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**NON-WOOD FOREST PRODUCTS IN MALAWI**

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*This paper has been minimally edited for clarity and style*

## **State of NWFP statistics in the country**

Use and trade of non-wood forest products in Malawi is on the increase but quantities traded and used are yet to be documented. Malawi participated in the FAO Seminar on Forestry Statistics in Africa (Malawi 1989), where it was reported that considerable foreign exchange is realized from forest-based tourism and recreation.

### **Non-wood goods and services**

Malawi, like many other third world countries, is faced with a difficult situation where rural poverty and forest degradation are progressing simultaneously, and reinforcing each other (GOM/NEAP 1994). This has led to government and development agencies to search ways for achieving more sustainable utilization of limited natural resources. One of the results of this effort is an attempt to shift from forestry management models based on industrial production and coercive policing of forests, to more people-friendly models. Along these lines, increasing sustainable utilization of non-wood forest products (NWFP) by villagers has been seen as one of the possible means for establishing a positive linkage between rural household welfare and conservation of forests (Deweese and Scherr 1996). Honey, bushmeat, caterpillars, insects, termites are the most important animal-based products, while mushrooms, fruits, fodder, medicinal plants, vegetables and fibres are the most important plant-based products.

#### *Non-wood goods*

As reported previously, the importance of NWFP varies from place to place:

- In Northern Malawi, bushmeat, honey, caterpillars, termites are the most important animal-based products.
- In southern Malawi, termites are the most important NWFP followed by honey, caterpillars and plant-based NWFP.
- In central Malawi, mushrooms and fruits are documented to be the most important NWFP followed by various NWFP (Nyirenda 1993).

### **Honey**

In Malawi, some 8,000 beekeepers produce 1,000 t and 150 t of honey and beeswax per annum respectively. This quantity corresponds to the capacity of the local industry (Anonymous 1978). 80% of the honey consumed and 95% of beeswax marketed within the country is imported (Brigham *et al* 1996). However, due to the existing demand of these products, efforts are underway to involve more people into honey production. A number of beekeeping clubs have been formed in Mzuzu, Chimaliro and Blantyre. Several beehives have been placed in woodlands of these areas. It is estimated that a single beehive can produce 20 –30 kilograms of honey if climatic conditions are favourable. Taoloka beekeeping club, for example, sells its honey to the Beekeeping Association of Malawi, which processes, packs and sells the honey to main chain stores such as the People Trading Centre (PTC) within the country (personal communication).

Increased productivity of honey can be achieved only if improved methods are used. Gachele Simons studying on the utilization and marketing of non-timber forest products (NTFPs) in 1977 reported that the honey yield depends upon the size of hives used. The small sizes of beehives currently used by local communities are responsible for low production of honey. He further explained that small hives are more commonly used because big trees from which to curve hives are no more because of deforestation. Replacing the traditional production technologies with modern ones would help to increase honey production.

Charcoal burning is one of the causes of deforestation in Malawi. Honey production also depends upon the availability of certain tree species that are associated with bees. Increasing bee forage species would definitely boost honey production in Malawi. Currently modern beehives are being introduced in various places for people to go into beekeeping activities. This would help to provide income to locals. Forest cover would be promoted, as the scale of charcoal burning is likely to decline and in the long run, honey production is likely to increase in Malawi.

## **Termites**

Higher termite species (*Macrotermes*) provide a useful protein in Malawi. At the onset of the rainy season, alates (Locally known as Ngumbi or Inswa) are trapped in their dispersal flight and are processed and eaten as relish or snacks. During this time of the year a lot of local Ngumbi occurs. However, quantities consumed or traded are yet to be determined. Termites are obtained from natural forests (F), plantations (P) and other areas (O).

## **Bushmeat**

This is an important source of food more especially in areas close to natural forests. People in Northern Malawi, where considerable area of forest exists, do a lot of hunting. However, bushmeat is becoming scarcer due to over hunting. Efforts are underway trying to domesticate wild birds such as guinea fowls. They are good business and a bird can fetch as high as MK200 (US\$4.5 - 5 approximately). Animals are mostly obtained from natural forests.

## **Caterpillars**

A total of 14 species of edible caterpillars have been reported in Kasungu district (Clarke *et al* 1996). Approximately 170 people participated in the legal harvest of caterpillars during the 1991 season gathering close to 1.85 kg which were sold for 2 to 7 US\$ per kg. Each person earned nearly 50 US\$ from the sale of caterpillars (Cunningham 1997).

