



AFGHANISTAN

A land of non-wood forest products

Afghanistan is an exquisitely beautiful country comprised of mountains, scattered forests and lakes, located in the Hindu Kush mountain range and over 500 km from the nearest ocean. It has a continental climate: summers are warm everywhere except on the highest peaks, while winters can be extremely cold with considerable snowfall at high altitudes; at lower elevations, winters are milder and the climate is that of the desert or semi-desert.

The country is divided into 34 provinces, with Kabul as the largest city and administrative capital. Agriculture has traditionally been the basis of the economy, the main crops being wheat, fruit and vegetables, maize, barley, cotton, sugar beet and sugar cane. The rearing of livestock, mainly sheep, cattle and goats, is also important, and is the principal activity throughout the desert and semi-desert areas. The little industrial activity concentrates on food processing, textiles, leather goods and furniture. Since 1979, most sectors of the economy have been badly affected by almost continuous civil warfare. Eighty percent of the country's population relies directly on the natural resources to meet their daily needs. Out of its total land area, only 12 percent (7.9 million ha) is arable and 4 percent irrigated. An additional 46 percent is under permanent pastures and 3 percent under forest cover. The remaining percentage is mountainous.

Afghanistan has a multitude of NWFPs, which could contribute substantially to the national economy. The country can be divided into five geographic regions according to their NWFP suitability, as shown in the Table on p. 42.

NWFPs: present and future activities

Potential NWFPs	Ongoing activities of government and non-government agencies	Activities needed
Fruit and timber trees	The World Bank's Poverty and Health Development Profile (PHDP) and the Ministry of Agriculture, United States Agency for International Development (USAID), German Technical Cooperation (GTZ) and the Bangladesh Rural Advancement Committee (BRAC) are implementing a project for quality seedling production with community people, local entrepreneurs and farmers' associations	Production of quality fruit and timber seedlings for better utilization as food, fuelwood, fodder, wood, etc. for local consumption and to reduce forest depletion
Medicinal plants	No detailed information on medicinal plants was found but rural people are using herbal medicines at large and vendors of herbal medicines exist throughout the country	Explore medicinal plant potential throughout the country as the rural population is dependent on herbal medicines
Dried fruits and nuts	Local entrepreneurs produce export quality dried figs, black and green raisins, dried apricots and pistachios in different parts of the country for local consumption and export to the Islamic Republic of Iran and neighbouring countries	Best-quality fruit production and processing of dried fruits and nuts could constitute important export-oriented NWFPs
Saffron	Local entrepreneurs produce saffron in some parts of the country. Major growing areas are the Islamic Republic of Iran and Kashmir; current price/kg of good-quality saffron is US\$200	Best-quality saffron production could become an alternative livelihood approach to opium cultivation
Apiculture	FAO has conducted several exploratory assessments for apiculture as a means of potential income-generating activities (IGAs) for the landless, disadvantaged and rural poor	Develop apiculture through research and support of the Ministry of Agriculture and donor and development agencies
Sericulture	The Ministry of Agriculture has conducted several initiatives to establish this potential industry through research and assessments in coordination with FAO	Sericulture could be a major income generation for rural populations since mulberry trees are largely available throughout the country
Mushrooms	USAID-funded projects have initially been carried out in the eastern part of the country, involving the rural population as a potential IGA activity	Mushrooms could be an export-oriented industry in rural areas
Oil crops (olives, almonds, sunflowers, cotton, mustard, etc.)	The Ministry of Agriculture and FAO have conducted experiments and projects for the production of oil crop development; local entrepreneurs and farmers cultivate these crops but most of the production goes to neighbouring countries for processing	Oil crop production, processing to oil and preparation for local consumption and export
Juices and preserves from orchard fruits	Local entrepreneurs process juice for local markets. Export to international markets could be organized since quality fruits are available throughout the country	Quality juice production from abundant fruits and its processing could be of high demand on local and international markets
Karakul	USAID-funded programme includes research to improve the sector; 75 000 lamb pelts are exported per year from Afghanistan at varying prices – a very good-quality lamb pelt costs US\$45 on the EU market	Improved production level and quality of Karakul sheep are needed, with an increase in Karakul sheep herders and also in export volume
Wool	USAID-funded programme includes research to improve the sector; at present wool is sent to Pakistan where carpets are prepared and exported as Pakistani carpets. Yearly turnover of Afghan carpet industry is estimated to be US\$290–325 million	Improved production level and quality improvement of Afghan wool are needed, with an increase in sheep herders and also in export volume
Tourism	National entrepreneurs are eager to vitalize tourism. Afghan Logistics and Tours have already begun and, if the security situation improves, this sector could be of major earning importance to the national economy	Exploration of tourism industry, assessment of national economic development from tourism sector

NWFP potential in different regions of Afghanistan

Region	Province covered	Potential NWFPs
East	Nangarhar, Nuristan, Kunar, Laghman	Oil crops Apiculture and sericulture Skins/hides/leather Dried fruits and nuts Wool and carpets
West	Hirat, Farah, Badghis, Ghor	Saffron Cashmere Dried fruits and nuts
Central	Kabul, Kapisa, Parwan, Logar, Bamyán, Daykundi	Skin/hides/leather Juices and preserves Orchard fruit (juicing) Dried fruits and nuts
North and northeast	Balkh, Faryab, Saripul, Jawzjan, Samangan, Badakhshan, Takhar, Baghlan, Kunduz	Orchard fruit (juicing) Weaving and embroidery Karakul Wool and cashmere Tourism Dried fruits and nuts
South and southwest	Kandahar, Paktika, Paktya, Ghazni, Khost, Zabul, Uruzgan, Helmand, Nimroz	Orchard fruits/dried fruits Forestry Red meat/casing Skins/hides/leather Carpets

Years ago, Afghan NWFPs – especially fruits and nuts – were world famous; however, because of the country's situation of unrest over the last 25 years, this trade has been mostly abolished. In addition, during this long period the growing grounds of these products have been destroyed. The remaining resources are used by local people who rely on their traditional knowledge in the collection, processing and consumption of their valuable NWFPs.

