


FOREST APICULTURE


Trees and bees. Their names sound well together, and so they should, for trees and bees are interdependent and have been perfecting their relationship over the last 50 million years, literally millions of years before humans appeared on the scene. When they did, early civilizations developed skills to harvest honey and beeswax from bees, and forest dwellers have continued harvesting from the stores of different bee species found worldwide.

All forest ecosystems contain indigenous species and races of bees, and some now contain introduced honey bee species such as the African honey bees present in forests of South and Central America. Not all bee species can be exploited by people for honey and wax, but there is always one or more honey bee or stingless bee species that may be utilized. The main products harvested from bees are honey and beeswax. Less commonly harvested products include pollen and propolis, while bee venom and royal jelly are specialized products harvested only in a few countries where industrialized, intensive beekeeping industries are established. The world beekeeping industry trades around 1.2 million tonnes of honey per annum, with about half of this exported to the world market by countries such as Argentina, China and Mexico. This is a globalized industry, using just one type of honey bee (European races of *Apis mellifera*), together with standardized technology that well suits this particular bee.

By contrast, beekeeping in forests is a far more variable type of extensive activity. Depending on the species of bees utilized, beekeepers may have a large number of hives distributed throughout the forest or they may practise honey hunting, i.e. the harvesting of honey from wild nests of

bees. The latter is the most common apicultural activity of Asian forests, where some honey bee species nest in single combs in the open, since they cannot be kept inside a manufactured hive. In general, people practising forest-based beekeeping or honey hunting may be characterized as poor, usually living in remote areas, poorly represented and with few sources of cash income.

The main value (although it cannot be quantified in financial terms) of bees for forests is not the products of honey and beeswax, but rather a service – pollination. Complex interdependency has evolved whereby flowering plants depend upon bees to bring about pollination and thereby the production of viable seeds. The bees in turn depend upon the plants for their food and habitat. A tree does not need bees simply for its own reproduction (although for many plant species bees are vital), but for maintenance and regeneration of the whole system within which the tree exists. The more species of fruits and seeds generated within a system, the greater its diversity and the richer its life-carrying capacity. Trees and bees represent harmonious symbiosis: it is essential that this symbiosis be protected and, even without the promise of honey and beeswax we ought to be taking steps to protect bee communities.

For we are concerned about the future of honey bees. In 2007, the media highlighted news that beekeepers throughout the United States of America were experiencing a dramatic spate of sudden honeybee colony losses. As often happens, this created media exaggeration ranging from “Bee AIDS” to the extinction of human beings as a consequence of the loss of honey bees. The condition – now named Colony Collapse Disorder (CCD) has been familiar to beekeepers in Europe during the last ten years or so. No single cause has been identified; rather it is believed that the collapse of colonies arises as a result of the various honey bee pathogens that are now widely distributed (for example, the predatory mite *Varroa destructor*) and the viruses they carry, combined with the stress caused to bees by intensive, industrialized beekeeping. The bee stocks used by the global beekeeping industry are by now infested with a number of pathogens that are spread almost worldwide.

Tropical forests are valued as a habitat for the remaining mammal species; for

example, in October 2007 the World Conservation Union (IUCN) reported that our closest living relatives – the world’s apes, monkeys, lemurs and other primates – face unprecedented threat from the destruction of tropical forests, wildlife trade and commercial bushmeat hunting, with 29 percent of all species now in danger of extinction. For the protection of forest mammals, tourism, with all its associated costs, has so far been the only way found to enable local people to gain financially from the presence of rare mammals.

Yet tropical forests are significant also as the last strongholds for healthy populations of bee races and species. For these species, it is feasible for people to create worthwhile income without harm to bee populations. There are good examples of this, such as the North West Bee Products of Zambia, a cooperative owned by more than 6 500 beekeepers who live in the miombo woodlands of northwest Zambia and whose honey and beeswax are exported to the European Union.

