development” perspective the curio industry in Malawi is working well for a lot of people. It is an activity and business almost entirely in the hands of Malawians, many are otherwise unskilled and uneducated, Malawian entrepreneurs have spontaneously stepped in to trade the products in neighbouring countries¹¹. Although the curios appear cheap given that the resource is obtained for free (or almost for free) the carvers are making a good living – hence their “strength” when it comes to defending their livelihood as witnessed in Machinga whenever the issue of license fees and controlling the trade is discussed. All this without donor assistance and training courses!

The challenge

From an ecological perspective the situation is not so good, but neither is it as bad as an activity such as charcoal burning. There is a threat that certain species will become locally extinct and indeed *Dalbergia melanoxylon* already has in many parts. The concern is not only from a conservation point of view but also from the business point of view – no more trees and the business will suffer. Some informants indicated

¹¹ This cross-border trade is currently experiencing some problems due to regulations but the details were not known at the time of writing

that it might be more appropriate to regard the hardwood timbers as non-renewable resources and as such every effort must be made to use the resources to their maximum potential rather than try to achieve sustainability.

The issues

There are two issues: a sustainable business and/or conservation of the resource base. Whilst NRBE promoters would like to suggest these are mutually acceptable, this reality may be difficult to achieve. On the one hand those involved in the business appear not to be interested in developing a sustainable business (they do not know how) – they are interested in making money now. In reality many traders may well switch to other businesses if the curio industry (some have already switched to mushroom trading WEF research March 2001) were to decline whilst carvers tend to move in search of the trees where they remain – in the long term this may mean a move nearer to Mozambique.

Ensure some long term security for the business

The objective must be to use the remaining resources at a slower rate so that stocks last longer (or in the best case scenario allow time for other trees to grow to harvestable size). From the carver's point of view this can only be acceptable if the same amount of money can be made in the same time and this can only be achieved if certain changes are instigated – notably improve quality and diversify, allowing entry into more lucrative markets. This can only be achieved through training and exploring and creating new market links. Of course the carvers and traders want to earn more money in the same time frame so by making the business more profitable does not necessarily lead to a slow down in wood use unless this is accompanied by controls.

Conservation of the species

If we are reluctant to subscribe to the non-renewable resource theory then conservation can only be achieved through management. The main challenge is how to initiate change with the commitment of the carvers taking the lead. The stick method i.e. introducing management (limited off-take, payment) by another party may cause resentment if this has an impact on supply. They may simply seek the timber elsewhere – which in turn reduces the incentive for the managers to manage to woodland. If the customers choose to go elsewhere there is a risk that potential gains to be made with management are not met. The carrot method, i.e. providing incentives to the carvers about better markets, is uncertain and it is difficult to see which must come first. It is likely for example that not all those currently involved in the industry will be able to participate in improved training and market links in the short-term.

Considering certification.

Table 7 has been drawn up to examine the steps that need to be taken to achieve certification. It can be seen that currently the Malosa and Liwonde FRs currently fail on every count. Mainly the failure is due to the lack of a management plan of any kind. The main challenge would be to institute management that means identifying the appropriate management body which if different from the Forestry Department would present quite a challenge. Principle 2 may be the hardest to achieve. However whether an FSC certificate is sought or not all these changes should be introduced in order to safeguard the future of the forest and the future benefits which it can offer the livelihoods of the local people. In doing so the objectives of the forestry department i.e. conservation would also be achieved. See Section 4 for some of the ideas for Management Mechanisms.

Table 7. Considering certification.

Certification can be achieved if all 10 principles are upheld.

	Malosa and Liwonde FR for curio timber production	
FSC 10 Principles & Criteria	Currently	Under a co-management plan
1 Forest management respects all applicable laws of the country in which they occur and international treaties and agreements to which the country is a signatory, and complies with all FSC Principles and Criteria.	Currently the Forest Laws state that live trees cannot be felled in Forest Reserves – only dead or dying. Under curio timber management plan it would be important to include the felling of live trees. Prices in the form of fines have however been set for each tree species likely to be used for curios. NO	The co-management plan would not alter this fact. Would have to be dealt with at legislation level.
2 Long-term tenure and use rights to the land and forest resources are clearly defined, documented and legally established.	Currently these rights are defined – i.e. the reserves fall under FD ownership and management. However it is proposed that management of these reserves should in some way encompass the co-management model allowed for in the forestry act. Within this context long-term tenure and use rights are by no means defined and certainly not legally established. NO	A co-management plan should define these rights – however it would be essential that: a) the community group (whether village or interest group based) would have to establish a legal entity b) there must be a legally binding co-management agreement between the FD and the CBO.
3 The legal and customary rights of indigenous peoples to own, use and manage their lands, territories and resources are recognised and respected.	A co-management agreement would take care of this. Currently not in place. NO	These issues could be dealt with under a co-management plan.
4 Forest management operations maintain or enhance the long-term social and economic well-being of forest workers and communities.	Currently the forest and what is going on in it (not really management operations – simply utilisation) are contributing to locals well being but little security for long term at this rate NO	Provided the woodland was actually being managed this would not be difficult to achieve – the point here is not to exploit local people as labourers. The only factor here would be the actual wages and that local people should be employed and not outsiders.
5 Forest management operations encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.	Yes this was happening and is happening but in a utilisation context only not a management context so NO	A co-management plan could easily be designed to take care of this
6 Forest management conserves biological diversity and its associated values, water resources, soils and unique and fragile ecosystems and landscapes, and by doing so,	Yes to some extent this was happening. Not any more. NO	A co-management plan could easily be designed to take care of this

maintains the ecological functions and the integrity of the forest.		
7 A management plan - appropriate to the scale and intensity of the operations exists and is implemented and kept up to date. The long term objectives of management and the means of achieving them must be clearly stated.	No management plan. NO	A co-management plan could easily be designed to take care of this
8 Monitoring must be undertaken - appropriate to the scale and intensity of forest management - to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.	No monitoring at all. NO	Monitoring can be installed. The chain of custody issue would be best dealt with by linking producers closely up to consumers. Would not work if produce entered the open market as would be difficult to tell the difference.
9 Management activities in high conservation value forests should maintain or enhance the attributes that define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach. 10 Plantations, where they exist, should be planned and managed in accordance with the FSC Principles and Criteria. They should complement the management of, reduce pressure on, and promote the restoration and conservation of natural forests.	Probably not relevant	

The Soil Association (SA) is an independent certifier, accredited by FSC. The SA certified the woodlands in Zambia being managed by Muzama Crafts Ltd. The cost of certification – over and above the management costs – can reach \$3000 per visit by the certifiers and they will need to make regular visits both prior to and after certification has been achieved. The Soil Association will make a preliminary visit to a potential applicant and explain how the management falls short and recommending steps to reach the desired standard.

Given that the existing market for Malawi's curios is not demanding that the wood is sourced from sustainably managed sources there is little imperative economic need for certification at the moment. Needless to say the management issues highlighted in the above table are still very important but can be dealt with without going through the expensive certification process. If new European markets for Malawi's curios can be developed through a process of quality control, new design and new market links and such markets demand an FSC label then this issue should be re-examined with more accurate figures to allow a thorough cost-benefit analysis. The products can also be sold with an "own label" i.e. a local body indicates that the wood is produced in an "environmentally friendly" way. This alternative may not be so rigorous as an FSC label but it may satisfy some customers especially if the retailer can see for him/herself where the wood is coming from.

ACTION PLAN – CURIO MAKING

Area	Narrative	Action						
Production	Manage the resource base for the future (if management were introduced the cut back in supply may be offset by increasing area of supply – which in turn means increasing area under management with all the implications this brings). Management could in turn lead to FSC certification but the economics of such an investment must be carefully worked out.	See Sections concerning Management. Curio-makers either buy wood from a Management Body or they become involved in co-management as an organised body of users						
Improve Product	Use seasoned wood and avoid use of filler and shoe polish. If carvers did not make chiefs chairs they maybe able to make more of other things (chiefs chairs are wasteful of wood and it is difficult to find a flawless piece of wood big enough to make a chiefs chair, easy for an egg-cup). This would be useful if a market survey was undertaken as opposed to simply making elephants. Consider moving away from the “traditional” animals and figures and explore more utilitarian items such as boxes, bowls, bookends, doorstops, salt and pepper pots, picture or mirror frames, letter racks, carved clock bodies (simply add quartz mechanism), wooden plates (sets). These tend to require carpentry skills as well as carving skills hence need for skills training.	Market surveys Training Information						
Marketing	Discuss more optimum ways of exploiting the existing market. If appropriate make direct links with traders in Europe or N. America and discuss markets. Carefully consider the issue of “alternative” labels.	Vendors to be organised Form linkages Information						
Implementation approach	The best way forward maybe to link a small group of carvers up with a co-managing community. Then it would be possible to work on forest management and improving the product and market links at the same time. The carvers must agree to buy the timber they need from the co-managing community if they are to participate in the “project” assisting them with designs and market links. Even without certification a market label can inform the customer about how the product was produced (it is up to the customer whether to believe the label or not).	Identify appropriate forest area Identify the right co-managing community Identify willing carver participants Draw up felling plan Draw up plan for optimum utilisation of that timber – based on market survey Assist with designs, quality control and market links						
<p><i>See Annex 2 for contact details of useful organisations:</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Forest Stewardship Council</td> <td style="width: 50%;">The Soil Association</td> </tr> <tr> <td>The Miombo Forum</td> <td>Fall Brooks Centre</td> </tr> <tr> <td>Take Care</td> <td></td> </tr> </table>			Forest Stewardship Council	The Soil Association	The Miombo Forum	Fall Brooks Centre	Take Care	
Forest Stewardship Council	The Soil Association							
The Miombo Forum	Fall Brooks Centre							
Take Care								

7.2 HONEY

The honey business in Machinga and Malawi

At the moment the honey business is barely an activity at all in Machinga and so the existing business and trade cannot be analysed. There are, however, other beekeeping projects in Malawi. Evidence suggests that these have all been successful with regard to production. There is no reason to suggest that the potential beekeepers of Liwonde would have any problems. The forest is ideal and those villagers who were interviewed expressed enthusiasm (this was in contrast to villagers near Mulanje (Wildlife Society of Malawi, 2000) who expressed some fears of thefts, witchcraft and being stung when beekeeping was mentioned). The activity is well suited to the capacities of village people. The technology is easy to obtain and beehives can easily be homemade from wire and mud (DFO-Mzuzu). Reports were identified where beehives have been made from Chiwale palm – a locally available material in Machinga (TAA 2000). The beekeeping and honey processing activities are simple and good quality clear honey can be processed easily in a village environment.