NWFPs, which could play a vital role in the economy of Afghanistan, need to receive intensive attention and increased importance from the Government and development agencies working in the country. A multitude of NWFPs could be exported. The successful development of these products could have a profound impact on Afghan farmers, the economy and their international marketability. By being involved in NWFP cultivation and management, Afghan farmers could find an alternative livelihood to divert them eventually from illegal opium cultivation.

In order to achieve national economic objectives the potential NWFP sector must be transformed in the best way as soon as possible. (Contributed by: Mohammad Mukhtadir Hossain, Sector Specialist (Forestry), Agriculture Development Programme, BRAC Afghanistan, House 45, Lane 4, Baharistan, Kabul, Afghanistan.

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Medicinal herbs, an asset for local medicine and the export trade

Herbs are a key resource for most Afghans, both as domestic drugs and as traditional healers' remedies. Medicinal plants are also harvested, dried and exported. A flourishing trade exists towards Tibet and India. Herb shops are often run by herbalists of Hindu or Sikh descent, called *pansar*.

In Afghanistan, Ayurveda conceptions are combined with Arabic influences. Thus, the diagnosis and therapeutic principles of Afghan herbalists are often ascribed to the four elements: heat, cold, moisture and dryness (air, earth, fire and water).

Home care is the first resort in illness. Where this fails, the family of the patient asks for the advice and help of a spiritual leader (*mullah*) or exorcist (*jenkash*). An aromatic seed called *asfand* (*Peganum harmala*) can be burned, in order to purify homes and persons from the evil eye. Afterwards, or as an alternative to this spiritual intervention, a healer (*hakim* in Dari or *tabib* in Arabic) prescribes the appropriate drugs and gives dietetic advice.

Food and drugs with opposite humours such as cold and hot, are used to re-establish body balance. Bitter concoctions

such as an infusion of plantain leaves and roots, considered cold, are prescribed to heal sickness caused by cold influences, e.g. respiratory diseases and summer headaches.

Herbs highly popular among Afghan healers include the *daraona* (eye inflammation), water lily and *Zizyphus vulgaris* fruits (heart arrhythmia), *Plantago ovata* (headaches), *Capparis spinosa*, *Condonopsis clematidea* and *Rumex nepalensis* (indigestion), *Cannabis indica*, aloe and *Citrullus colocynthis* (laxative). An infusion of *Rubia tinctorum* leaves is used to increase female fertility. *Berberis lycium* and *mirhinz* (*Hippophae rhamnoides*) are renowned panaceas. The latter is traded and exported, since it is highly sought after by traditional healers and the drug industry, especially in China. (Source: a translated extract from Brandolini, G.V. 2005. *Medicine tradizionale*. Bergamo, Italy, CRF Press.) (Contributed by: G.V. Brandolini, Orizzonte Terra, via Mazzini 30, I-24 128 Bergamo, Italy. Tel./fax (+39) 035 21 91 42; e-mail: Orizzonte.Terra@gmail.com)



Capparis spinosa



Armenia Tree Project receives US\$100 000 grant to partner with Yale University

A new partnership between the Armenia Tree Project (ATP), Yale University's Global Institute of Sustainable Forestry and Conservation International will bring international "best practices" of sustainable forestry to Armenia. The joint venture, "Evaluation and Implementation of Sustainable Forestry Models in Northern Armenia," involves conducting a state-of-the-art analysis of the forest ecosystems in the Lori region with the aim of producing the first sustainable forestry training manual tailored to the specific needs of Armenia.

The goals of the project are to evaluate the condition of the forests in northern Armenia, paying particular attention to the

factors that are limiting the ability for regeneration. An assessment will be made of plants, herbs and other NTFPs that may be sustainably harvested for generating alternative income for residents living in close proximity to the forests. Training on rotational grazing will be held with livestock owners to prevent soil erosion and further degradation of forests.

This two-year \$100 000 project is being funded by the Critical Ecosystem Partnership Fund.

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 **AUSTRALIA**

Double gain for tea tree oil industry

A nine-year breeding programme has resulted in a new “breed” of tea tree that could increase the Australian industry’s competitiveness by dramatically increasing production volumes of high-quality tea tree oil.

Tea tree oil is a significant part of Australia’s essential oil industry – it is incorporated into many personal care and household products and is also used in a variety of agriculture and veterinary applications. The Australian industry is slowly recovering from several years of decline when the prices of this oil fell below the cost of production for many producers. Recent increases in demand and higher prices have seen renewed interest in growing the tea tree. Other challenges face the industry, however, such as the threat of increasing overseas competition.

The breeding programme forms part of an industry strategy developed by Ensis scientist, Dr John Doran. He says that if Australian producers are to maintain their commercial viability, they need to give serious consideration to replanting with the best material the breeding programme can provide. “The improved seed will be able to produce plants that are capable of producing 270 kg of oil/ha from paddocks that would otherwise yield 148 kg/ha, if established with unimproved seed,” he says.

The principal source of oil is *Melaleuca alternifolia*, a medium-sized tree from the coastal plains of New South Wales. [Source: *North Queensland Register* [Australia], 10 July 2007.]

TFS sandalwood

Tropical Forestry Services (TFS) is the world’s leading sustainable and socially responsible producer and manager of Indian sandalwood (*Santalum album*) with over 1 100 ha established in Kununurra, Western Australia’s tropical Kimberley region.

Since 1999 TFS has planted, and continues to plant, the prized Indian sandalwood using seeds originally sourced from India. Expert foresters have concluded that these trees will be suitable for harvesting at age 13 to 15 years based on current rates of heartwood formation. TFS plans to become vertically integrated, consistently to supply large quantities of high-quality plantation-grown Indian sandalwood oil, cultivated and produced in an environmentally friendly and ethical way.



