



Forest Livelihood Briefs

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Beekeeping in Zambia

Key Messages

- Zambia offers a conducive environment for beekeeping: abundant forest cover and indigenous knowledge and skills
- Trade of honey and beeswax provides up to 25% of total annual income for tens of thousands of households
- Certified organic honey, worth more than US\$800,000, is exported every year
- The new beekeeping policy offers opportunities to increase the collaboration between stakeholders within the sector as well as create supportive institutions which are needed for the sector to grow.

Importance of beekeeping in Zambia

Approximately 66 percent of Zambia is covered with woodlands and dry forests. Miombo woodlands, widespread on the plateau, are by far the largest forest resource covering 35.5 million hectares. These woodlands are dominated by *Brachystegia*, *Julbernardia* and *Isoberlinia*, which are preferred nectar sources for bees. The strong link between forests and traditional beekeeping creates opportunities for promoting beekeeping as an incentive for sustainable forest management.

Beekeeping and honey hunting improve diets for an estimated 250,000 farmers and are an important source of income for 20,000 rural households in Zambia. These activities are done during the time when labor demands for agriculture are low, thereby providing alternative employment for rural people. Seventy percent of Zambia's beekeepers live in Northwestern Province, where the sector has been recorded as the third largest employer in some districts. Nearly all beekeepers are also farmers, who increase their total annual household income by approximately US\$100–US\$400, selling honey and beeswax. In 2004, an estimated 400 metric tonnes was exported. All of the exported honey is produced in Northwestern province, where three quarters of the population lives on less than a dollar a day and honey sales may account for 25% of total annual income. The beekeeping industry also creates self-employment for informal traders of bee-products as well as formal employment in registered companies. In 2004, North Western Bee Products was recorded as being the second largest employer in Kabompo district. In total, this company buys honey from more than 4,500 farmers.

Resource base

There are two different types of insects that produce honey in Zambia. The indigenous African honey bee (*Apis mellifera* species) produces most of the honey and beeswax for the commercial beekeeping industry. Secondly, a group of insects known as “stingless bees” (including *Meliponula*,

Trigona and *Meliplebeja* species) produce a sweet honey-like substance, which is only collected for domestic use.

Although most of Zambia's woodlands sustain bees and beekeeping, the concentration of activities appears to be the result of socio-cultural factors combined with four critical ecological variables. These ecological variables are:

- Presence of main nectar providing tree species (e.g. *Julbernardia* and *Brachystegia*).
- Presence of other species which supply nectar in-between main seasons (e.g. *Parinari*, *Cryptosepalum*, *Marquesia* and *Syzygium*).
- Availability of water all year around
- Presence of a shaded, relatively undisturbed environment.

The biggest threat to beekeeping is deforestation and the estimates of annual deforestation rates in Zambia are alarmingly high: 900,000 hectares. The major causes are clearing of woodland for crop production and settlements. Forest fires and harvesting of wood-fuel for urban consumption also contribute significantly to deforestation. Moreover, the demand for timber for mining is becoming an increasing threat to the forests in the Copperbelt and surrounding the new mines in Northwestern Province.

Production systems

Wild honey has been collected and consumed across the country since time immemorial. The first written records of Zambian bee-hives date back to 1854, when David Livingstone described log and bark hives, suspended from



Photos 1 and 2: The basic natural conditions for honey bees are present in most of the country. However, the bulk of beekeeping occurs within the miombo belt, in areas of *Cryptosepalum* closed forest (left, Mwinilunga district) and on the interface between the miombo and Kalahari woodland (right, Chongwe district).

branches, used by the Southern Lunda. Even today traditional beekeeping using the bark hive technology prevails amongst the Lunda and Luvale tribes of Kabompo and Mwinilunga districts in Northwestern province. On average a beekeeper in these areas, most of which are men, has 73 bark hives, but not all are occupied at the same time.