Markets

The main challenge is marketing. Other projects in Malawi have run into marketing problems but it is thought that this was due to lack of attention paid to the marketing issue and business planning rather than a problem with the market itself. The Liwonde site has one very great advantage (compared to Nyika for example) and that is accessibility and proximity to Zomba and Blantyre and even the tourist locations of Liwonde National Park and Mangochi. Given the large area of woodland it should be possible to produce enough honey and beeswax to establish a processing unit for bottling, labelling and most importantly the production of beeswax products. With creative marketing and correct pricing it should be possible to turn honey into a mass market product for the “average” Malawian, this may depend on packaging, size of unit sold and of course price and outlets. Honey could be sold in small sachets for example like cooking oil, stork margarine and some spirits. There is a industrial market for honey in Malawi (pharmaceutical companies) and also the hotel trade could use large quantities of local honey. Honey is imported into Malawi and until this is no longer the case Malawi honey should be able to compete locally.

As far as export is concerned most sources indicate that the market is highly competitive and saturated except for organic honey. Obtaining an organic certificate for the forests would not be difficult from the point of view of passing the test (unlike the FSC certificate) because no chemicals have been or are being used in the reserves. The certification process still costs in the region of GBP 2000 every year. Ideally the business would be able to bear this cost but it is also possible that a European buyer may bear this cost in the interest of accessing the organic honey source.

Good quality organic honey can fetch up to US\$17,500 per ton (Gatwood, pers. comm., 2000)

Challenges

Management must still be there to prevent the forest from degradation. The beekeepers must have the means and the rights to protect the woodland from destructive forces.

ACTION PLAN – HONEY AND HONEY PRODUCTS

Area	Narrative	Action
<i>Production</i>	Since current production is very low this would be the first area for intervention. Because this is a “new” activity it should be possible to “engineer” immediate links with resource management e.g. beekeepers must pay (the Management Body) to put their hives in the forest or become the Management Body	Identify participants Obtain or make hives Train beekeepers in hive and bee management
<i>Improve Product</i>	Currently there is no product. Explore opportunities for making other products such as beeswax candles or furniture polish or selling/exporting to other processors.	Train beekeepers in honey and beeswax extraction and processing Identify other appropriate honey products Information
<i>Marketing</i>	Ideally different markets should be targeted with slightly different products – main difference may be the quality, packaging, prices and outlets Establish size of local market for industrial honey (Malawi Pharmacies) and table honey for supermarkets and the tourists market. Establish links with existing wholesalers (e.g. Tambala foods), retailers (e.g. WSM) and overseas customers for organic honey.	Market surveys – especially for wax products Think about packaging – sachets, plastic (Malawi) or glass (imported only) Make links with consumers -
<i>Implementation approach</i>	The key is to identify the possible participants. From the start make sure the link to forest management is there. Set up service provider for hives (or how to make your own) and processing and marketing information.	
<p><i>See Annex 2 for contact details of useful organisations:</i> The Soil Association Bees for Development www.tropicalforest.com (<i>sells organic honey from “wild” sources</i>)</p>		

7.3 MUSHROOMS

Existing “Production to Consumption”

The existing production to consumption chain for fresh wild mushrooms is on the whole short – mushrooms are collected and sold by the same collector to the customers – but increasingly more and more are traded and sold in Zomba. The collectors who sell directly to customers have no costs apart from labour and can make good profits. The labour investment can however be high and as the activity coincides with the farming season the opportunity cost is also a consideration. A mushroom seller may make as much as MK 100 per day over a mushroom season of about 60 to 80 days. Some, however, collect and sell to traders bringing the profit margin per person down (traders pay less) but allowing greater quantities to be sold. Those villages not near the road more often sell to traders than sell direct. Horizontally the amassing of sales in one location i.e. the Chingale turnoff has enabled the mushroom vendors to establish a known market place that is well established and recognised by customers. Many customers much prefer to buy mushrooms from this site over and above another and also over and above town markets. Women from Ndaje (the Zomba side of Machinga boma) said they could not sell mushrooms easily as the market has been “captured” by the women from the Chingale roadside.

The main opportunities for change lie in intensity of collection and reaching a wider market. Villages far from the road collect and sell far less intensively than those near the road. The reason is obvious and the solution lies in processing i.e. drying. It may be difficult to improve on the profit margins of the current roadside sales given the minimal costs involved. Processing the mushrooms currently sold at the side of the road – even if the eventual product were to be dried and sold in a delicatessen in London or Rome – would involve such costs that the profits may not benefit the village women. However if drying allowed more mushrooms to be sold then this presents a real opportunity.

The market

Fresh: Fresh wild mushrooms could easily be successfully marketed in Blantyre, e.g. in the supermarkets, hotels and restaurants. They could be offered as a “local dish” to tourists in hotels. The issue would simply be that of transportation of the fresh produce – however this may not appear as daunting as it may first seem. Fresh chambo from Lake Malawi can leave the beaches and be in people's kitchens within a few hours – the key lies in demand and value. Fresh wild mushrooms could easily fall into this category and evidence from recent WEF project research¹² revealed that the local market in wild mushrooms is already expanding of its own accord. Customer education and “awareness raising” (otherwise known as advertising) could aid expansion. Some operators export fresh mushrooms from Zimbabwe to Europe but whilst this would be an ambitious goal for the target area – at the moment – there is reason to believe the fresh product may be marketable within the region e.g. RSA.

Box 11. *Edulis plantations*

Very recently a company from RSA, *Edulis Plantations*, expressed an interest in harvesting and trading in wild edible mushrooms from Malawi's forests. A scoping visit was carried out early 2001 and it is believed that concessions will be given to the company to harvest mushrooms. The local arrangements are not known. More information should be obtainable from the Director, Department of Forestry.

¹² See forthcoming report by the same author

Dried mushrooms: Locally the dried mushrooms market would have to be developed. This might be handled by developing or promoting recipes. Internationally the market is already there and would be best served by organic mushrooms although the difference might not be as high as for honey because the product wild mushrooms is already quite exotic and inherently organic. A short look on the Internet revealed several companies offering wild mushrooms for sale. Dried Chanterelle (Chipatwe type) were being offered for \$16 for 4oz or 100g. As for the fresh a regional market maybe the best target market for the medium term and should be explored. It would be important to establish the exact species as one cannot export a product using local names or guessing the scientific equivalent. The FRIM WEF project is therefore an important asset for this business.

Box 12. Tropical Wholefoods

Tropical Wholefoods is a company which started operating about 10 years ago and buys dried fruits such as banana, mango and papaya directly from the producer farmers (small), packages and sells to the UK market. The fruits are dried on the homestead of poor farmers in Uganda and Zambia amongst other countries. A solar dryer is used. Tropical Wholefoods also trades in dried mushrooms from Zambia – principally the Chanterelle species. Although the mushrooms were cleaned using a jet-spray water cleaner imported especially for the purpose the company Director reported that his customers complained about grit in the final dried product. Furthermore some of the processing was being done on a subsidised basis “to see if it would work” and yet still the product line was less profitable than the fruit. This was to a UK market (Continental may be better). Finally the Director cautioned that whilst mushroom identification is possible with the fresh, with dried products it is difficult to sort. This means “contracting out” the processing to farmers and households is difficult and would have to be done at a central processing plant – leaving the poor farmers little opportunity to add value unlike for the fruit.

(Adam Brett, Director of Tropical Wholefoods – pers. comm 2001)

Processing

The main processing method would be drying. There are numerous low-tech drying technologies already developed although selecting the right model may require some more research. In Zimbabwe mushrooms are dried in tobacco barns, solar dryers and also electric dryers. The issue would be to marry a suitable village based technology with the fact that the mushrooms season is also the rainy season and that a high standard of hygiene is necessary. It might be wise to aim to set up a town based processing plant in Machinga or Liwonde. The advantage would be the ease of processing (even using electricity) the disadvantage is the distance for some collectors would still be very high and the question is then raised about who owns and runs the processing plant and whether the extra profits to be made from processing accrue to the villagers or a factory owner. Apparently it takes 10kg of fresh mushrooms to make 1 kg of dried.

Dried mushrooms may be rehydrated and used in cooking just like fresh mushrooms. It is recommended that in a recipe calling for 800g of fresh mushrooms 100g of dried would be needed. The rehydration process is easy; just soak as many mushrooms as you would like to cook with in warm, lightly salted or sugared water for half an hour. Some people like to rehydrate the mushrooms in a wine diluted with water (10:1). [extract from the website of Gourmet Mushrooms]

Challenge

There are a number of challenges and risks relating to this business:

- quality and hygiene (the collection methods may need to be developed to avoid

contamination)

- developing markets locally and within the region
- risks of damaging the already lucrative roadside trade in fresh mushrooms
- risk of removing mushrooms which would otherwise be used by the poorest of the poor for relish during the hungry season
- taking control away from the existing stakeholders
- damaging the resource base through over collection

The risk associated with poisonous mushrooms is considered very small provided the mushroom collectors are not ousted by others with less knowledge and experience

ACTION PLAN – WILD MUSHROOMS

Area	Narrative	Action
<i>Production</i>	The main emphasis would be collecting and processing mushrooms which otherwise remain uncollected or which are collected and unsold and not consumed. Important to consider the impact of increased collection and even forest management for increased production.	Build on the results of the WEF research project. Make links. Identify scientific names of the prominent mushrooms
<i>Improve Product</i>	Select those mushrooms most likely to be marketable. Experiment with drying technologies (indirect heat probably most suitable (A. Schomburg, pers. comm. 2000), packaging and storage.	Information and technical advice Experimentation
<i>Marketing</i>	Identify market niche – Price Product Place and work towards this. If good market for organic wild mushrooms can be identified think about organic certification. Great opportunity for certifying large area to benefit honey, mushroom AND fruit industries.	Market surveys – local and international Work on recipes and promotion material Establish cost of organic certification and market advantage
<i>Implementation approach</i>	Identify village-based mushrooms collectors interested in participating. Location would have to be discussed i.e. those who have access to excess mushrooms. Make a link to Forest Management Body.	
<p><i>See Annex 2 for contact details of useful organisations:</i> The Wild Mushroom Handbook 1996/1997 Tulimara (Pvt) Ltd. FRIM WEF project (Gerald Meke) www.gmushrooms.com (the g stands for Gourmet)</p>		

7.4 FRUIT PROCESSING

Fruit processing in Machinga and Malawi.