Sandalwood

The latest Baz Luhrmann film *Australia*, starring Nicole Kidman and Hugh Jackman, is currently being filmed on the beautiful Kingston Rest property purchased by TFS late last year. TFS believes that this uniquely beautiful property represents the future of Indian sandalwood, allowing the company to expand on its existing 1 100 ha. As part of this acquisition, TFS has committed to expanding its existing training and employment opportunities for indigenous Australians. About half of the Kimberley population is of Aboriginal descent. TFS is committed to providing employment opportunities to ensure that at least half of its Kingston Rest staff is indigenous by 2016. By working with the Kimberley community and environment we believe we can help to ensure shared long-term benefits for the community, the environment and TFS.

TFS has donated the profits from filming to the Clontarf Foundation, a programme aimed at encouraging education, good health and relationship-building among the region’s indigenous children. [Contributed by: Danae Christensen, Research Officer,

Tropical Forestry Services Limited, PO Box 3068, East St George’s Terrace, Perth WA 6832, Australia. Fax: +61 8 9221 9477; e-mail: danae@tfsLtd.com.au; www.tfsLtd.com.au]

 **BANGLADESH**

**Hogla (*Typha elephantina* Roxb.):
a potential NTFP for socio-economic
upliftment in rural Bangladesh**

Hogla, the local name for a bush-like small plant, *Typha elephantina* Roxb. of the family Typhaceae, looks like a grass and may attain heights of 2–5 m. The species shows an encouraging growth performance in waterlogged, swamp and even under poor soil nutrition conditions in Bangladesh. It also provides a satisfactory yield in rural areas when incorporated with other agrocrops, without hampering the main crops. The species could, therefore, be an economically viable associate crop in rural areas since it does not require extra care, fertilizers or other costs involved in the collection and planting of seeds. The plant can survive even after a heavy flood.

Dried grasses of the species are extensively used to make prayer mats, and other types of mats, baskets, ropes and various handicrafts. The residual matter (i.e. defective leaves, petiole, roots) of the plant is also extensively used as fuel and for partitioning and thatching purposes among rural farm holders. Moreover, the plant produces a huge quantity of pollen, which is used to prepare a delicious traditional food in rural areas.

A recent study of southwestern flood plain areas of Bangladesh reveals that rural women, old people and even children are involved in preparing secondary products from *hogla* leaves, while men are mainly engaged in the planting, collection, sorting and marketing of the leaves. Women usually utilize their leisure time to produce secondary products. The study also suggests that planting of *hogla* just once can secure the sustainability of planting materials on the same field for at least ten years. It was also evident that farmers can earn an additional US\$5 from a decimal part of their land just from selling *hogla* leaves.

In Bangladesh – a country with a huge population growth, shrinking income and per capita agricultural land, low agricultural productivity, acute shortage of fuel in rural areas, and where sudden floods become serious threats –

incorporating *hogla* with other profitable agricultural crops can be an advantageous solution. The massive introduction of the species in rural areas will also empower women and old people to contribute increasingly to their family income and thus to improve their living standards. The residual products obtained from the species can be used to minimize the domestic fuel shortfall in rural areas. However, the marketing system, both for primary and secondary products, needs to be improved to maximize the profit of growers and producers. (Contributed by: Sharif Ahmed Mukul, Department of Forestry and Environmental Science, School of Agriculture and Mineral Sciences, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh. E-mail: sharif_a_mukul@yahoo.com)



“Riches of the forest: fruits, remedies and handicrafts in Latin America”

Murta (*Schumannianthus dichotoma*) cottage industry in socio-economic development of rural people in the northeastern region of Bangladesh

A recent study has attempted to generate information on the status of the *Schumannianthus dichotoma* (*murta*) cottage industry and its contribution to the income and employment of rural areas in the northeastern region of Bangladesh with the aim of improving the database necessary for any socio-economic development programme. This survey was carried out at Gowainghat thana (subdistricts) in Sylhet district.

The forest-based cottage industry is one of the major sources of off-farm income for the rural population of Bangladesh. NWFPs could generate potential income for the local people and provide employment for about 229 000 of them, which would continue throughout the year, or at least during the agriculture off-season.

Murta, an important NWFP belonging to the family Marantaceae, is a clump-forming shrubby plant, dichotomously branched, with green cylindrical stems of 3.7–4.6 m in

height and a diameter of 2 cm. Local names for this NWFP differ throughout Bangladesh, e.g. *patipata* and *pai-jung* in the Chittagong region, *mostak* in Noakhali, *pat-bat* and *murta* in the Sylhet and Tangail regions and *paitrabon* in Barisal.

The species is generally grown in low-lying marshy areas of greater Sylhet, Mymensingh, Barisal, Noakhali, Chittagong and Pabna districts and covers sizeable areas in the forest of Sylhet division. It is sporadically planted along roadsides and around ponds and, formerly, fallow and unproductive paddy fields were used for its large-scale cultivation.

Murta is extensively used as a raw material in cottage industries, especially for floor mats, prayer mats and woven utensils, and is adopted by both the rich and the poor. A recent valuation study revealed that the stem (culm) harvested from 100 ha of land, worth 65 lakh taka (US\$108 300) can produce products (such as *shitalpati* prayer mats) worth 1 crore 80 lakh taka (approximately US\$300 000). Thus, it plays a significant role in generating income and providing employment opportunities, as well as improving the socio-economic status of the rural people.

A large number of local people throughout the country have adopted the *murta*-based cottage industry as either their part-time or full-time profession and have earned a substantial income. Various novelty items produced from it are very popular with both the people of Bangladesh and also abroad, where it is in great demand and earns foreign currency. But, this is all about to be ruined since more and more fallow land is now being converted for agricultural production, considerably reducing *murta* production. The productivity and sustainability of the industry are, therefore, becoming uncertain because of this shortage and artisans are consequently suffering the curse of poverty. If this process continues, production of the popular *shitalpati* prayer mat will decrease and ultimately be lost forever, making thousands of people jobless.

Our study revealed that 77 percent of the total population are directly involved in this cottage industry and that each article fetches a different price, depending on total requirements for *murta* and other materials, market demand and workdays required to produce an article. The net average profit/workday on various articles varies from Tk16 to 51, with net profit/article varying from Tk25 to 127. Entrepreneurs

manufacture articles according to seasonal requirements and local market demand.