In recent years farmers across the country are becoming interested in beekeeping and adopting different technologies suitable for their socio-economic and environmental conditions. Government and donor funded projects, in all provinces, are extensively promoting wooden Kenyan top bar hives. With proper management, yields can be as high as 35-40 kg from a single top bar hive, compared to 10 kg from a traditional bark hive. Moreover, it is easier to inspect and harvest these top bar hives, thereby producing good quality honey. However, the commercial retail price of these hives is still rather high and this has discouraged farmers to expand.

In some areas mud hives, using wooden top bars, have been promoted as a cost effective alternative. Many of the advantages of wooden Kenyan top bar hives are maintained. In Kapiri district, Central province honey production has increased drastically using this technology from 4 tonnes in 2004 to 10 tonnes in 2007.

Economic contribution

Beekeeping first became a commercial activity in Zambia when Portuguese traders from Angola came searching for beeswax in the 1890s. Honey was not traded in those early days, but used to brew a local beer, *mbote*. Even today, *mbote* is a popular drink, especially in Northwestern province, and an estimated 600-700 tonnes of honey are converted into honey beer, annually. *Mbote* brewing and sale is typically done by women at their homes. The majority of these traders is single or widowed, with little education and no alternative sources of income. Beer brewers often use second grade honey, with high pollen and moisture contents, which are considered to speed up the fermentation process.

Most of table honey is sold on informal markets, along major roads, in homestead shops or door-to-door. Volumes traded in this way, as well as the number of people involved, are difficult to quantify and no systematic research has been done to determine the actual size of the market.



Photos 3, 4 and 5: Bark hive construction is fast and does not require any cash inputs (left, Kabompo district); mud hives are placed in a shelter to protect them from rainfall (middle, Mumbwa district); wooden top bar hives are ideal for women to use as they are not hung high in trees (right, Mufulira district).

The formal national trade in honey comprises an increasing number of processing companies, which supply honey in 350-500ml jars to shops in urban areas. Most of these enterprises are relatively small, comprising of an owner and less than ten staff. Among the formal honey traders are also the non-governmental organisations that buy honey from producers in their operational areas. For example Mpongwe Beekeeping Enterprise and Environment and Development Zambia train farmers and provide inputs (wooden hives, top bars, veils, smokers etc), which the beekeepers “pay back” in the form of honey.

Zambian honey is favored on the international market because most of it is produced in relatively undisturbed environments and can therefore be classified as organic. Two large companies (North Western Bee Products and Forest Fruits Zambia Ltd.) export approximately 400 metric tonnes of certified organic honey per year.

An additional 200 tonnes is exported by several smaller companies. The main export markets for Zambian honey are the UK (55%) and Germany (35%). Other increasingly important markets are the Arab countries, the USA and the SADC region.

Beeswax is used by beekeepers for baiting their hives, or sold locally as a floor polish and for making candles. Certified organic beeswax is exported by the two large exporters. A significant, but unknown, amount of beeswax is bought by Tanzanian traders.

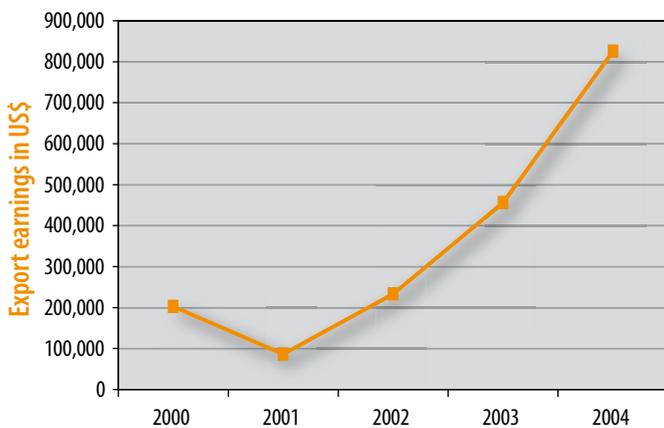


Figure 1: Export earnings from honey and beeswax (source: Export Board of Zambia, 2006)