As with honey, an analysis of the existing trade (in Machinga) is unnecessary, as the trade does not exist. The main obvious resource is mango – which is not of course a forest product - on account of its abundance and wide distribution. There is a lucrative roadside trade for unprocessed mangoes and traders do come and buy to take to town. Some of the more remote villages also sell to traders but their return is low. Nevertheless hundreds of tons of mangos are wasted yearly.

A good analyse of the fruit processing business opportunities can be found in a report “Opportunities and Potentials for Processing of Horticultural Products by Small Entrepreneurs” prepared for GTZ in 1999. A list of most promising products with criteria was produced. Those that would be feasible for the Machinga area and that could utilise both on-farm and in-forest fruits include:

- Dried fruits
- Mango Achaar
- Jam
- Wines
- Fruit juices

The report then details the technology, the products, packaging, economics, marketing and support services for each product. The context is Malawian so the information is highly relevant and, for example, documents all the packaging materials available in Malawi with prices.

The report concludes:

- this type of fruit processing is highly undeveloped in Malawi
- main constraints include lack of access to capital, lack of expertise, poor linkages to producers, low purchasing capacity of consumers and the fact that the local and regional markets are dominated by South Africa and Zimbabwe.
- the opportunities are that low-cost material is there, the local market is exclusively served from abroad and for many products a cost advantage may exist over imported products. A comparatively well-developed packaging industry exists in the country.
- the potential contributions of small scale processing of fruits (and other horticultural produce) to economic development particularly in rural areas are considerable. A small amount of investment can add much value

Processing

The same report gives a lot of information about processing with details. It is interesting to note for example that in the European Union the addition of chemical preservatives to fruit juices is not permitted and yet for a community-based enterprise the packaging and preserving of fresh juices would be a challenge. A VSO expert in food technology is currently based at Magomera Community Training College and is working partly for ICRAF on processing of indigenous fruits (those which ICRAF has been domesticating) and partly on the development of training courses in such processing at Magomera itself.

Management implications

There is no management problem with respect to mango trees – they are already well managed. The management issue would be there with forest fruits particularly

masuku which are also used for curio making by some people and charcoal by others.

Challenge

In the Machinga context the main challenge would be to develop the right product – easy to produce and easy to sell.

ACTION PLAN – FRUIT PROCESSING

Area	Narrative	Action
Production	The fruits are there in plentiful supply. It would be useful to establish a range of fruits to be processed to accommodate the seasonality issue.	Identify suitable fruits apart from the obvious ones.
Develop Product	Work with a range of products such as dried mango, mango juice, pulp (for ice cream and yogurt industry), jam, achar and fruit leathers ¹³ . Also experiment with wild fruits such as masau, masuku (those that occur in abundance) and also those that occur in less numbers.	Using information from other sources (Magomera, GTZ Horticulture Project) initiate some product development trials
Marketing	The main market would be local unless some very unique or exotic products can be developed. The challenge would be to develop products that would appeal to and be affordable by the mass Malawi market.	Market surveys (some already planned for ICRAF for indigenous fruits – VSO at Magomera) Make marketing information to potential stakeholders Identify cost-effective packaging
Implementation approach	Local NGO could establish a processing unit for trials. This could be used for women's groups to train and for demonstration purposes. Later groups (or individuals) could set up their own operations.	
<p><i>See Annex 2 for contact details of useful organisations:</i> ICRAF FRIM Promotion of Horticulture Project (GTZ) Alexandra Schombourg – Magomera Community Development Training Centre</p>		

¹³ Concentrated and sweetened fruit pulp then dried – a confectionery or snack food

Box 13. Summary of main opportunities and challenges

The main opportunities are:

- 1) The lack of competition within Malawi
- 2) The growing Alternative Trade market internationally

The main challenges are:

- 1) Instituting forest management to secure the resource base
- 2) Finding the right business models for viable community-based enterprises avoiding dependence on long-term project support and subsidies and spreading benefits widely amongst the poor

SECTION 8. CONCLUDING DISCUSSION

FOREST

- The optimum land use for Liwonde and Malosa forest reserve is maintenance of indigenous woodland.
- Despite their best intentions the FD is failing to safeguard the future of the forest through the existing management approach. There are a number of reasons for this, such as: lack of funds for running the district forestry operations, low wages of staff leads to lack of motivation and corruption, high poverty levels of locals presents the department with moral challenges to which they do not have the answers and politicians are undermining the efforts of the FD by using access to reserves as a campaigning tool.
- The woodlands must be managed or else the pressures of utilisation will lead to unacceptable and unwarranted forest loss which will lead to a decrease in the quality of life of the local people – both through loss of income and loss of subsistence goods and services – and a failure to meet the FD management objectives for the reserves.
- There are management costs associated with management.
- The primary objective of management is open for discussion (welfare functions, conservation, income generation), likewise the management mechanisms. Both these issues are secondary to the imperative that the woodlands must be managed.
- One could argue that income generation from woodland management should PAY for management and conservation or one could suggest that the primary reason for management is for the welfare function but that commercial exploitation by a few people – at the same time – can at least contribute to the management costs in part. The answer to this question depends on whether the cost of management can really be borne by any other source apart from the woodland itself. E.g. government funds (welfare state), donor funds or voluntary work.

UTILISATION

- The local people are currently engaged in a number of significant forest utilisation activities bringing income to thousands of families at different times of the year.
- Local people are not spontaneously stepping into the shoes of forest managers nor is it likely that they will do so without some significant inputs – local people are in effect mining the resource, except concerning those resources which are self-replenishing like mushrooms and fruit and grass.
- The woodland itself has remarkably good powers of regeneration if relieved of at least some of the intensity of regular late season burns and unplanned tree cutting.
- Without management utilisation will lead to degradation and subsequent loss of benefits.

CO-MANAGEMENT AND LOCAL PERSPECTIVES

- Even under a co-management regime people say but this is the Government's job, "they are being paid why aren't we"?
- People have "gone off" the idea of community labour (as being exploitative) and do not see beyond that
- Poverty forces people to think of today and not the future, giving up firewood selling is not an option for them if there is no alternative

- People value the service benefits and subsistence benefits the forest offer but they are unable or unwilling to undertake management and all the costs that this involves purely for these benefits. Having said that once the element of commercial enterprise and profits for some are introduced people are even less inclined to bear the management costs unless they are the direct beneficiaries of these enterprises (i.e. not all benefit equally therefore not all want to participate in co-management)
- Corruption within the FD has an impact on local attitude – if the FD can break the rules so can we
- People use the forest for subsistence goods BECAUSE they are poor and not because they WANT to be poor. This means that many poor people prioritise reducing their own poverty over an above maintaining the safety net, which helps them if they fail to reduce their poverty.
- Some people still have not understood that existence and nature of natural resources can be influenced by the hand of man – this is seen as a contradiction in essence
- Projects and politicians (and other influences) confuse people and lead them astray. People are somehow lead to think – we must get more.

NATURAL RESOURCE BASED ENTERPRISES

- NRBEs are seen as a solution to two problems at the same time i.e. relieve poverty and make management (and conservation) an economically sensible thing to do from a local livelihood point of view
- There are undoubtedly big opportunities for developing NRBEs in the target area. There are opportunities to enhance the existing activities such as curio-making and mushroom selling and opportunities to introduce new activities such as beekeeping and fruit processing.
- At the same time there are constraints. These are:
 - lack of security of tenure by the NRBE participants therefore lack of control over resource base
 - NRBE participants are accustomed to getting their resources almost for free in many cases, the first reaction will be reluctance to contribute to forest management (either money or labour, but especially money)
 - NRBE participants lack market information, technology information, access to credit and many lack skills in business management.
 - There is some concern that an increase in value of a product will lead to increased exploitation rather than managed exploitation – this is a real concern if the management issue is not resolved

WHAT COULD BE DONE

- Management must be instituted which involves the prescription of management objectives, management costs and management mechanisms.
- A management body other than the FD-alone should be established. There is room for creativity here, for example the creation of a Liwonde Forest Management Trust with a wide range of stakeholders (including the FD) as Trustees could be an option.
- Research shows that there are considerable opportunities for investing in the natural product trade and it is suggested that assistance is given to local community-groups or local entrepreneurs to establish viable and sustainable businesses based on the available natural resources.
- Products should be targeted first and foremost at the local market. If appropriate

and possible the “alternative trade” market should be accessed.

- Assistance should be provided in the establishment of the businesses and marketing the produce. Such assistance must be aware that business is business and cannot become sustainable on subsidies and handholding.
- Assistance should be provided to the management body to help them manage the resources to optimum effect and to ensure the sustainability of the sought after resources.
- The managers and the producers may be the same people / group or they may be different.

Clearly we have a complex situation here, one that requires multiple solutions. There are no simple interventions that we can make which will automatically lead to results. The implications of this are that the existing stakeholders are unlikely to be able to forge ahead with the suggested changes without donor support and should donor support be sought the commitment required in the part of the donor would be significant in terms of money and time. Whilst the two NGOs who initiated this study, WSM and Greenline, may be able to play important roles in any donor-funded project, if FR management is to be tackled, the bottom line rests with the Forestry Department. To date the FD have sole authority over the reserves in question (somewhat different on customary land) and without them leading the way as it were very little progress is likely to be made. The responsibility therefore lies with the FD to examine, search, analyse, negotiate and collaborate with all and any stakeholders to find a workable solution. Such a solution is almost bound to involve some kind of partnership. The FD need not fear that such a partnership will compromise their own position or chance of meeting their own objectives. The objectives of conservation and a sustainable business are not opposing.