The *murta*-based cottage industry, therefore, can improve rural livelihoods, help to generate additional employment and income, contribute to foreign currency and support biodiversity conservation. *Murta* can play a vital role in the economy and environment of the country. It is possible to develop the cottage industry to a profitable international standard through the scientific cultivation of *murta* on private and government forest lands. It is necessary to look not at the product or commodity in isolation, but at a wide range of factors that would enable it to be exploited, managed for sustainability and marketed for profit. The government and other national and international agencies should come forward to motivate and assist interested farmers through technical support and financial assistance to help the industry flourish. If managed properly, it will not only attract foreign currency but also create employment opportunities for thousands of unemployed villagers in Bangladesh. (Contributed by: Romel Ahmed, Mostafizur Rahman, A.N.M. Fakhru Islam and Mohammad Redowan, Department of Forestry, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh. E-mail: romelahmed76@yahoo.com)



Grow bamboo, save trees

In Bhutan, bamboo is seen as a possible alternative to wood to reduce the pressure on forests. The Forestry Development Corporation Limited (FDCL) office in Phuentsholing distributed 10 000 seedlings on 2 June 2007 to government agencies and interested private individuals in Samtse and Chukha *dzongkhags* (districts) to start large-scale cultivation of bamboo. The bamboo seedlings were raised last year mainly in Samtse.

More than 866 acres (approximately 350.5 ha) of degraded land under Samtse and Chukha *dzongkhags* were identified last year for plantation of various bamboo species and other valuable tree species that were of commercial value according to the divisional manager of FDCL, Tashi Peljore. Bamboo helped to conserve soil and water in catchment areas such as Balujora in Pasakha and Dam Dum in Samtse by minimizing the downstream flow of silt.

Bamboo products such as flag posts with *reti* and *khoro* supplied by FDCL have been extremely effective as a substitute for wood. Since the establishment of bamboo plantations in mid-2006, 1 500 flag posts have been supplied to the public at reasonable rates, said Tashi Peljore. Bamboo is now also used by architects and designers in the construction of airy summer houses as well as for furniture. Gardeners in the southern region grow bamboo for screening and greening, and to be used as flagpoles and scaffolding.

Phuentsholing is the second highest consumer of timber after Thimphu according to FDCL officials. [Source: Kuensel [Bhutan], 28 June 2007.]



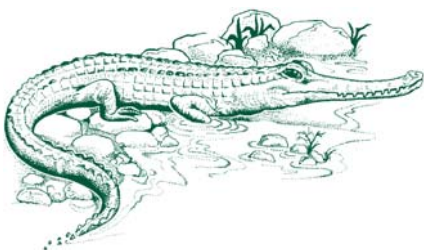
BOLIVIA

Caiman (*Caiman yacare*) in Bolivia: a CITES success

After a long period of overexploitation of caiman (*Caiman yacare*) for its leather in Bolivia, the Government installed a general prohibition against hunting of the animal in 1990 – having signed the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1987 – and this resulted in the population's recovery. It has now grown strong and hunting is again possible, although it is regulated by quotas that assure it cannot be overexploited once again.

CITES set a quota of 50 000 caiman leathers that can be exported per year, which until now has been respected and gave estimated returns to the local people of around US\$0.38 for 40 062 skins in 2003, and US\$0.44 for 46 720 skins in 2004.

The preliminary results of an evaluation undertaken by the National Programme of Caiman Management in 2005 indicate that around 1 750 people are employed in the commercialization of caiman leathers. [Source: *Trade measures – tools to promote the sustainable use of NWFPs?* FAO Non-Wood Forest Products Working Document 6.]



BRAZIL

Top-selling products at Mercado Floresta

One of the main purposes of Mercado Floresta (Forest Market), organized by the NGO Amigos da Terra–Amazônia Brasileira and held from 25 May to 3 June at the Municipal Market of São Paulo, was to present the enormous range of products based on Brazilian biodiversity and the importance of protecting Brazilian biomes for residents of São Paulo. For the first time, these products were made available for retail and, simultaneously, renowned chefs took turns in providing taste tests and talks in a gastronomic venue established at the market.

One of the highlights of the fair, for example, was a sweet made from *umbú* (*Spondias tuberosa*) and organic sugar produced by the Canudos, Uauá and Curaçá Family-Based Agricultural Cooperative, which works in the semi-arid Brazilian northeast.

Another top seller was organic powdered cocoa from the Atlantic rain forest, produced by the Cabruca Cooperative of Organic Farmers in southern Bahia in partnership with the Belgian firm, Barry Callebaut, a worldwide leader in the production of cocoa and chocolate goods. Certified by the Biodynamics Institute (IBD), the product is obtained by processing 100 percent organic cocoa seeds, without the use of any pesticides.

Baru (*Dipteryx alata* Vog.) nuts were also much sought after among the agroecological products. Produced at the Cerrado (savannah) Center for Studies and Sustainable Use, their sustainable economic use helps preserve the species and aids local communities directly involved in production.

One of the market niches offered was an extra virgin, cold-pressed Brazil nut oil. Produced by Ouro Verde, it is perfect for salads, risottos, fish and complex recipes. Rich in omega 6, omega 9 and vitamin E and with no cholesterol, it helps to prevent heart disease, stimulates the immunological system and increases longevity.

Another hot item was honey vinegar, from the Fernão Velho bee farm. A natural product, it is made from water and fermented hydromel (mead) acetic acid, and does not contain preservatives or artificial aromas.

The event was an important opportunity for companies from northern Brazil to market their products. José Luiz Felício,

manager of Miragina, said that “the fair is an excellent way of bringing our products and making them known”. The company from Acre, founded in the 1960s, makes Brazil nut-based products. Generating income for traditional populations, delicious biscuits are made from Brazil nuts. These were one of the top sellers at the fair, with four extra shipments being brought in to supply the demand generated by the event.

The same happened with frozen *açaí* (*Euterpe oleracea*) from Fruitamazon, a company from Pará, which transferred its activities to the neighbouring state of Amapá and is known for offering the best *açaí* pulp available on the Brazilian market. The company has 30 ha planted and also buys from riverbank communities in places such as Calçoene, Porto Grande, Serra do Navio, Ferreira Gomes and Mazagão in Amapá. *Açaí* has been arousing interest around the world because of its nutritional value. In addition to having become a fad among youths throughout the country, several products that include *açaí* are beginning to appear abroad.