## **Medicinal plants**

The predominant medical system in use in Malawi is that of traditional medicine, especially in rural areas (Maliwichi 1997). Limitations to government health services, such as drug shortages and an insufficient number of hospitals, as well as unfavourable Western doctor to patient ratio of 1:50,000, have contributed to the reliance on traditional medicine. A variety of medicinal plants are used in traditional medicine. Clarke *et al* (1996) describe the work of traditional birth attendants who offer medicinal plants to women for contraceptives, barrenness as well as for childbirth. The government is reported to recognize the contribution of traditional

medicinal practitioners to the nation's healthcare and the benefits of collaboration between the modern and traditional medical communities (Hauya 1997). Some traditional medicine associations exist, the largest of which is the Herbalists' Association of Malawi with about 2000 members (Maliwichi 1997). Most of these plants are traded locally. However, Maliwichi (1997) observed that exports of *Jateorhiza bukobensis* do occur, particularly to neighbouring countries such as Zambia, Zimbabwe, Mozambique and South Africa. A total of 44 plant species were observed at Limbe Market in Blantyre being packaged for a South African client (Maliwichi 1997). Cunningham (1997) documents the ecological impact of medicinal plant utilization. He notes that:

- supply of *Pterocarpus angolensis* is affected by competing uses such as timber logging, and;
- local over-exploitation of *Dioscorea sylvatica*, *Cassia* spp., *Erythrophleum suaveolens* and *Erythrina abyssinica* is an emerging problem.

According to Mwanyambo L. and Nihero D. 1988, reporting through Medicinal Plants and Biodiversity (Malawi) Project funded by IDRC, several conservation strategies of medicinal plants were recommended:-

1. Individual as well as communal medicinal home gardens be created and also be trained in propagation methods.
2. Efforts should be made in protecting and managing areas of greater conservation value, which contain important medicinal plants that are used to treat diseases that are of paramount concern.
3. Forestry Research Institute of Malawi should establish propagation trials of the priority medicinal plant species.
4. Indigenous knowledge system on non-destructive methods of collecting medicinal plants should be further explored.

## Edible plants

Indigenous fruits of the miombo (*Uapaca kirkiana*, *Parinari curatellifolia*, *Strychnos cocculoides*, *Flacourtia indica*) are an important source of food for many rural communities in Malawi. Fruits have long been used to complement or supplement diets. They contain vital nutrients and essential vitamins, which are important especially for growing children, who are often prone to malnutrition and related diseases. Nutritional studies have shown that *Parinari curatellifolia*, *Strychnos cocculoides* and *Azanza garkeana* contain more than 30% fat and about 45% crude fibre and total carbohydrates, while *Trichilia emetica* and *Annona senegalensis* are important sources of protein (Saka and Msonthi 1994). Indigenous fruit trees of the miombo are also used to generate income (both in cash and barter) through the sale of fruits and fruit products (Maghembe and Seyani 1991; Clarke *et al* 1996). *Uapaca kirkiana* makes good wine. Wildlife Society of Malawi (WSM) is implementing a project called sustainable management of indigenous forests (SADC/FSTCU-GTZ Project) in Mwanza east. It is a community-based project. Through this initiative, some local communities are enjoying the benefits from sales of juices to P.T.Cs made from *Tamarindus indica* and *Adansonia digitata* fruits. Most of these fruit trees are found only in natural stands (Ngulube 1993) and are threatened by deforestation. Currently, efforts are underway to domesticate the most preferred indigenous fruit tree species. The table below presents the top 10 priority species in Malawi.

Rank	Species name	Count*
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1	<i>Uapaca kirkiana</i>	99
2	<i>Parinari curatellifolia</i>	70
3	<i>Strychnos cocculoides</i>	41
4	<i>Flacourtia indica</i>	37
5	<i>Azanza garkeana</i>	26
6	<i>Annona senegalensis</i>	24
7	<i>Vangueria infausta</i>	24
8	<i>Syzygium owariense</i>	17
9	<i>Adansonia digitata</i>	15
10	<i>Ficus sycomorus</i>	14

\*The number of households out of the 128 sampled that included the species as one of their top 10.  
Source: Malembo *et al* 1998.

Mushrooms in general have always been known to provide supplementary food, especially during the rainy season (Chipompha 1985). Clark (op.cit.) documented the utilization of 60 species of edible mushrooms, which are widely sold along roadsides during the rainy season, particularly by women and children. Most of these wild edible mushrooms grow on dead wood and leaf litter normally found in indigenous woodlands. However, the indigenous forests are declining due to deforestation and as a result yield of mushrooms obtained from the woodlands is also declining. There have been efforts to cultivate wild edible mushrooms at FRIM, Bvumbwe and Chancellor College in Zomba in order to increase productivity but with no success. However, renewed efforts are underway to conduct ethnobotanical surveys, and study the ecology and socio-economics of indigenous edible mushrooms in Machinga, Blantyre, Mulanje and Zomba through a project called Domestication of Wild Edible Mushrooms funded by DFID through NRI.