Once the management issues have been resolved it will be a lot easier for any donor to have confidence in investing in the development of locally based NRBEs.

SECTION 9. RECOMMENDATIONS AND ACTION PLAN

STAGE ONE RECOMMENDATIONS.

1. **It is recommended that** the forests of Malosa and Liwonde forest reserves are maintained as indigenous woodland (where local feeling and commitment is high some eucalyptus plantations could be gradually replaced by indigenous woodland through natural regeneration or planting of commercial indigenous species such as *Pterocarpus angolensis*).
2. **It is recommended that** the forests must be brought under a sustainable management regime and this can only be achieved through the drawing up and implementation of management plans.
3. **It is recommended that** management is best undertaken following a co-management or partnership approach where roles, responsibilities, rights and returns are clearly discussed and spelt out before implementation. Some parts of the forest may remain under sole FD management.
4. **It is recommended that** the cost of management is borne by the Forestry Department (technical advice, field and office based support), law enforcement apparatus (in extreme cases of violation), local people (labour, committees, short-term opportunity costs of controlled utilisation as opposed to mining the resource) and through “internal sources” of income i.e. generated by the woodland itself. The proportion of the costs borne by each method could not be specified at this stage.
5. **It is recommended that** in order to maximise the chances of success:
 - 5.1 particular emphasis is placed on increasing the “internal sources” of income i.e. that generated by the woodland itself.
 - 5.2 this should only be attempted once the management plan and management structures are in place (or at least having been initiated) or else 5.1 may lead to increased exploitation rather than increased incentives for management

STAGE TWO RECOMMENDATIONS

It is recommended that all means of increasing revenue from the forest should be considered e.g. selling firewood, chiwale crafts. This report, however, specifically identifies three/four product areas that should receive particular focus. It is recommended that investment is made in the enhanced production, management, processing and marketing of these products in order to contribute to achieving Stage One recommendations 4 and 5.

- Curio-making Strong activity already, high value
- Honey and products Extremely beneficial to forests, opportunity for organic
- Mushroom processing Strong activity, supporting research, women
- Fruit processing If mango centred, this is not forest generated

It is recommended that in order to maximise revenue and management incentive still further the issue of “alternative” labelling should be considered. This might involve seeking organic certification to add value to honey and honey products, mushrooms and forest fruits and sustainable forest management certification for wood (or bamboo) products.

ACTION PLAN A – INSTALLATION OF MANAGEMENT PLAN AND MANAGEMENT STRUCTURES

1	Set up multi-stakeholder Steering Committee for Strategic planning
2	Steering Committee should hold stakeholder meetings to discuss the following: <ul style="list-style-type: none"> • Identification of areas of forest, their respective communities and identification of all stakeholders (especially those who may not be represented) • Management Objectives for the woodlands – taking note that different stakeholders may have different ultimate objectives • Election of representatives for each area or stakeholder group • Discussion of various management mechanisms e.g. FD, FD and VNRMC, Village Trusts, User Group Trusts or Associations • How a management plan is to be drawn up (costs and technical advice) • Other facilitating activities such as exchange visits for Steering Committee or stakeholder representatives and issues concerning commercial activity development (who will pay for these) • How to attract donor funding
3	Steering Committee to draw up a Strategy for the Way Forward. Seeking and receiving donor funding will be an important part of this. Funding will be needed to draw-up management plan (and all the discussions and negotiations and inventory which this will entail), funding will be needed to train some of the key participants of the “new” management authority (whatever it might be) and to assist with the early implementation of the management plan. Enhancement interventions for NRBEs should also be included within the Strategy.
4	Implement Strategy for Way Forward (the main component of the strategy will be the Management Plan – see next point)
5	Draw up management plan which must first include: <ul style="list-style-type: none"> • Discussing management objectives and contentious ideas such replacement of bluegum plantations and management for firewood production • Inventory • Discussing who and what might be the most appropriate management authority • Discuss issues of tenure and rights and how they can be legally upheld • Discuss and draw up permit system or whatever revenue raising mechanisms is to be installed • Discuss and draw up rules and regulations and methods of enforcement • Idea of appointing community patrolmen (with remuneration) • Installation of monitoring mechanisms • Management Agreement and legal status of fining and law enforcement • If the focus products are taken on board as key management objectives the management plan must reflect this e.g. cutting rate for curio timber (size, species, location, price)
6	Implement Management Plan – early-days
7	Management Plan fully operational

For the discussion, planning and implementation of enhancement interventions for NRBEs – see Action Plan B

ACTION PLAN B– ENHANCE INCOME GENERATION POTENTIAL FROM THE FOCAL WOODLAND PRODUCTS

This action plan is somehow secondary to the Management Plan as without the management plan these activities may not be sustainable – BUT these activities are those which provide the proverbial “carrot” to the local stakeholders and should perhaps be implemented alongside the management plan process rather than wait for this to be completed.

This Action Plan is crosscutting across all the Focal Products and even those NRBEs that have not been singled out as Focal Products. (The mini-action plans already drawn-up in Section 7 refer to the specifics for each focal product).

1	Carry out market surveys. It is important to undertake some more detailed local, international and alternative trade market surveys in order to generate the information that NRBE actors require.
2	Provide information and networking facilities. It is important for information to be made available to NRBE actors. Information about markets (demand and prices), processing technologies, recipes, packaging options etc.
3	Form linkages. A step further than simply having access to information is making contact or linkages. It is important that a NRBE actor not only has backward linkages to the resource base but forward linkages into the consumer market. NRBE actors may need assistance to find their markets and make contacts. It is also important to make linkages with support infrastructure such as where to buy equipment, packaging information etc.
4	Identify processing technologies. There needs to be a process of identifying the right technologies for the appropriate needs. These need to be made available to NRBE actors whether on loan or as a grant. Training to use equipment and undertake processing must also be considered.
5	Community-groups or local entrepreneurs need assistance in improving or establishing their businesses <ul style="list-style-type: none"> - business management training and advice with business models - access to credit - training for conducting simple market studies - assistance to source processing equipment - assistance with marketing mechanisms – it may be appropriate for the local producers to set up a marketing association for one/many products
6	Continue investigating and researching into other natural products which could be developed

ANNEX 1: PEOPLE CONSULTED DURING THE STUDY

FORESTRY DEPARTMENT

Name	Post and/or place of work or residence
Mr. Victor Msiska	Regional Forestry Officer (North) - Mzuzu
Mr. Mswoya	Beekeeping Coordinator - Mzuzu
Mr. Mwinichanja	District Forestry Officer (DFO) – Mzuzu Urban
Mr. Kanyemba	DFO – Machinga
Mr. Mkwamba	Assistant DFO (ADFO) – Machinga
Mr. Phiri	Forestry Assistant - Machinga
Mr. Peter Douglas	Forest Guard – Machinga. Work place near Boma
Mr. Godfrey	Forest Guard – Machinga. Workplace NW part of Malosa FR
Mr. J. Manganda	Patrolman – Machinga. Workplace SW side of Mongolowe Hills
Mr. Asan	Patrolman – Machinga. Workplace Naungu.
Mr. Makawa	Patrolman – Machinga. Workplace Likwakwa Forestry Station
Mr. Kanyanda	DFO – Zomba
Gerald Meke	Forestry Research Institute of Malawi (FRIM). Key scientist with Wild Edible Fungi project.
Denis Kayambazinthu	Acting Chief Forestry Research Officer, FRIM, Zomba.
Mr. Nkhana	DFO Nkhata Bay
Richard Chatchuka	Forestry Research Assistant – Kasungu

DEPARTMENT OF NATIONAL PARKS AND WILDLIFE

Richard Hartley	Adviser to DNPW for World Bank - Southern Parks Project
David Mulolani	CBNRM adviser, DNPW, Mzuzu.
Gibson Mpepho	Research Officer – Nyika National Park
Agri Zimbiri	National Parks Manager – Liwonde NP
James	Community-liaison officer, Liwonde NP
Alex Banda	Regional DNPW Officer - North

LOCAL PEOPLE INVOLVED IN NATURAL PRODUCT PROCESSING AND / OR TRADING PLUS OTHER VILLAGE-BASED RESPONDENTS

TA Fukumaphira	TA Fukumaphira, Kande Village, Near Chinteche.
Mr. Fraydom Manda	Chairman, Chisasila Beekeeping Club
Light Nkhoma	Member of Chisasila Beekeeping Club
Mr. Mwavitinthiza and members of his family	Lives on the edge of Nyika National Park, near Thazima.
Mr. Mbewe	Secretary Kalwe Beekeeping Club, Nkhata Bay
Mr. V. Phiri	Treasurer, Kalwe Beekeeping Club, Nkhata Bay
Mrs. Niyrenda	Member of Kalwe Beekeeping Club, Nkhata Bay
Mr. D. Mwenikondo	Vice Chairman of Kalwe Beekeeping Club, Nkhata Bay
Mr. S.J. Mpola	Chairman of Malopa VNRMC, Liwonde FR
VH Naungu	Naungu village, north side of Liwonde FR
Mr and Mrs Chapola	Naungu village
Zuone Mbando	Young woman, Dija village, north side of Liwonde FR
Mr. Omad	Elderly man, keeps bees using local methods. Naungu village
Justin Amon	Chiwale furniture maker, Naungu