Besides *açaí*, names such as *cupuaçu* (*Theobroma grandiflorum*), *pequi* (*Caryocar brasiliense*), *taperebá* (*Spondias mombin* Jacq.), *buriti* (*Mauritia vinifera* and *M. flexuosa*), *tucumã* (*Astrocaryum aculeatum*) and *bacuri* (*Platonia insignis*) have now entered the vocabulary of Brazilian products. Chocolate sweets with fruit fillings from Amazonia, chocolate pralines with forest fruits prepared by chef Daniel Briand and native fruit hand soaps from Atelier Especiarias also were part of the mix of top-selling products at the fair.

Setting records in terms of public and sales, the fair demonstrates the huge potential of forest products and how production and sales of these products are the means to keep the forest standing. [Source: Amazonia.org.br, 4 June 2007.]



BULGARIA

President affirms Bulgaria's forests as national symbol

Bulgaria's forests should be regarded as a national symbol, President Georgi Purvanov said, during a regional conference about forest preservation and restoration issues in the southeastern Bulgarian town of Yambol. Purvanov added that the Bulgarian forestry sector needs a clear strategy and also a real governing policy that could yield visible results.

He called for reforms that would combine experience and tradition. "I hope the establishment of the State Agency for Forestry will revive the love of forest and care of its fate," Purvanov said. He also expressed his hope that next year's budget would allow this agency to be financially independent. (*Source: Sofia Echo* [Bulgaria], 24 August 2007.)

CAMBODIA

Searching for the secret of sustainable rattan use

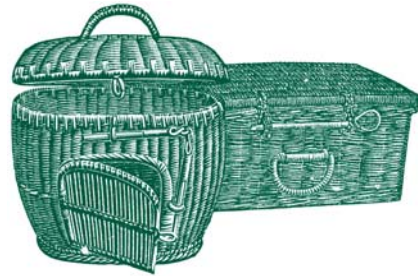
NTFPs are important resources for local Cambodian communities, since they provide people with many necessities such as food, income, medicine and shelter. Rattan is one of the most important NTFPs; in some communities selling rattan is the second major source of a family's income. Unfortunately, an increasingly high demand for rattan and other NTFPs threatens forest resources and local livelihoods.

Under sound management, rattan can provide a sustainable income for many communities. The WWF Greater Mekong's Cambodia Country Programme is working with the Preak Thnot commune, located around Bokor National Park in eastern Cambodia, to develop a suitable rattan management model. The aim of the project is to develop economic incentives for local people to manage rattan sustainably inside the forest or Community Protected Areas.

A rattan management group, composed of two subgroups – the handicraft group and the nursery group – has been established. It is estimated that through value-added processing and market linkages, group members could generate an additional US\$600–800 per year. Part of this extra income could be used to administer the group and also fund the cost of establishing rattan plantations inside the forest, which provide local people with a renewable source of rattan.

To support plantation activities, WWF has established Cambodia's first rattan nursery. Covering an area of more than 200 m², the nursery can produce around 20 000–30 000 rattan seedlings per year. Under the management of the rattan group, local villagers have received training on the day-to-day management of the nursery, collection of seeds and transplantation techniques. The villagers are collecting seeds and seedlings from areas of the forest with high densities of rattan. In six months

time, the seedlings will be planted in specific areas in the forest and once the plantation is established the nursery will sell its seedlings to other villages. (*Source: WWF Cambodia*, 28 June 2007.)



Flourishing trade in Cambodian cane

Home to a number of indigenous tribes, Ratanakiri Province lies nestled in the lush upland forests of northeast Cambodia. Communities eke out a living by growing rice for half of the year, but food shortages caused by low yields and increasing family size are common. One source of income is cashews, grown in fields created out of the forest through the slash-and-burn technique. However, this practice is threatening forest biodiversity as well as limiting availability of other NTFPs on which villagers depend for nutrition, building materials, medicines and money to buy food and other household essentials.

Cambodians have traditionally harvested a wide variety of NTFPs, including numerous species of wild fruits and nuts, resin, honey, mushrooms, medicinal plants, bamboo and rattan. But untapped potential exists for increasing the value of many of these products for rural communities. Bamboo and rattan, in particular, have a range of different uses – as raw materials for building houses and for household furniture.

In addition, bamboo and rattan are often fashioned by villagers into baskets, boxes, musical instruments and other handicrafts and sold on a limited basis. However, by learning the technical skills needed to manufacture high-quality goods, gaining direct access to markets and learning sustainable cultivation and harvesting practices, villagers could achieve consistent profits while maintaining the forest habitat in which rattan and bamboo flourish.

In order to provide support to forest communities in Ratanakiri, several NGOs in Cambodia have formed the National NTFP Working Group. For example, the Community Handicraft Initiative Project (CHIP), recently launched by the Cambodian NTFP Development Organization (CAN-DO),

aims to revive and preserve the skills needed to create traditional arts and crafts among the indigenous Kreung people, while also providing training in forest conservation and business skills. CAN-DO executive director Sarim Heang reports that the organization is supporting two village NTFP enterprises (VNEs), set up in late 2006, where members participate in workshops, demonstrations and informal discussions to learn how to harvest bamboo and rattan in a sustainable manner.

At the NTFP workshop in December 2006 attended by CAN-DO and others, techniques were shared for sustainable harvesting and cultivation of bamboo and rattan. Mark Poffenberger, director of Community Forestry International (CFI) – another member of the National NTFP Working Group – emphasized that regular trimming of bamboo is necessary to maintain high levels of plant productivity. Poffenberger added that the practice of culturing rattan and bamboo is also growing in Cambodia. For example, training is given on how to separate and prepare bamboo seedlings for planting, when to plant and how to plant three bamboos in a triangle to improve wind resistance. Amanda Bradley of CFI reports that community forestry groups are also protecting the bamboo and rattan habitat by organizing patrols to prevent burning and logging.