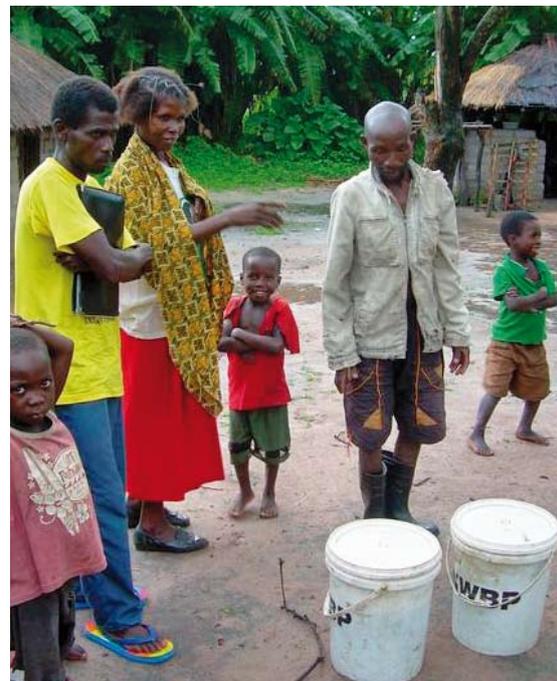


Photo 6: Both exporting companies work through out-grower schemes, whereby farmers are trained, given buckets and registered as a member of the company to ensure traceability of the product (Mwinilunga district)



Photo 7 and 8: Value addition for table honey is significant: farm gate prices range between US\$0.5 and US\$0.8 per kg and retail prices in urban areas are approximately US\$3.80 and US\$5 per kg, for hawkers and shops respectively. As a result the number of small scale traders is increasing rapidly (right, City market in Lusaka). There are a few bigger private sector honey buyers, who process, pack and distribute honey to wholesalers and large supermarkets (left, Speciality Foods in Kitwe).

Constraints in the sector

Despite the conducive environment for beekeeping in Zambia, the sector is facing a number of constraints which restrict it from reaching its full potential to contribute significantly to poverty alleviation.

These constraints include:

- Poor statistics on the size and structure of the sector.
- Lack of policies and a regulatory framework to guide stakeholders on forest resource use, management of bees and handling of bee products.
- The lack of national honey standards reduces the general quality of honey sold within the country and also reduces the price of Zambian honey on the international market.
- Due to the lack of an accredited certifying institute in Zambia, the opportunity to export at a premium price is unattainable for most producers and trading companies.
- No or very little competition amongst input providers and traders increases prices of inputs and reduces farm gate prices for honey and beeswax.
- Infrastructure and transport facilities in most beekeeping areas are extremely poor, which increases transaction costs
- General lack of collaboration between

stakeholders in the sector, notably the service providers. Beekeeping support is fragmented, sometimes even duplicated, and predominantly focused on training new farmers in basic beekeeping skills.

- Producers lack market information and entrepreneurial skills. They are therefore not able to locate input and credit providers, find buyers and negotiate fair prices.

Concluding remarks

Beekeeping and honey hunting play an important role in supplementing diets and providing income for thousands of households in Zambia. Moreover, the sector has considerable potential to grow: forest resources are abundant, traditional technical knowledge is widely available and there is extensive service provision by the Forestry Department and various NGOs.

Market opportunities are also increasing. For example, other products from beekeeping, such as royal jelly, bee venom and propolis are not yet produced commercially within Zambia. However, these products are used in traditional medicine and currently sourced elsewhere. Furthermore, both national and international demands for (organic) honey are increasing as more and more people are appreciating the health benefits of this sweetener.

The current effort of the Zambian Government to develop a beekeeping policy is a promising step towards removing some of the key constraints faced by the sector.

Major references

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