Lyson Size	Bamboo item maker, Naungu
Tithokoze Womens Group Annie Chipojola, Catherine Friday, Agnes Kayisi, Margaret Majesa, Alice Chiwisa and Beth Mkasa.	Bamboo furniture makers, Liwonde
Elad Chipojola	Curio maker, Liwonde
Ntira Womens Group Agnes Peter and others.	Bamboo furniture makers, Nthira
VH Lulanga	Village near Zumulu
Mr. Chindenga	People from the village of Lulanga who told us which forest products they use and value
Mrs. Rose Kassim	
Mr. W. Robert	
Jonas Kapika	
Austin Dickson	
Friday Daniel	Traders and carvers at the roadside – Chingale Turnoff
Robert Wembe	
Victor Mkwanda	
Mr. Shama Ajibu	Carver in Chisanje Village, West side of Malosa FR
Mr. John Lyson	Carver, Makuganya village, West side of Malosa FR
Mr. Peter Katunga	Carver, Makuganya village, West side of Malosa FR
?	Beekeeper using local methods, Mbalagwe village.
Grace Unis, Mrs. Chiwaya, Enetes Wyson, Margaret Phulusa, Mary Beston	Ladies who sell mushrooms from Wilson Village, near Chinduzi Hills.
VH Jusu	Jusu, between the Chinduzi Hilla
VH Wilson	Wilson
GVH Nkula	Chingale Turnoff (also a Forest Patrolman)
?	Secretary of Ndaje VNRMC - Group A
Issa Black	Chairman – Kalaje Village VNRMC - Group B
Margaret Chilunga	Treasurer of Kalaje Village VNRMC - Group B
Shibu Mala	Chairman, Kawamba Village VNRMC – Group C Also makes basket chairs.
?	Chiwale furniture maker and trader, Ndaje.
OTHERS	
10 curio makers and traders	Chingale turnoff
7 chiwale furniture makers	Maluchira, Msigalila, Chidothi, Wilson and Misoya villages
Basket and mat makers and mushrooms collectors	Mbalagwe, Mwedini and Mpenda villages
15 firewood sellers	Machemba. Chingoli, Chileka, Matandika, Machemba and Chirimba.
Palm leaf mats and basket chair makers	Mliwo and Liwanga village
Curio sellers	Liwonde

NGOs

Christine Witte	Director, International Eye Foundation
Daulos Muambeta	Executive Director, WSM
William Chadza	WSM

David Chitedze	Director, Greenline Movement
Bernard Mwale	Ward councillor candidate (also of Greenline Movement)

PROJECT STAFF, CONSULTANTS AND OTHERS

Dr. Andrew Siedel	Consultant biologist for the Border Zone Development Project, Mzuzu
Arthur Stevens	Chairman of SHOGA and commercial organic farmer
Nicola Bradbear	Consultant for SAFIRE-led Natural Products Association fact-finding mission and Director of NGO Beekeeping for Development
Murdoch Gatwood	Project Manager, TEEM
Lois Losacco	Manager, La Caverna
?	Manager of PTC Mzuzu
Martin Skottke	Adviser, SADC FSTCU
Luke Malembo	Consultant, DANIDA
Andreas Jensen	Chief Technical Adviser, Lake Chilwa Wetland and Catchment Management Project
John Heermans	Chief of Party, CBNRM – CLUSA, Chipata, Zambia
Sam Simute	Forester, CBNRM – CLUSA, Chipata, Zambia
Cecilia Polansky	Inventory and Map Officer, CBNRM – CLUSA, Chipata, Zambia
Anxious Masuka	Researcher, Kutsaga Research, Zimbabwe
Jim le Fleur	ZATAC, Lusaka, Zambia
Mr. Mwanza	Deputy Provincial Forestry Officer, Eastern Province, Chipata, Zambia
Mr. Mlaviwa	District Environmental Officer, Machinga.
Alexandra Schombourg	Food Processing Technician, Magomero Centre for Development

ANNEX 2: INFORMATION AND ADDRESSES OF RELEVANT INITIATIVES

SANProTA

“For a number of reasons, any serious investments into the development of natural resource-based production systems will need to adopt a regional approach. Because of the nature of the Southern African eco-zones, very few NPs would be found in only one country. Production and marketing synergies would be more likely with the economies of scale achieved through a regional scope and perspective. Similarly, with practical collaboration, the advantages gained in one country would be transferable to another and producers would not be competing with each other across borders” (SANProTa discussion document).

This rationale is the basis for the formation of this new association. Membership consists of NGOs within the countries of Malawi, Zambia, Zimbabwe, Namibia and Botswana who are working with the development and promotion of community-based natural product enterprises. The association will aim to assist in the following fields:

- Networking
- Product research and development
- Marketing

The association is not yet mature enough to have developed an office and legal entity of its own and is currently working within the umbrella of SAFIRE.

Contact: safire@internet.co.zw

MIOMBO FORUM

The objective of the Miombo Forum is to empower peoples to manage their woodlands responsibly through provision of information, expertise and finance. The Miombo Forum is a non trading, not for profit initiative which believes that community based forest management is the best approach to forestry in the miombo region and that the success of this approach depends upon genuine local consent and control.

The Miombo Forum intends to:

- develop and continually improve policies and practices which reflect the felt needs and concerns of miombo peoples
- Harness modern technology to collect and disseminate information which is relevant and useful to miombo peoples
- Establish a register of experts in all aspects of miombo forestry
- Establish a network involving miombo peoples, experts in miombo forestry, business interests in miombo, developmental, environmental and funding agencies.

Contact: Miombo@bigfoot.com

TRAINING FOR ENTERPRISE AND EXPORT FOR MALAWI (TEEM)

TEEM is a purely Malawi initiative being funded by DFID and implemented by Traidcraft initially for a period of five years. Its objective is to assist local businesses to develop their capacity in order they may expand, become more established and

also to enter the export market.

Contact: Murdoch Gatwood
Traidcraft@sndp.org.mw

FALL BROOKS CENTER

“The Fall Brooks Center was founded in 1990 and is evolving as a place where theory and practise, local and international can come together and build a sustainable future”

The Center is working on a dynamic program (one of many) to make certification more accessible to harvesters of non-timber and agroforestry products. This international program is focused on three complementary areas of activity including:

- Assisting certification organisations to work together to make their systems more accessible.
- Providing information and resources to producers and harvesters about certification and helping them to move toward certifying their harvest; and
- Making links in the marketplace for certified products through public education and research.

Contact: Pat Mallet pmallet@web.net

SOIL ASSOCIATION

The Soil Association is a UK based environmental charity founded in 1946. The Soil Association was created to “research, develop and promote sustainable relationships between the soil, plants, animals, people and the biosphere, while protecting and enhancing the environment. Since its foundation the Soil Association has pioneered practical solutions to promote sustainable use of land and natural resources.

Woodmark is the name of the Soil Associations international forestry and chain of custody certification scheme. FSC-accredited since 1996, the SA has issued more than 60 forest management and chain of custody certificates, and certified over two million hectares of forests worldwide.

The Soil Association also provides for Organic Certification.

Contact: Kevin Jones: kjones@soilassociation.org

BIOTRADE INITIATIVE

The BIOTRADE initiative was launched in 1996 with the objective of stimulating trade and investment in biological resources to further sustainable development, in line with the objectives of the Convention on Biological Diversity. These are the conservation of biological diversity; sustainable use of its components; and fair and equitable sharing of the benefits arising from the utilisation of genetic resources’

The BI seeks to enhance the capability of developing countries to produce value-added products and services from biodiversity for both domestic and international markets. It is an integrated programme consisting of three complementary components: country programmes; market and policy analyses; and Internet services

Contact: www.biotrade.org

FINE

FINE is a network of organisations promoting fair trade in Europe. The organisations are as follows:

Fairtrade Labelling Organisation (FLO International)
International Federation for Alternative Trade (IFAT)
Network of European World Shops (NEWS)
European Fair Trade Association (EFTA)

Each of these organisations are also umbrella bodies representing traders and producers in fairtrade. The FLO for example is an organisation of 17 national labelling organisations and an independent certification body which sets Fair Trade standards and monitors producer and trader compliance with Fair Trade criteria. Currently FLO labels 7 products, produced in 30 countries of the South. The Fair Trade label is the international guarantee that producers and traders of a given product have met the standards of Fair Trade. Regular companies or alternative trading organisations can use the label. The estimated retail value of Fair Trade labelled products is in excess of 200 million Euro per year.

Another organisation that is a member of IFAT and EFTA is Traidcraft Exchange.

Contact: For more information about FINE, or Traidcraft contact:

comms@traidcraft.co.uk

BEES FOR DEVELOPMENT

This is a UK-based NGO dedicated to providing advice and support in the field of beekeeping in developing countries.

Contact: Dr. Nicola Bradbear, Troy, Monmouth, NP5 4AB, UK.

Email: busy@planbee.org.uk

HORTICULTURE DEVELOPMENT ORGANISATION OF MALAWI

Also known as HODOM this organisation was formed in 2000 to provide a service to its growers. It is a membership organisation and aims to provide – amongst others services – the following:

- Provide information services to growers in respect to domestic and foreign markets; input sources and prices, policy and relevant regulations which have an impact on production and marketing;
- Organise participation in national and international horticultural fairs and other relevant trade fairs,
- Search for domestic and international markets for horticultural produce,
- Lobby GoM to improve framework conditions such as infrastructures, waiving of import duties for horticultural materials and taxes and incentives for the development of the sector.

Contact: c/o GTZ – PH, P.O.Box 31131, Lilongwe 3, Tel/ Fax: 780413
e-mail: cheetah@malawi.net

ANNEX 3: PRODUCT PROFILES AND DETAILED INFORMATION

3.1 CURIO MAKING

THE CURIO INDUSTRY IN MALAWI

The wood carving industry in Malawi is well established and dates back probably to the 1920s although in the 1960s it was relatively undeveloped still. The chief's chair, which has attained a strong Malawian identity, emerged only in the late 1970s and is not a traditional Malawian design. The industry received some interest from the Malawi Export and Promotion Council (MEPC) in the 1980s and some research was done which revealed that curios were exported in small quantities to just two destinations, South Africa and USA. At the same time almost no mention was made of the status and management of the raw material. Today woodcarvers are found all over Malawi especially in those places visited by tourists. The woodcarvers are scattered and unorganised so it is difficult to get an accurate picture of the number of people involved but rough estimates put the figure at, at least 5000. Those involved tend to work more or less as individuals (some small groupings do exist) and although the need for an association has been recognised and recommended by the SEDOM and MEPC no such organisation has been formed – maybe because the benefits of such an association are not immediately obvious to the woodcarvers.