To enhance development of bamboo and rattan handicrafts each VNE, supported by CAN-DO, holds regular gatherings to discuss methods for improving quality, colouring, patterns, product size and delivery. More formal monthly meetings are held where producers review their achievements and develop action plans for the following month.

Heang notes that VNE members are beginning to understand that customer preferences must be taken seriously to improve profitability. In addition to customer feedback, producers receive support and regular field visits from CAN-DO. These strategies are also endorsed by Poffenberger who believes "improved processing can substantially enhance NTFP values, often raising the gate price of a product by 300–1 000 percent".

Creating direct market access is also supported by CAN-DO, particularly with rattan back-baskets sold in Banlung town. Producers are now transporting their goods directly to two retailers, cutting out intermediaries and thus increasing profits. In addition, with partners such as the

Artisans' Association of Cambodia, CAN-DO is assisting producers to design more value-added products, including musical instruments and home accessories. During the last six months, Heang reports that VNE members have begun to realize that bamboo and rattan will provide significant income for their families, but only if they continue to protect the forest, adopt sustainable methods of cultivation and harvesting, and work continually to improve product quality.

CAN-DO is part of a collaborative network of NGOs and community-based organizations. It works closely with the Non-Timber Forest Products Exchange Programme for South and Southeast Asia, the National NTFP Working Group, and some handicrafts-based NGOs and enterprises in Cambodia to enable the CHIP endeavour to move forward. (Source: Treena Hein, New Agriculturist Web site, viewed 8 October 2007.)

CAMEROON

Bee farming and honey marketing organizations in the Northwest Province

Two types of honey are extracted from the Kilum-Ijim forest of the Northwest Province: light brown and cream white honey. The light brown honey is more popular in the Northwest Province and other parts of Cameroon. The cream white honey, principally extracted from the highest peaks of the Kilum-Ijim forest, is less popular and therefore scarcer in the province. Indeed, this honey, which looks like cream butter, is unknown not only to many consumers in the province but also to many Cameroonians.

As quality is a key element in product marketing, honey is no exception. Each of the marketing organizations assesses the humidity level of their honey using appropriate instruments. In addition to determining humidity levels, the different honey types are sold in measurements ranging from 100 g to 30 kg. While dealers in cream white honey present it in open-mouthed containers, those of light brown honey do not have any standard measures.

A recent paper assessed the efficiency of honey marketing organizations in the Northwest Province, while raising awareness on the economic and ecological potentials of bee farming. Data were collected on the type and form of honey marketed, as well as the costs and prices using a structured questionnaire. Secondary data were obtained from the sales records of

the market dealers covering a period of five years. Costs and profit margins were analysed. Irrespective of type of honey, the marketing organizations were judged to be more efficient dealing with comb honey than partially drained honey when used as raw material. Furthermore, the honey marketing organizations are profitable with a net margin of at least 18 percent, the minimum interest rate charged by microfinance institutions across the Northwest Province.

Results of the study suggest that profit margins of the product marketed could be increased if market dealers interact and share experiences. While there is an obvious need for improving the technical capacities of actors of the subsector, more specific information on the cost structure of the entire value chain would shed more light on the potential and actual contributions of bee farming to emerging regional and national economies.

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Exhibition of local indigenous crops impresses population

It was a day for local/indigenous crops and NTFPs recently in Bamenda with an exhibition to raise awareness about their value and importance. The welcome initiative by the Network for Sustainable Agriculture (NESA) and the Western Highlands Nature Conservation Network (WHINCONET) assembled rare local and indigenous food crops from the Western Highlands: pumpkins, bambara groundnuts, cowpeas, garden eggs, cashew nuts, monkey cola, Bali guava, passion (Adam) fruit, *ancop*, tree trunk mushrooms, etc.

Fon Nsoh, President of NESA, told participants at the exhibition about the need to encourage the consumption, promotion, cultivation and preservation of indigenous food crops. Fon Nsoh revealed that about 100 million Africans suffer from food insecurity which exposes them to serious health risks and famine. He blamed it on the underuse or misuse of existing food resources and expressed the conviction that the base of Africa's food supply could be broadened by growing its almost forgotten indigenous food crops and also by the sustainable exploitation of NTFPs. It was evident during the exhibition that Africa's indigenous knowledge base for food production and especially traditional food crops is being lost and that is why most of the major foods cultivated and consumed have their origins elsewhere.

The exhibition also offered a rare moment for lessons on the advantages of indigenous crops over exotic ones as many were encouraged to consume, to give farmers a chance to improve their standard of living.

The NESA exhibition was organized under the combined theme "Valuing local/indigenous food as a right for people living in poverty, rural women as agents of change, producing and providing". The exhibition was organized on the heels of the 2007 Rural Women's Day, World Food Day and the International Day for the Eradication of Poverty. (Source: *Cameroon Tribune*, 29 October 2007.)

CANADA

Forestry funding coming to Chapleau, Ontario

A northeastern Ontario mill town will be the epicentre of a movement to harvest the wealth of northern Ontario's alternative bioproducts commercially on a regional scale. With \$1.6 million in seed funding from Ottawa, the town of Chapleau has been chosen to make it happen.

The forestry town of 2 300 people was selected in July as one of 11 sites across Canada for Natural Resources Canada's (NRCan) new Forest Communities Program (FCP). The potential in developing NTFPs caught the attention of NRCan officials. The 11 communities and their yet-to-be created regional organizations will be able to tap into a \$25 million fund dispensed over five years. The idea behind these organizations is to develop and share knowledge, tools and strategies to help hard-hit forestry towns

make a transition into value-added and emerging new forest-based opportunities.

The programme, to be known as the Northeast Superior Forest Community partnership, may be headquartered in Chapleau but project manager Sylvie Albert wants to cast a wide regional net and build as much collaboration as possible. Armed with \$325 000 for each of the next five years, Albert says that the programme emphasis is beyond just building bricks and mortar and making inventories of what is available in the bush. She wants to see a new wave of innovative forest projects come through to production. For some small producers, the money will be a final incentive to take their fledgling enterprises to the next step.

