

# non-wood

# NEWS

10<sup>th</sup> YEAR  
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## EDITORIAL

We are delighted that Dr Wulf Killmann, Director of the Forest Products Division, has accepted our invitation to write the editorial for this special tenth anniversary edition.

This, the tenth edition of *Non-Wood News*, once again features information on a wide range of products from agar wood to ivory and palm kernels covering a geographic area from Australia to Zimbabwe. The number of articles on bamboo is an indication of the importance attached to this non-wood forest product. Issues covered include bioprospecting, but also biopiracy, and there are articles on such varied subjects as medicinal plants and ecotourism. This issue thus reflects the vast scope covered by non-wood forest products, underlining the ambitious nature of our undertaking

when we started a news-exchange service on this subject-matter ten years ago.

When an anniversary draws near, we often find ourselves in a reflective mood and as we celebrate the tenth anniversary of *Non-Wood News* it is a source of satisfaction to see how the newsletter has grown – not only in length, but also in its readership. In fact, *Non-Wood News* has doubled its print-run from that first issue in 1994 (from 2 000 to 4 000), has more pages (from 48 to more than 100) and now reaches more people worldwide.

In recent years we have seen the spotlight shifting away from non-wood forest products to today's more pressing and high-profile subjects. But the role played by non-wood forest products in maintaining the food security and livelihoods of indigenous people is vital. We must not forget that "of the 6.2 billion people on the planet, 25 percent depend to varying degrees on the forest's resources for their livelihood" and that "350 million people living in or near dense forest depend highly on it for their subsistence or livelihood". The Forest Products Division of FAO's Forestry Department has always been fully aware of this importance and has supported the dissemination of information on all aspects of non-wood forest products, through publications, seminars, international meetings and, naturally, through its flagship newsletter *Non-Wood News*.

Through *Non-Wood News* we try to give a voice to all the actors in the non-wood forest products field. We receive contributions from all over the

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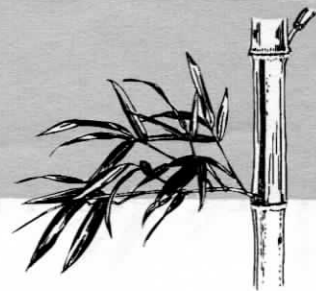


### NON-WOOD NEWS

is compiled by Tina Etherington, Wood and Non-Wood Products Utilization Branch (FOPW) of the FAO Forest Products Division. Editorial support for this issue was provided by Paul Vantomme, Sven Walter and François Ndeckere-Ziangba; design, graphics and desktop publishing were coordinated by Tina Etherington.

*Non-Wood News* is open to contributions by readers. Contributions may be edited to fit the appropriate size and focus of the bulletin. If you have any material that could be included in the next issue of *Non-Wood News* for the benefit of other readers, kindly send it, before 15 January 2004, to:  
NON-WOOD NEWS – FOPW  
FAO, Viale delle Terme di Caracalla  
00100 Rome, Italy  
E-mail: non-wood-news@fao.org  
www.fao.org/forestry/nwfp/nonwood.htm  
FAO home page: www.fao.org

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or part-time employment and a source of income. The publication of extension leaflets; manuals on bamboo craft making; promotional videos; workshops and meetings at the regional and national levels should be highly prioritized for the effective dissemination of research findings.

**Conclusions**

Bamboo has a great income-generating potential and could be a means of poverty alleviation in Nepal. The increased production of bamboos and their wise use would provide employment and income in both rural and urban areas. (Source: Extracted from an article by Shyam K. Paudel and Dr A.N. Das, Department of Forest Research and Survey, Babarmahal, Kathmandu, in *Journal of Forest and Livelihood*, 2[1].)

**BEEES AND BEE PRODUCTS**

**Bees keeping busy: maintaining biodiversity and helping create livelihoods**

The science and practice of exploiting bees' products and services – known as apiculture – has been in existence for thousands of years: keeping bees in hives made by people was already in practice in Egypt in 2400 BC. Today there is a great diversity of apicultural practices throughout the world, although most industrialized countries use standard styles of frame hives in which European races of honey bees are kept.



**Apicultural practices**

Apiculture is diverse, greatly varying in the way it is practised from one region to another: in

Africa, the Near East and Asia, bees are often kept inside the walls of people's homes (and are often not noticed by visitors); while in India, 90 percent of honey is harvested from wild-nesting bees. People practise apiculture not only in different ways, but also for different reasons: some farmers want to have bees

to ensure that such crops as fruit, oilseeds and coffee are pollinated adequately; others keep bees to harvest honey and wax; some farmers keep stingless bees for their honey, which is especially valued for its medicinal properties. A recent report from Laikipia Plateau in Kenya describes bees being used as a "living fence" to keep elephants away from smallholdings.