The carvers use a wide range of different species although some species are preferred over others. Woodcarvers tend to maintain their supply of raw material through travelling further to find it, buying from traders or moving their location of work altogether to resource rich sites. Management of the resource base to maintain a continuous flow has never been attempted except possibly by Mua Mission where tree planting has been undertaken.

A significant quantity of woodcarvings is sold locally within Malawi to residents and tourists. Traders also buy in order to sell within Malawi or for export. Woodcarvers reported that sales vary widely and are totally dependent on tourist arrivals and occasional visit by foreign buyers. Periods with no sales are not uncommon. A significant quantity of the products sold within the country is eventually exported.

Table 8: Export of curios from Malawi 1995-98

Importing country	Value in MWK			
	1995	1996	1997	1998
United Kingdom	88,850	90,121	7,000	217,729
South Africa	7,250	31,783	103,600	258,821
USA		51,719	71,500	47,455

(Source: Extracted from Table 8 of the Traffic Report 2000)

These figures probably do not include some of the informal exporting undertaken by small-time traders who take curios to South Africa, Swaziland and Zimbabwe.

CURIO MAKING IN MACHINGA AND LIWONDE

Curio making is a high profile activity in the Liwonde area with significant roadside markets at the Chingale turnoff and less so at the Mangochi turnoff in Liwonde itself. At the Chingale turnoff the industry has been growing to its current size since

the late 1970s when the chief's chair first appeared as a saleable design. Currently there are probably up to 30 "shops" at the Chingale turnoff roadside each involving between 7 to 13 carvers/traders each. The operators may be simply traders who buy from other carvers who are living in the villages or they may be carvers and traders. Some of the latter may source their own trees in the forest, do the rough carving in the forest then bring the unfinished chair to the stall where they finish and sell. The roadside operations may involve up to 300 individuals whilst there maybe a further 100 carvers in the villages in the target area supplying the roadside and other markets. The chief's chair is the most common item for sale at the Chingale site. The traders claim that this is the most sought after item. It would appear that this site has indeed "captured" the market for chief's chairs and if anyone wants one, they come here to find them – and this includes the traders who then sell the chairs elsewhere such as Blantyre and Lilongwe. The carvers and traders at the roadside say other items do not sell well. Interestingly it was revealed that chief's chairs are a relatively "easy" to carve as it is only two dimensional as opposed to three. The three-dimensional carving for sale at the roadside did not appear to be very good quality. A chair may sell at between MK 1000 to MK 2500 depending on the size and the buyer. Traders tend to pay less than roadside tourists. At any one time each operator may have only one or two chairs for sale in the shops and they may sell between none and ten each month. The number of chairs that can be made from one tree also varies greatly with the size and shape of the tree and the quality of the timber. The number may vary from one to six although in the case of six some will be small. It is true to say however that the chief chair is very wasteful of wood. The volume of wood that is removed to make the chair back is simply wasted (i.e. a person sits in the place of wood which has been removed and thrown away). A tree of approximately DBH 45 cm might provide six chairs and keep a carver occupied for a month. A carver who makes smaller 3D carving could use the same tree for 8 months or a year and possibly make five times as much money if not more. Some of this information was provided by an "artist" carver living near Liwonde who was very scornful of the chief's chair saying it is not art and they waste valuable wood resources which others could put to better use. This carver had his work exhibited in an Africa Culture Art exhibition in France and he had been named as one of Malawi's carver artists in a certain publication. He was semi-retired now due to lack of customers. Some of the carvers reported that sales have been lower recently but whether this was due to fewer customers or more people entering the business was difficult to say (or the fact that everyone has already bought a chief's chair and does not need another one). The industry is entirely male and mainly young to middle aged. Indications are that most of the carvers at the Chingale roadside are locals.

According to the carvers they are sourcing wood from Kambende, Naungu, Chinseu, Chinsale and Mlewe, probably not more than 10km from the Chingale site and mainly within the forest reserves. The species used include: *Pericopsis angolensis*, *Burkea africana*, *Newtonia buchananii*, *Terminalia sericea* amongst others.

They sell between 75% to 90% of their products to other traders who sell in RSA, Swaziland and Malawi cities whilst the rest are sold to passing tourists. On the subject of the future of the resource base the various comments showed that the carvers realised that trees were likely to be scarce and that conservation was "in theory" a good idea but as to how it could be achieved they had little idea. There was also an undercurrent of assumption that trees would still be found but that they would be far away. One commented, "I have never seen a natural tree conserved by man". Trees are largely sourced without a license and without payment.

In Liwonde traders sell products that are lathed at Dziwe (3-4 km from Liwonde) using woods such as *Colophospermum mopane*, (tsanya), *Dalbergia*

melaxonylon (phingo) and *Combretum collinum* (nkolong'onjo). They sell to passers by and the market appears to be small. Interestingly the Chingale market and the Liwonde market are quite different using different woods and making different items. There are no lathed items at the Chingale site.

Two village-based curio-makers were interviewed in the villages of Chisanje and Makuganya. The former comprised a group of curio makers who made a variety of 3D items and chief's chairs from whatever trees they could easily source. One source of timber was old Phingo stumps that they found and dug out of people fields for about MK 40 per stump. He also uses *Pericopsis angolensis* (mwanga) and *Combretum collinum* (nkolong'onjo). They produced unfinished items that traders would come and buy, finish and sell in Zomba and Blantyre. They sometimes used the pieces of wood left over from others who made chiefs chairs. They had little idea how much the traders sold the subsequent items for and did not seem to care.

The other group made only chiefs chairs (did not know how to make anything else) for the Chingale turnoff markets and the Kuchawe market. Traders would come and buy the unfinished items but they could not predict sales. They said they sold a medium sized unfinished chair for about MK 150. This group said that outsiders could not come into their area to look for trees, as they would chase them away. These carvers sometimes collaborated with other carvers who would use the left over pieces. Both groups understood and welcomed the idea of co-management if it meant they could have some control over the resource base. They used *Pericopsis angolensis* and *Burkea africana* (nkalati)

In summary the good things are: From the point of view of income generation and equity the industry is very successful. Many people are earning a reasonable amount of money and they are locals and not outsiders. It is relatively easy to enter the market. The chief's chair is cheap and cheerful and has mass appeal. It is a good product that attracts customers because it is quite unique, people think it is traditional and it can fold up for easy transport (easy to carry on a plane as hand luggage). The chief's chairs is also good for the forest because the larger trees are taken leaving the smaller one to grow on. The curio makers use less wood than the timber sawyers and the charcoal makers so from an ecological point of view why should they be targeted? Producing more artistic pieces requiring more skill may not be such a win-win strategy as wood-for-wood more money might be earned but at a much slower rate (good for the trees) and for far fewer people (bad for the people).

The bad things are: There is absolutely no thought being given to the future of the resource base which has been badly over-exploited – the carvers are turning to other species which is good for diversity but an indication that the preferred species are simply gone. Species such as *Brachystegia bussei* and *Uapaca kirkiana* are now being used. Sales appear to be down which might be because the timbers now used are not the preferred ones or it might indicate that the market has been saturated with chiefs chairs. The chiefs chair is wasteful of wood and without a good marketing strategy the return for the utilisation of large (almost irreplaceable) hardwoods is simply too low. One wonders if the tree would not have been better utilised as timber and processed into quality furniture for a different market altogether.

What next:

The curio makers - although not formally organised – do represent a formidable group if opposed, as the FD have found to their cost. Any interventions to transform their activities into sustainable utilisation can only be achieved with their commitment and interest – they are unlikely to participate in any activity which will reduce their take home money. The most obvious solution which is to undertake an inventory of the suitable trees (size and species) and design a cutting plan which makes

some attempt at sustaining the resource base will probably involve a reduction in yearly tree cut. This could be offset if investment were made into:

- Reducing the wastage of wood which in turn would involve
- Diversifying the design based on a market survey
- And finally increasing the quality, which is more difficult, because this in part depends on some inherent abilities within the individual carvers. It also depends on using “perfect” pieces of wood, easy for a spoon but difficult for a chief’s chair.

The improvements would have to coincide very closely with introduction of sustainable off-take or the carvers would be very upset. Finally the issue of who would manage the resource base is the next question – the forest adjacent communities could manage and sell the trees to the curio makers or the curio makers might set up an association and do the job themselves (via paid employees?). The FD may continue to do the job but should ensure that the right license is paid and ideally the money could be deposited into a local fund that can be used directly for management.

Certifying the wood with FSC thereby enabling premium prices in some markets would involve totally changing the target markets and marketing mechanisms and may not be worth it.

Monetary value

Very rough guess:

300 people might make MK 1000 per month x 12 months = MK 3,600,000 or

300 people might make MK 500 per month x 12 months = MK 1,800,000

150 people might make MK 800 per month x 12 months = 1,440,000

This is income not profit as they have to use some of the money to buy the chairs from other carvers. Even the lowest estimate represents a large amount of money. When the monetary value of the industry is high the “power” of the participants is correspondingly high. The curio makers represent a significant force to be reckoned with which makes them fearful enemies but also potentially active and energetic activists in co-management if the appropriate mechanisms can be designed.

3.2 BAMBOO FURNITURE (“SOPHISTICATED”¹⁴)

There are two women’s groups making bamboo furniture in the target area, both have been assisted by ADB – WID project being implemented by the Ministry of Women, Children and Community Services. The two groups are Tithokoze beside the main road a few kilometres before Liwonde and Kankande Womens Group near Ntira. Both have similar histories of starting the group doing something else and then eventually getting training and a loan to go into the bamboo and cane furniture making business in 1997/8. Each group started with 10 women although some have dropped out. The loans have now been paid back. They reported that learning to make the furniture was difficult at first but now they are accustomed. Bamboo is sourced from Liwonde FR and they pay the FD depending on the quantity and size, one piece may be MK 2.5. The cane, *Cocculus hirsutus* – local name Nangoneka - is collected from customary land and is free although some women reported that if they are busy they will pay other people to collect it for them. The other materials required are varnish, glue and nails, which the women complain are “very expensive”. All products are sold from their roadside workshop with the Liwonde roadside being

¹⁴ The term sophisticated is to differentiate this method from some of the local work which could otherwise be described as simple or basic.

more lucrative than the Ndaje roadside. They said they had received some advice on how to market their products further a field but they said that none of the solutions were practical or profitable. For example travelling to Zomba to sell items is not a good strategy as without any shop in Zomba they must sell any item on the same day or they must bring it back. The customers know this and offer low prices. The women seem quite optimistic about their businesses and seem proud of their skills and achievements. Their main worry is lack of regular customers.