Besides Chapleau, five other communities of Dubreuilville, Hornepayne, White River, Manitowadge and the township of Michipicoten will be involved in the partnership, which includes involvement with three area First Nation communities. They will have at their disposal university academics and community development personnel as well as government, business and industry experts in value-added forestry.

Combined with the NRCan money, Albert has raised a total of \$2.3 million with additional community contributions and she is looking for more. Other players such as the Northern Ontario School of Medicine (NOSM) and Laurentian University's School of Management, where Albert teaches, are coming on board as collaborative partners. NOSM is interested in using plants in the boreal forest for medicinal and nutraceutical (natural health products) uses.

Albert says that one of the most advanced projects is the newly created Non-Timber Forest Products Corporation. High on its agenda is finding new and promising NTFPs to commercialize, such as blueberries. Quebec, Nova Scotia and New Brunswick have already done so with great success, she says.

There are other promising natural crops such as Canada yew (an ingredient used to fight cancer) and fireweed (a skin care nutraceutical).

"If you have pockets of producers across the north, it would certainly support what other provinces are trying to do on a worldwide scale," says Albert. "There are many things the forest has to offer beyond just cutting lumber that could be utilized to start up cottage industries." (Source: Northern Ontario Business, 6 September 2007.)



Maple syrup harvest bittersweet

Despite a disastrous maple syrup crop in the lower St Lawrence region this year, the product's provincial marketing board predicts the overall 2007 harvest will still yield a record \$200 million plus in sales. Charles Felix Ross, Secretary-General of the Fédération des producteurs acéricoles du Québec said it will mark the second consecutive year that a below normal size crop sets a new sales mark after the 2006 harvest sold for the previous high of \$180 million.

Even though a recent survey of the federation's 7 300 maple production farm operators calculated a yield of 61.7 million lbs (1 lb = 0.45 kg), a 10 percent drop from last year, there is an equal percentage increase in sales and exports. Ross credits stronger promotions domestically and growing interest in the health benefits of maple syrup south of the border for the product's increasing popularity.

An average crop is 78 to 80 million pounds, while a bumper crop is 100 million pounds, so Ross called this year's yield very small.

Quebec accounts for 93 percent of Canada's maple syrup and produces 80 percent of the world's supply, 60 percent of which is consumed in the United States of America. About 2 000 maple farm operators produce 80 percent of Quebec's maple syrup. (Source: *Montreal Gazette*, 17 July 2007.)



Manejo y conservación de *Ryania speciosa* en el trópico húmedo de Costa Rica

Ryania speciosa Vahl, es un arbusto de la Familia Flacourtiaceae; constituye uno de los muchos productos forestales no madereros (PFNM) de América tropical que es objeto de comercio en el mercado internacional.

Es propio de los bosques tropicales en América, generalmente se encuentra a orilla de ríos en bosques primarios y la

distribución va desde Nicaragua, Costa Rica, Panamá, Trinidad, Venezuela, Colombia, Ecuador, hasta Perú y Brasil.

Una investigación realizada por el Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) determinó su presencia en los bosques húmedos de Costa Rica. El estudio etnobotánico realizado en 1989 mostró el uso tradicional por parte de un grupo nativo de la etnia Bribri, establecido en Talamanca, Costa Rica, quienes emplean la madera en la construcción de viviendas por su resistencia al comején, lo que determina su empleo milenario por parte de las comunidades nativas de América.

La presencia de ingredientes químicos, tipo alcaloide en la madera y hojas cuyos principales componentes son ryanodina (C₂₅H₃₅NO₉); 9, 21-didehidroryanodina, contribuyó a que se emplee desde el siglo pasado en Europa y Estados Unidos para el control de plagas en la agricultura.

Dada su importancia económica en el control de plagas en la agricultura y el aprovechamiento comercial de su madera, conujo al CATIE a realizar investigaciones enfocadas a su manejo sostenible dentro del Proyecto de Conservación y Desarrollo Sustentable para América Central.

Los resultados de la ejecución de estudios ecológicos condujo a determinar que *R. speciosa* es una especie esciófita por su característica de crecer y desarrollarse a la sombra del dosel del bosque y presentar madera dura. La distribución de las poblaciones silvestres presenta un patrón espacial agregado únicamente para los brinzales, siendo para los latizales el patrón al azar y para la población total un patrón agregado en el bosque húmedo tropical de Costa Rica, con una densidad de poblaciones silvestres de hasta 874 ind/ha y capacidad de rebrote posterior a su cosecha.

El auge de la agricultura orgánica ha conducido a un mayor aprovechamiento de los PFNM como sucede con *Quassia amara* (Familia Simaroubaceae), *R. speciosa*, situación que está provocando vulnerabilidad en poblaciones silvestres, como respuesta se han implementado investigaciones para el manejo de poblaciones silvestres y acciones de domesticación en Costa Rica.

En la actualidad, el abastecimiento de la materia prima (madera) de *Ryania* para el mercado internacional proviene de Trinidad y Tabago. El principal importador es Italia y Estados Unidos de América. En América

existen productos comerciales en Estados Unidos y Argentina.

Por esta razón Bougainvillea Extractos Naturales, empresa establecida en Costa Rica realiza acciones de manejo de poblaciones naturales y domesticación con la participación de agricultores dueños de bosques para su comercialización como biopesticida en forma de extracto estandarizado en el control de mariposas. (Aportación hecha por: Rafael A Ocampo S., Jardín Agroecológico Bougainvillea. Apartado Postal 764-3100. Santo Domingo, Heredia, Costa Rica. Correo electrónico: quassia@dracs.co.cr; www.bioextractos.com)

Costa Rica and the United States of America swap debt for nature

Costa Rica and the United States have signed an agreement to swap US\$26 million of Costa Rican debt for funds to protect more than 1 000 acres (approximately 404.7 ha) of tropical forest. The move will protect biodiversity in the region and help thousands of indigenous people to maintain sustainable livelihoods.