**Assets created by apiculture**

While products from bees such as honey and beeswax are well known, the main service provided by bees, pollination, remains poorly appreciated and underestimated in most countries. In the United States, scientists have attempted to measure the value of the increased yield and quality of crops achieved by honey bee pollination: during 2000, in the United States, this was estimated at US\$14.6 billion. In June 2002, data were published about the beneficial effect of honey bees for coffee pollination: in Panama, coffee bean production increased by 50 percent. We do not as yet have data proving the benefit of honey bees for the pollination of many tropical crops, and it is impossible to put a financial value on the effect of honey bee pollination of indigenous plants, and this important contribution to the maintenance of biodiversity. Other assets created by apiculture such as honey and beeswax are far more tangible, but their value must be far less than the wealth created by the optimal pollination of plants.

**Honey**

Many bee species collect nectar that they convert to honey as a food source. However, only bees living together in large colonies store appreciable quantities of honey. These are bees of the genus *Apis* and some of the *Meliponinae* (stingless bees), and are the species whose stores are recognized by humans as sources of honey.

Bees create honey from the nectar of flowers, with other plant saps and honeydew being used to a minor extent. After visiting a flower, the foraging honey bee flies back to her nest (hive) with the collected fluid in her honey sac, a modified part of the gut. In the hive, she regurgitates the fluid and passes it through her mouth to one or more "house" bees, which in turn pass it to another bee. The liquid travels through a chain of bees in this way before being placed in a honeycomb cell. This route evaporates water and adds enzymes that convert sugars in the nectar into different types of sugars. When the water content is below 20 percent the bees seal the cell with a wax capping – the honey is now considered "ripe". At this stage, the honey is perfectly clean and will not ferment. It is only during the subsequent harvesting and processing of the honey that its quality can deteriorate.

**Honey quality**

The type of honey produced depends on the species of plants being visited by the bees. Honey is judged by its aroma, flavour and colour, which depend mainly upon the sources of the nectar that the bees have gathered. Usually dark-coloured honeys have a strong flavour while pale honeys have a more delicate flavour. A great number of different substances (alcohols, aldehydes, organic acids and esters) are very important for the flavour of honey. Honey sweetness depends on high fructose content and acidity. A few plants give bitter honey: agave (sisal), datura, euphorbia, senecio – in some societies these honeys are very popular.

Some honeys have a very high pollen content which makes them appear



cloudy; this honey is sometimes (wrongly) thought to be of low quality. The presence of any other contaminants in honey (for example particles of wax, dead bees and splinters of wood or dust) give the honey a very low value.

Glucose is one of the major constituents of honey; when this crystallizes the honey becomes solid and is known as granulated honey. Granulation is a natural process and there is no difference in nutritional value between solid and liquid honey. This process may be likened to ice and water – the same substance but in a different form.



**Honey as medicine**

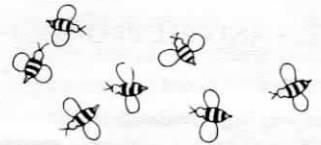
Honey has traditionally been regarded as a medicine or tonic, rather than an everyday food. Today honey is once again increasingly recognized for its healing and antibacterial properties when taken orally, or applied as a treatment for wounds and burns.

For example, every society knows honey and lemon as an elixir to relieve sore throats. The vitamin C of the lemon has immune-stimulating and anti-infective effects, while the honey has medicinal power. The most common bacterium known to cause sore throats is *Streptococcus pyogenes*, and laboratory experiments have proved that some honeys can inhibit the growth of this bacterium. Another bacterium that honey has been shown to inhibit is *Helicobacter pylori* – a causative factor in ulcers. The acidity, enzymic activity, hydrogen peroxide and high osmotic potential of honey are responsible for these healing properties. Honey can also be used in healing skin and drying out wounds: its antibacterial properties and physical composition, maintaining moist conditions

and allowing oxygen to pass, is good for preventing infections, reducing inflammation and promoting rapid healing.

**Honey production**

The type of hive a honey bee lives in has no effect upon the quality of honey that she makes. Honey bees always store clean and perfect honey regardless of where they are living: it is the subsequent handling by humans that leads to reduction in quality. A hive is just a container to keep bees inside, and good, serviceable hives can be made from many different materials. Different styles of hive may be of greater or less convenience for the beekeeper, but the honey bee is only concerned to have a safe place, large enough for the whole colony (the bees' family) and its stores, and protected from unfavourable weather and predators.



CASE STUDY 1  
**DEVELOPING MARKETS FOR TRIBAL ORGANIC PRODUCTS**  
 Experience from the Blue Mountains, Nilgiris, India

Keystone Foundation is a non-governmental organization working in South India, in the northwestern part of Tamil Nadu on the border of Kerala and Karnataka states. Landholdings are very close to the forested areas at the middle elevations of 800 to 1 000 m, and the area is in the humid/semi-humid tropics.

The Nilgiris consist of one of the most ecologically fragile areas in India. The hills are steep and traditional forests have been depleted and are under further threat because of the increase in large tea plantations and substantial destruction of natural vegetation by the Forest Department, through the introduction of exotic commercial tree plantations. Consequently, soil erosion is rampant. Tea and coffee plantations

have replaced large parts of the original vegetation and marshes have been converted into agricultural fields: 50 percent (30 000 ha) of all cultivated area consists of tea plantations.