Concerning the bamboo resource it is unlikely that current off-take is threatening. The money they pay does not of course stay within the locality but goes to Treasury. It is interesting to note that they resent paying for the bamboo but somehow accept that they must of course buy nails, varnish and glue whatever the price. This is an indication once more that people “expect” natural resources to be free.

The groups receive regular training inputs to expand their designs and skills, which is excellent. Diversity and quality are the keys to their success coupled with improved marketing mechanisms. The quality still needs improvement. One group expressed fears that if other people adopted the same activity the competition would be damaging to them – rightly predicting that the market for these items – via roadside sales is quickly saturated.

3.3 WILD FOREST MUSHROOMS

During this research it was learned that considerable interest in putting the wild mushrooms resources of Malawi to “better” use has been growing for many years and expressed by a number of people – including commercial companies. Various informants revealed that commercial drying operations had already been attempted in Perekezi and Dzalanyama.

Research

The Forestry Research Institute of Malawi is currently undertaking a research project on Miombo Wild Edible Fungi in partnership with CABI bioscience. The project is looking at the productive potential of wild edible fungi. This involves looking at yields from different miombo areas, examining the influences of woodland management and includes a broader appraisal of how the edible fungi are used and sold. A workshop was held in July 2000 that summed up the progress of the research to date and also summarised information concerning WEF from other countries in the region, some of that information is presented here.

Wild Mushrooms - in the region

The productivity of mushrooms from the miombo woodlands within the region are not known as most estimates are based on amounts collected and sold and there is undoubtedly a large disparity between forest productivity and actual amounts gathered. It is estimated that the benefits to harvesters and traders of wild mushrooms in Zimbabwe was about US\$ 125,000. The commercialisation of WEF has been identified by several organisations as one option to spur communities to better manage the forests and to contribute to their economic development e.g. The Luangwa Valley conservation project in Zambia and the Ford Foundation in Manica Province in Mozambique.

The main limitation to commercialisation is the perishability of the product, which is why preservation through drying is the key to development of this product. The demand for fresh mushrooms is difficult to meet due to distance and poor roads between production areas and the markets. Compared to Mozambique where

donor agencies have actively assisted communities to collect and market wild edible fungi, the commercialisation of the industry in Zimbabwe has been entirely through local entrepreneurs. A look at the private sector in Zimbabwe gives us some indication of the potential for WEF to form the basis for a viable commercial activity. For example Colica Investments commenced operations in pine forests in the mid to late 1980s, exporting *Boletus edulis* to Italy. Other companies soon followed suit to reach an annual collection of 100 tons. In 1999, 3 companies in Zimbabwe exported fresh *Cantharellus* possibly total export of 10 tons fresh and 1.5 t dry (may represent perhaps more a further 6 ton fresh weight)

Key areas to be addressed

Tenurial security and equity issues must be clear to enable commercialisation to benefit the current mushrooms collectors i.e. mainly poor rural women.

Sustainability under conditions of increased collection and how to best manage the woodlands e.g. impact of fire

The FRIM / CABI research project

The research project has made some progress in the following areas:

Marketing: who collects them, which are eaten, preserved or sold and where are they sold. Other areas investigated included the income generated from sales and market chain involved.

Table 9. Total weight and maximum income from major edible fungi: Liwonde

Fungus	Total weight (kg)	Income in MKW
Chipatwe	193	3565
Chipatwe (black)	135	2680
Chipatwe (yellow)	476	9460
Kungulokwetiti	948	17590
Usinda	183	3145
Utenga	1024	19560
Others	297	6125
TOTAL	3256	MKW 62 150 [US\$ 1130] (MK55=US1)

The figures indicated only include the assessments made on 37 days within the period 17 January – 15 March. This may present perhaps only 50 % of the total mushrooms season and potential amounts sold.

Productivity data was also collected from sample plots providing information such as type of fungi, number of each type, weight, nearest tree species and major species in each plot.

Mushroom information from local respondents in Machinga

Almost all respondents said that mushrooms were a valuable forest resource and those near the M1 sold them in large numbers. More are sold than eaten and some are dried (dried are also sold). Dried mushrooms could remain in the household up until October as one informant demonstrated.

One group of women from Wilson Village provided the following information about mushroom selling. They said one problem is that they have to sell before the end of the day or else they rot. They will dry excess mushrooms for their own use. Collecting mushrooms can be time consuming and some women spend 5 hours in a day looking for the mushrooms. They collect and sell the same day. These days many people go searching for mushrooms so this makes them harder to find. The women knew that certain species are found in certain locations, e.g. near

rocks, in the open, near certain tree species. The women recognised that if the woodland is under threat then so is the mushrooms supply but they can do nothing about people cutting trees or there will be recriminations. People are just looking for money. That is all. Selling mushrooms in town was considered an option but the extra profit they receive selling at town prices did not compensate for the bus fare¹⁵. The women did not think people would buy dried mushrooms (the type they dry at the moment) in supermarkets – but they considered it an interesting idea and would be willing to find out. Off hand the women named twelve species that they collected and sold.

On the subject of tree felling, people said it was just a matter of getting money and said that if money could come from somewhere else then this would help. On the subject of co-management the women thought it was a good idea but it was a matter for the FD and the VH (some women got up and walked away at this point). They could not of course do anything without being paid however. The women said fire was bad for mushrooms as the organic matter is destroyed. They said it was the FD who set the fires.

Another group of women from Mpenda Village gave similar information. They also said there is a group of mushrooms called Ikoko, which cannot be eaten fresh and must be dried. One such species is Nakasuku. (Local people boil mushrooms before drying, whether it is the boiling or the drying which renders the mushrooms edible is not known but could be important).

Villages further away from the road said mushrooms are not finished each year whilst those near the M1 say the mushrooms are all finished and too many people are looking for them.

The Wild Mushroom Handbook is a valuable source of information.

3.4 HONEY

Beekeeping seems not to be a widely found activity in the Machinga area. Why this should be when beekeeping appears to be a highly traditional activity through the miombo zone is not known. A few beekeepers were identified and they explained that they had been stopped from accessing the bark needed to make the hives and therefore had given up. It is possible that until recently patrolling of FRs was sufficiently effective that this was indeed true. No bark = no hive = no bees. It is not known whether the FD actually discouraged people from keeping their bees in the FRs (for example, if the bark came from customary land and not the reserve) but it would appear that the feeling that the FR belonged to the FD was so strong that this certainly served as a deterrent. As customary land woodland are almost not existent these days it is not surprising that few hives are found there.

Mr. Omad from Naungu village is a traditional beekeeper. These days he is afraid of taking bark for hives and he “keeps” bees in rocks. He knows how to attract the bees to certain places and he knows he can go and collect honey whenever he wants from various locations. He has no sons and has not taught anyone his knowledge about bees and beekeeping. He consumes the honey himself or sells to his neighbours.

Another local beekeeper from Mbalagwe village was also interviewed. He has eight beehives all made out of old tins or buckets. No one taught him how to keep bees

¹⁵ See forthcoming report on local mushroom trade by the same author (WEF research project)

although he only started in the last few years. He just thought it would be a good idea. He puts them in the FR but he did not ask permission and sees that there is no problem. He is not afraid of thieves as the hives are high in the trees and people are afraid of bees. He has had no training and has no modern equipment of any sort. He says he can harvest honey three-times a year, he sells locally and uses some at home. He sells one bottle for about MK 120 (1 litre). He is intending to put more hives in the forest when he can manage.

Several other informants said other people had beehives, some on customary land. The activity was being undertaken on a very small scale and when the author tried to find some honey to buy she failed up until this time.

Elsewhere in Malawi

As indicated in Section 1 elsewhere in Malawi beekeeping is being practiced on a significant scale. Nevertheless imported honey can be found for sale in several supermarkets alongside Tambala and Nali honey that is sourced and bottled within Malawi. Small-scale locally produced, processed and bottled honey is found in the Wildlife Society Shop in Limbe from Mwanza and some of the honey produced from Nyika is locally processed and found for sale in PTC in Mzuzu and elsewhere. Much of the honey used for industrial purposes in Malawi is imported.

3.5 FRUIT

On the subject of fruits from the forest many species were mentioned (*Strychnos spinosa*, *Ximenia caffra*, *Azanza garckeana*) although by far the most oft mentioned was *Uapaca Kirkiana* (masuku). No one gave any information about preservation or processing although some people sell fresh masuku in the season. Those who live near the roadside or market places will travel into the forest to find the fruits rather than those who live near the trees travelling to the market place or roadside.

Whilst discussing fruits and options for income generation one women correctly pointed out why talk about forest fruits when there are so many mangoes. Many are wasted, even though a lot are sold. One lady explained how she sliced mangoes, dried them in the sun then fries them together with onions and tomatoes. She then stores the preserve in a jar and adds it to relish later in the year. She has been doing this for years but she is the only one.

Uapaca kirkiana are now being chosen as a curio timber.

In Lulunga some women explained that they used mango to make a sort of juice or porridge called wobiya. It is eaten the same day.

Most of the research was done near the reserves but it was observed that there are many *Ziziphus mauritiana* (masau) and *Adansonia digitata* (baobab) trees lower down between the hills and the Shire river.

Markets

In a very mini-market survey of 17 respondents at Liwonde PTC the following was learnt:

Question	Answer
Are you interested in buying dried local fruits	10 said YES
Does local jam interest you (Masuku, masau, mango) – as opposed to imported or don't care	9 out of 12 would like to buy local jam (rest never buy)
Would you like to buy dried mushrooms	12 said YES
Those who already buy honey were asked whether they care where the honey comes from or if they would like to buy local	7 out of 10 would prefer to buy local honey (some who never buy did not answer this question)
Do you buy honey, if not why not	10 said they do not buy honey because it is not available (rest said too expensive, don't like it or do buy)

Whilst this was a very mini-survey and cannot form the basis of a product development investment the response overall was positive. This survey was deliberately done in a small PTC to get a good picture of how the “average” Malawian might respond.