A wide range of indigenous vegetables is available in Malawi (Kwapata 1991; Williamson 1974). Many of these vegetables are rich in vitamins, essential minerals and oils. Young tender leaves of certain trees such as *Adansonia digitata* and *Azanza quanzensis* are cooked and used as relish (Mauambeta 1998).

## Fodder

In Malawi, land pressure for cultivation is marginalizing livestock (cattle, goats and sheep) forage resources with the result that forested areas are being increasingly utilized to provide adequate food for livestock. Clark *et al* (1996) and Abbot and Lowore (1995) have documented the most important fodder species used in Malawi. Other species are found on farms such as *Faldhebia albida*.

**Table 1: Preferred graze and browse species collected from a woodland transect walk and the seasonal occurrence. Ranked by palatability for cattle as assessed by 6 herders at Chimaliro Study Site.**

<i>Species</i>	<b>Rank 1= best 5= poorest</b>	<b>Preferred Eating Season</b>	<b>Parts eaten (above ground)</b>
<i>Beckeropsis uniseta</i>	1	Nov. to April	All
<i>Cynodon dactylon</i>	1	Throughout the year	All
<i>Eriosema ellipticum</i>	1	Nov. to March	Leaves
<i>Vernonia adoensis</i>	1	Nov. to March	Leaves
<i>Bauhinia thonningii</i>	2	Jul. to Nov.	Fruits only
<i>Dichrostachys cinerea</i>	2	Jul. to Nov.	Fruits only
<i>Droogmansia pterpus</i>	2	Sept. to March	Leaves
<i>Mucuna stans</i>	2	Sept. to March	Leaves
<i>Cussonia arborea</i>	3	Sept. to March	Leaves
<i>Hyparrhenia filipendula</i>	3	Nov. to April	Fruits
<i>Julbernardia paniculata</i>	3	Sept. to Nov.	All
<i>Ficus sycomorus</i>	3	Oct. to Nov.	Juvenile leaves
<i>Phragmites mauritianus</i>	3	Nov. to April	All
<i>Pseudolachnostylis maprouneifolia</i>	3	Sept. to March	Leaves
<i>Steganotaenia araliacea</i>	3	Sept. to March	Leaves and fruits
<i>Strychnos spinosa</i>	4	Sept. to March	Cattle eat fallen leaves and goats intact leaves
<i>Ectadiopsis oblongifolia</i>	5	Throughout the year	Leaves
<i>Zanha africana</i>	5	Sept. to March	Leaves

Source: Abbot and Lowore, 1995.

## Thatching grass

Traditional houses, animal huts and tobacco sheds are thatched using grass. Thatch may be obtained from the forest reserves. Most of the thatch, however, is obtained from fallow and estate land (Lowore 1993). The most favoured is the *Hyparrhenia rufa* (Williamson 1975). Grass is an important seasonal source of income, especially among the poorest sectors of the community. Headloads (Abbot 1996) of thatch grass are sold between villagers and at times collected communally by a clan to assist those who are re-roofing or building new houses.

### *Non-wood services*

Livestock grazing has been going on in some of the forest reserves in Malawi. Chimaliro was one of the Forest Reserves where controlled grazing was permitted. Local communities were allowed to graze after paying a license of MK1.00 per head per annum. Grazing in the reserve was allowed between November and June. Dzalanyama Forest Reserve was/is used by the government for grazing.

## Trends

The use of NWFP in Malawi is on the increase due to improved communication as well as information sharing. At local level, consumption as well as trade is likely to

increase due to financial benefits accrued from sales of NWFP. The volumes consumed and traded are likely to double in the near future. Indigenous mushrooms, for example, fetch higher prices on international markets. If productivity of such NWFP is increased, exports are also going to increase by the same margin. Scarcity of certain non-wood forest products in certain areas such as medicinal plants would no doubt promote exports from areas of plenty supply to deficit areas.

## Conclusion

Utilization of non-wood forest products (NWFP) has a more direct economic development impact on the local communities than in the case of forest conservation and management. Improvement on the production of these products will help to improve the living standards of the rural communities. An increased sale of any NWFP at competitive prices represents an opportunity for economic growth.

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