Beekeeping may be one of the best, wholly sustainable ways for local people to create income from forests, and thereby to be concerned for their protection. Nevertheless, beekeepers are still sometimes banned from forests, losing their rights of access. Why is this? Where forests are being protected, it sometimes happens that beekeepers are banned from access, in the widely held belief that “beekeepers start forest fires”. But is this true? It may be that this belief arises from the use of smoke to subdue bees during the honey harvest and, in some areas, beekeepers camp in the forest at the time of the harvest. However, beekeepers know that trees are the habitat and food source of their bees and, when interviewed, always insist that they



TEN EXCELLENT REASONS FOR BEEKEEPING

- 1. Pollination.** Bees pollinate flowering plants – this activity is vital for life on earth. Adequate pollination leads to good-quality seeds and fruits, and is essential for maintaining biodiversity.
- 2. Useful products.** Honey is valued by all societies as a healthy food or medicine. Beeswax is used in cosmetics and candles and has many other uses. Pollen and propolis may also be harvested from bees.
- 3. Land use.** Bees visit flowers anywhere, so wild cultivated and protected areas all have value for beekeeping. Beekeeping does not use up land that could be used for crops.
- 4. Low cost.** Beekeeping can be very low cost. Hives and other equipment can be made locally and bees are freely available. Bees do not depend upon the beekeeper for food.
- 5. Income generation.** Where beekeepers have good market access, beekeeping easily generates a profit.
- 6. Sustainable.** Beekeeping is non-extractive and sustainable. Beekeepers are friends of the natural environment, willing to collaborate to conserve forests and vegetation where bees live and forage.
- 7. Benefits for several sectors.** Where there are beekeeping activities, other people in the community generate income by making equipment, from selling bee products and making secondary products.
- 8. Comparative advantage.** In areas of developing countries where there are abundant natural resources and healthy bee populations, there are good possibilities for marketing organic-certified honey.
- 9. Resilient income.** Beekeeping is resilient when disasters happen. Displaced communities can make hives and gain benefit in a relatively short time. It is not necessary for beekeepers to own land or to be settled permanently.
- 10. Gender and age inclusive.** Bees can be kept by women and men of all ages. Bees do not need daily care and can be attended to as other work allows.

Source: Bees for Development

are forest guardians rather than arsonists. Yet the myth remains that beekeepers start fires. Perhaps officials hold on to this rumour, for which they have no evidence, for it is easier to pin blame on beekeepers (who are often poor and remote), rather than admit to the presence of poachers and other non-identifiable forest visitors.

As a NWFP-generating activity, apiculture is different from others, involving more than simple collection of the product, since the beekeepers, by providing containers for bees to nest inside (hives), are involved to some extent with ownership and management of the species to be harvested. Apiculture does not fit easily into the sectoral divides of rural development, spanning as it does forestry, horticulture, agriculture, environment, animal husbandry and entomology, without fitting precisely into any single one of these sectors. Similar problems confront the classification of bee products because honey is a food, whereas beeswax is listed among non-food waxes and oils. Indeed, beekeepers themselves are in different times and places categorized as farmers, hunters and gatherers, cattle keepers, or rural dwellers, with beekeeping remaining hidden as an important skill and part of their lives.

Small-scale beekeeping can contribute significantly to livelihood security and yet the practice of beekeeping is underplayed in both policy and planning. The fact that beekeeping is usually a sideline activity (albeit one of several activities that add up to a resilient livelihood), may be one reason why it receives scant attention. Another may be that in recent years many beekeeping interventions have not achieved the results anticipated. At Bees for Development, we believe that this is because projects too often endeavour to transfer the knowledge and technology that form part of the global beekeeping industry to forest-based beekeeping. For example, while tropical African bees look rather like European honey bees (and indeed are the same species), their biology and behaviour are very different. Equipment designed for beekeeping in temperate climates does not work well for bees in tropical Africa and for people who have limited access to external resources. The equipment used in globalized beekeeping is often referred to by the misnomer of “modern” (even though

frame hives were invented in 1851) and many well-meaning projects endeavour to encourage forest beekeepers to transfer to “modern” equipment, erroneously expecting this to lead automatically to increased production and sales of honey. We are interested in seeing more value placed on existing, local and successful methods for forest beekeeping, with much greater emphasis given to creating linkages for marketing the products of this endeavour, and such that they are well differentiated from those of industrial beekeeping. With the need to find ways for people to create sustainable incomes from bees, we are interested in pursuing research to find the true measures of the values of forest beekeeping for local communities and the best ways to enable them to realize this value. The importance of the sustainable use of tree resources is now accepted but the tremendous scope for the sustainable utilization of bee resources is still poorly appreciated.

Please do contact us if you have any information to share.

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