ICRAF has been doing some research on domestication of indigenous fruits trees and also has started looking at processing.

3.6 LOCAL PRODUCE FOR LOCAL MARKETS

Chiwale furniture (*Raphia farinifera*)

The Chiwale operation near Ndaje involves four people. The main man has been involved for 25 years. Initially it was a good business but with the advent of the Zalewa road customers have become fewer. Other people had interviewed him before asking questions and offering help with marketing etc. but nothing came of it. His main problem is lack of markets. These days the material is hard to find and they have to go far to get it. In Ndaje it is all finished (they finished it) – although there is some regeneration these days. In the past they used to pay the FD but not anymore. A chair may sell for MK 110 and a cupboard for MK 170-110.

Several interviewees mentioned Chiwale. A number of people produce items for local market. Intensive use is confined to a few localised spots (near markets).

Justin Amon (Naungu) finds making Chiwale furniture making useful to get a bit of money. The raw material is in abundance. He discusses collection with the Forest Patrolman. He is the only one in the village and he learnt from Ndaje. No one else wants to learn. He sells locally. He makes chairs, cupboards and tables.

Chigono William from Maluchira Village cuts the chiwale himself (no payment) and makes doors, beds and chairs. There are two people from the same village who do this and they sell to locals only. 6 leaves are used per bed, 12 for a door and 8 for a chair.

Finias Kazembe from Msigailila village also cuts chiwale himself – illegally he said. He sells a bed for MK 100, chair for MK 35, table for MK 70 and a door for MK 100.

He said tradespeople sometimes come and buy his things to sell in town. The chiwale seems to be less than before.

Mr. Makaluka Mbewe from Wilson Village collects fallen branches. He makes beds only and sells them at MK 90 to local people. He understands that to collect fresh leaves he must pay the chief MK 30 per bundle. These days many people fell the leaves and they are becoming scarce. Some people fell the whole stem (whole tree) which is destructive.

Several other informants reported very similar stories. The chiwale furniture makers had been doing this for between 15 and 4 years.

Most people said that conservation would be interesting and useful as they depend on the chiwale for income. They said that someone must come to "organise us". In fact the Greenline Movement did introduce a system of chiwale harvesting control but it would appear that this was implemented through the chiefs and not the chiwale harvesters. As a result the system is little used and having no impact.

Basket chairs

These are made from Nangoneka (the cane) and either bamboo or timber frames. No nails are used. They are cheap and basic.

John White, Pias John and Alick Samson from Liwanga Village make and sell basket chairs from MK 120 each. The material comes from the reserves where they pay MK 2 for a bamboo or from people's gardens where they pay MK 5 per bamboo (not indigenous bamboo?). They also use trees such as Thombozi (*Dalbergia conde?*) and Mpoza (*Anona senegalensis*), so the chairs do not get attacked by insects.

Wisck Akidu from Mliwo village makes and sells basket chairs at MK 120. Materials are obtained from both customary land and forest reserves but he buys (?) from other people who collect the materials. It is a good business and items are sold to passers-by. To control insects one must use the right wood.

From the consultant's experience these basket chairs are easily destroyed by borers unless treated once purchased.

Mats (from *Hyphaena crinita*)

Palm leaf mats and reed mats are popular in most households. Mr. Machelamba Phiri from Mbalagwe Village has been making reed mats for 22 years. He finds the reeds locally and sells the mats locally. Conservation is very necessary as "how else can I make the mats?". Some people burn the reeds to cultivate by the riverside.

Another trader at Mtumbwi buys mats in Ulongwe and sells them at the roadside. He said it was a good business.

Bamboo items (basic)

Bamboo items such as vegetable racks and laundry baskets are made in the locality. They are very crude with a bit of colour. Lyson Size is the only one in Naungu village who makes them and no one wants to learn. He sells direct to customers himself in Liwonde. There is plenty of bamboo in the forest, he buys from the FD patrolmen. MK 30 per bundle. He has been doing this for 12 years. This is a subsistence activity.

Mr. Kassim Tamimu from Mbalagwe Village has been making bamboo baskets (chitundu) for 18 years. He pays the FD for the bamboo at MK 1 per piece. He likes conservation but does not know how to do it.

A basket and chair maker from Mpenda village said he has been making bamboo items for 15 years. He is worried about the bush fires because they burn the bamboo – he would like to put conservation mechanisms in place to prevent this.

Bamboo baskets are made widely. People sometimes pay for the bamboo but if they can get away without paying so much the better.

Local produce – limits and opportunities

These products have been described together as they share some characteristics. Basically the products are low-value and meet the needs of local people. The producers tend to collect the raw material themselves and make the item at home. The activity probably contributes a significant proportion to the income of the people involved. Conservation and management of the resources is just as important for these products as for high value products. There is little scope for adding value to these products as they are. They have limited appeal in a wider market and it would be difficult to develop the subsistence activity into a small enterprise.

Nevertheless many of the materials and fibres used in these local products such as the chiwale, rattan, palm leaf, baobab fibres and reeds could be used to make other products altogether. This would require considerable input into design and skills. The biggest limitation is probably ideas, examples and getting the quality good enough. One natural product expert suggested that the Nangoneka could be exported as raw material as the demand internationally is high.

Ideas: good quality baskets, table mats, string bags, window blinds (reeds)

3.7 UNEXPLORED RESOURCES

The following resources have potential for developing natural resource based enterprises. However given the current scarcity of knowledge and information that is available within Malawi the consultant did not explore these resources in any depth. The category of medicines, oils and pharmaceutical products in particular is one that would merit further studies. The development of products within this category would require a very significant research and development phase contrary to the products highlighted as focal products within this document.

Water

Water is a resource that can be used more effectively than it currently is. One Village Headman had made a small dam and was making another for fish farming. It was quite effective. This area was not explored.

Tourism

There are some rare birds in the Chikala Hills. The miombo woodlands could be used for tourism if some amenities were developed. This subject was not explored.

Medicines, oils and pharmaceutical products

These have not been tackled at all which probably represents missed opportunities as evidence suggest this is where some of the highest value products are found. The costs involved in product development and marketing would be very high but could still be something to think of in the future.

Floricultural

This was not tackled. There are significant quantities of hanging lichen in the miombo woodland that could be used in the floricultural trade. One retailer identified on the Internet was selling the Chiwale palm fruit as an artistic item.

Table 10. Product analysis to identify products and resources on which to focus

Product / Criteria	Link to conservation / Ease of sustainable management <small>16</small>	Product status	Information (product)	Number of people	FD view	Market	Monetary return	Opportunity	Threats
Curios	High / difficult	High	High	Many	Cutting trees (live ones) is illegal. Cannot have a cutting plan under this law	Very good (if better targeted)	High	Diversify FSC?	Difficulty of implementing sustainable cutting plan
Dried mushrooms	Good / not difficult	High potential (not there)	High	Many	OK	Good	High (potential)	International market in dried wild mushrooms unsatisfied	Local market may be difficult
Honey and honey products	High / not difficult	High potential (not much there)	High	Many (potential)	OK	Good	High (potential)	Bee products Organic?	Competition
Bamboo furniture (sophisticated)	Low (single species) / reasonably difficult	High	Medium	Few	OK	Good (if better targeted)	Medium	Diversity Better marketing	Lack of market
Fruit processing (forest fruits)	Reasonable / reasonably difficult	Medium potential	High	Many (potential)	OK	Quite good	Medium	No local competition	Finding the right product

¹⁶ The task of protection from other degrading forces is not included here. Same issue applies to all products except on-farm products

Fruits processing (on-farm fruits)	No link / not difficult	Medium potential	High	Many (potential)	N/a	Quite good	Medium	As above	As above
Chiwale furniture	Low (single species)/ reasonably difficult	Low	Low	Medium	OK	Limited	Low	Would need to think of new products to make with raw materials in order to have a potentially valuable product	
Basket chairs	Low / reasonably difficult (wood)	Low	Low	Medium	OK	Limited	Low		
Mats	Low / not difficult	Low	Low	Many	N/a	Limited	Low		
Bamboo items (basic)	Low / reasonably difficult	Low	Low	Few	OK	Limited	Low		

ANNEX 4: BUSINESS SUPPORT ORGANISATIONS

NEW PROGRAMMES IN THE MICROENTERPRISE PROMOTION SECTOR

Organisation	Key activities	Funder	Amount	Other information
Opportunity International – Usiwa Watha Credit Trust	Village Banking	DfiD	\$ 4.3 m over a 5 year period	Targeting both men and women
PRIDE AFRICA	Village Banking	DfiD	\$ 3.4 m over next 3 years	Targeting 20,000 clients (men and women) in the next three years
FINCA	Village Banking	DfiD	\$ 1.1 m over 4 years	Expanding Central Region operations and opening up a new base in the North
BEED Project	Business Development Services (BDS)	DfiD	DM 3m over 3 years	Investigating into and the development of the BDS market in Malawi
TEEM project (Training in Enterprise and Export, Malawi)	Business Development Services and Trade Facilitation	DfiD	\$ 4.2 m over a 6 year period	3 components: market led business counselling Trade facilitation Trading Company

FINANCIAL AND SUPPORT INSTITUTIONS IN ZOMBA, BALAKA, MANGOCHI, LIWONDE AND MACHINGA

Commercial Bank	Zomba, Balaka and Mangochi
National Bank	Zomba, Mangochi
New Building Society	Zomba, Mangochi
Malawi Savings Bank	Zomba, Balaka and Liwonde
SEDOM	Zomba, Mangochi, Balaka
DEMAT	Mangochi

For a complete list of all organisations supporting microenterprise development in Malawi see the The Microenterprise Directory produced by Kadale Consultants

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Honey – A study of major markets

Handicrafts and cottage industries – A guide to export marketing for developing countries

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Floricultural products – A study of major markets

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