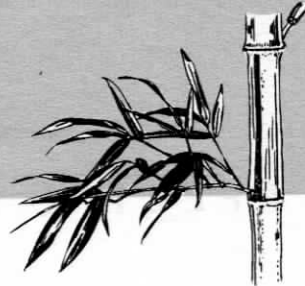
Although no hard figures are available, it is common knowledge that conventional tea plantations make heavy use of chemical fertilizers and pesticides and reduce the water retention capacity of the soil. The remaining forests are crucial for conservation of the flora and fauna and the sustenance of water bodies, consisting of the two major rivers, Bhavani and Moyar, and their numerous tributaries. They irrigate large areas and generate hydropower.

However, there are still good tracts of forests, representing the original Nilgiris'

vegetation. Here people live in harmony with the forest and collect non-timber forest products (NTFPs) such as wild nutmeg, cinnamon, sugar cane, pepper, honey and herbal plants.

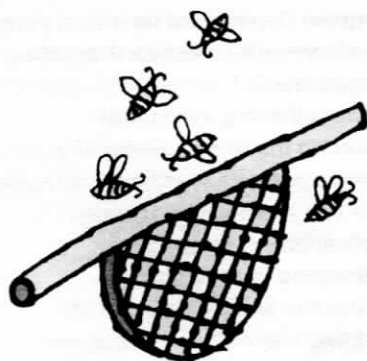
In 1995, Keystone began work with the tribal communities living in the area, and one of the primary concerns was to provide support for marketing. Keystone's entry point for work was bees – the Kurumba and Irula communities are traditional hunter-gatherers and slash-and-burn agriculturists. Honey hunting is an important part of their tradition and about two to three months in a year are spent in this activity.

The immediate concern was to help raise the procurement prices as the rates being offered by traders and intermediaries were very low. Coupled



**Constraints to apiculture**

In many regions of the world honey bee populations suffer from diseases and parasitic mites. This means that there are sometimes risks of honey and beeswax becoming contaminated by residues of chemicals used to control these diseases and mites. However, elsewhere, and particularly in poor rural areas, beekeepers still harvest from disease-free indigenous bee species and races. This makes beekeeping in some ways relatively easy compared with other regions of the world, and provides economic advantages.



For example, in sub-Saharan Africa, beekeepers harvest honey from indigenous honey bees, which means that African honey can be clean and natural. Assuming that honey is not contaminated in any other way (for example with other pesticide residues), this gives beekeepers a chance to produce honey of excellent, premium quality.

Another issue that affects people's opportunities to create livelihoods from beekeeping is the lack of access to markets, compounded by a lack of suitable containers for transporting and selling the honey, as well as a lack of roads and transport – often the major constraints for rural harvesters.

**Honey marketing**

Issues concerning access to external markets and the need for product certification and authentication represent a constraint to the industry and an area in which beekeepers deserve support.

Local honey prices are usually higher than the world market price. In this case, it makes sense for producers to satisfy

their local market, and to substitute imports, before considering export. Honey export should only be considered when the local market is saturated by local honey.



DFID - bees for development

**Product certification**

All potential honey traders or importers require certification of the honey they intend to buy. The European Union (EU) uses stringent criteria that are constantly updated as new contaminants are discovered in honey on the world market. While this makes the EU the hardest market for potential exporters to access,

with that were irregular payments and measurements. However, the tribal people slowly started trickling in with their products and soon there was a whole range of products – honey, coffee, pepper, mustard, silk-cotton and beeswax. All the food products were organic but there was no certification for them. With problems similar to those faced by small growers in many parts of the world – high costs, accessibility, no documentation, etc. – these same hurdles stood in Keystone's way.

**Honey – standards and geographical limitations**

As soon as Keystone started marketing honey, the local market appreciated it immediately since it was recognized as genuine, unadulterated honey. The cool temperatures at this elevation meant that honey was a part of the traditional diet. However, many other non-local customers

raised questions as to whether it was certified by AGMARK (an agriculture certifying agency of the Indian Government). Their standards were for processed honey and not wild honey. These standards, for example stipulating a moisture content of 18 percent, would have meant Keystone having to heat the honey to reduce the moisture. This would also kill the enzymes, which would mean a change in the natural character of the honey. Honey naturally available in the tropical temperature has a moisture content of more than 20 percent, depending on the area, rainfall, humidity and other factors.

If honey is harvested hygienically, its quality can remain good for years without being spoilt. Keystone has continued to market the honey without heating, based on its quality. Different batches of honey are not mixed so as to take advantage of the different flavours.

For organic certification, a certifying agency was contacted, but again the problems of cost, accessibility and the migratory behaviour of wild bees became an issue; and the matter still rests there.

Keystone developed an internal monitoring system to check the quality of products where the four main features are: raw material; processing; packaging and distribution; and consumption and disposal. Although this does not look specifically at the organic aspects, it is an attempt to control the entire process and put in place a system of checks and balances to improve the quality of the products.

**For more information, please contact:**  
**Mathew John, Keystone Foundation,**  
**Groves Hill Road, PB 35, Kotagiri 643**  
**217, Nilgiris, India.**  
**Fax: +91 4266 372277;**  
**e-mail: mathew@keystone-foundation.org**