The two countries made the agreement this month (October), with Costa Rica agreeing to spend the swapped amount on forest conservation over the next 16 years. The United States of America will contribute \$12.6 million, with the environment protection organizations The Nature Conservancy and Conservation International each providing \$1.26 million.

Six areas have been designated for protection, based on a scientific analysis to determine gaps in forest protection, says Zdenka Piskulich, director of The Nature Conservancy in Costa Rica. The swap will target forest protection in some of Costa Rica's best known biodiversity hotspots, such as Tortuguero, a system of natural waterways near the Caribbean Sea. The area surrounding the Rincón de la Vieja volcano, home to over 300 species of birds, and the Osa Peninsula, home to 2.5 percent of the world's animal and plant species, will also benefit, together with ecosystems in the Amistad region, which contains 90 percent of Costa Rica's known plant species.

Piskulich said in a press release that the funding will also allow indigenous communities, many of whom live in the Amistad region, "to pursue sustainable and economically viable livelihoods, thus improving their lives and sustaining the diverse biological resources on which they depend". (Source: SciDev.Net, 24 October 2007.)

CZECH REPUBLIC

A new season begins for Czech mushroom pickers

Twenty-six million kilograms of mushrooms – that's how much Czechs picked in the forests across the country in 2006. According to a survey carried out by the University of Agriculture, an average Czech family collected about 8 kg of mushrooms last year. It seems that mushroom-picking remains one of the most popular Czech pastimes.

One proof of the continuing popularity of mushroom-picking is the number of mushroom-devoted Web pages providing detailed information about the current situation in different areas of the Czech Republic. You can even download a so-called "myco-map" – a map indicating the occurrence of individual mushroom species in different regions. (Source: Radio Prague [Czech Republic], 17 August 2007.)



EGYPT

Wild aromatic, culinary and medicinal plants of Egypt

Egypt is characterized by a variety of climatic and environmental conditions that have helped in the distribution of numerous wild aromatic and medicinal plants around the country. These plants have been used for various therapeutic and economic purposes throughout history and are now receiving increased interest in Egypt and elsewhere.

Great efforts are being made to increase awareness of aromatic and medicinal plant products in Egypt and to strengthen national collaboration between the regional desert areas. Accordingly, the Aromatic and Medicinal Plants Department, Desert Research Center (DRC), in collaboration with FAO, invited local communities, private enterprises and other socio-economic actors involved in collecting, processing, trading, marketing and sustaining of wild

aromatic and medicinal plants to attend a stakeholders' workshop in early September 2007 to discuss the wild aromatic, culinary and medicinal plants of Egypt.

The specific objectives of the workshop were to gain a better insight into the present resource situation and utilization status of medicinal, culinary and aromatic plants in Egypt, their potential, and the problems and issues to be addressed for their sustainable development; and identify and propose priorities for action at various levels and programmes and projects to support national/regional efforts for resource conservation and sustainable development of these products in the country.

The focus of the workshop was on aromatic and medicinal plants gathered from wild sources (such as on forest and/or rangelands) in the Egyptian desert, so as to differentiate these products from those obtained as agriculture cash crops (on irrigated lands).

The workshop provided a useful overview of the specific characteristics of medicinal, culinary and aromatic plants and their resource/utilization status in Egypt. The outcome of the workshop was presented and discussed in plenary until an agreement by consensus was reached on all recommendations. At the closing session, a proposed project with the key recommendations ("Survey, sustainability and conservation of the wild aromatic and medicinal plants in Egypt: protecting their genetic resources and evaluating their economic values") was introduced by the chairman of the workshop Prof. Dr Inas Abd El Moati Tolba, Professor of Ecology and Phytochemistry, Head of the Aromatic and Medicinal Plants Department, DRC.

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FINLAND

Reindeer ecotourism

Half of our income comes from reindeer husbandry, half from reindeer tourism, says reindeer herder and entrepreneur Anssi Kiiskinen. "The ultimate reason to branch into tourism was to increase our income from reindeer, so they would



provide for us.” Kiiskinen says that the income from reindeer meat is not enough to offset the costs of the increasingly mechanized reindeer husbandry. That is why he and his uncle set up a joint reindeer tourism enterprise, the Kopara reindeer farm, on the flanks of the Pyhätunturi Fell in Lapland.

In the Kiiskinens’ business, reindeer herding and reindeer tourism complement one another. In reindeer herding, the busiest seasons are spring and autumn, and in tourism summer and winter. The meat from the herd of reindeer is served as appetizing dishes in the farm restaurant. During winter the customers are offered reindeer safaris, usually consisting of a few hours’ ride across the snowy wilderness in a reindeer-drawn sleigh. Kiiskinen has 40 reindeer trained for the purpose. In summertime, visitors can walk the “reindeer trail” which provides information about reindeer and reindeer husbandry – and feed the reindeer themselves.

The last five years have been a time of investments in the enterprise. Each year, the turnover has grown by 20 percent.

The assets of Kiiskinen’s firm consist of reindeer, ideas, enthusiasm, labour and customer contacts. But not the land. The buildings and the reindeer enclosures are built on land rented from the state-owned forestry enterprise Metsähallitus. The routes of the reindeer safaris run in commercial forests managed by Metsähallitus. This is frequently the case in northern Finland. According to Pertti Sarajärvi, Land Use and Environment Manager for Metsähallitus in eastern Lapland, tourism supports Metsähallitus’s operations. “Tourism helps to keep the area inhabited and so ensures potential employees for us.” (Source: Krista Kimmo, Pelkosenniemi, Finnish Forest Association Web site, 4 October 2007.)



INDIA

Tackling poverty through international trade of forest products: a case study of *Cassia tora*

Cassia tora, commonly known as tora, sickle senna, sickle pod, coffee pod, tovara, chakvad and foetid cassia, is a wild weed crop growing luxuriously in some parts of India, including Madhya Pradesh, during the period October to February.

A natural gelling agent that has industrial and food applications is made from the seed. The primary chemical constituents of the seed include cinnamaldehyde, gum, tannins, mannitol, coumarins and essential oils (aldehydes, eugenol and pinene); it also contains sugars, resins and mucilage, among other constituents.

Cassia tora has many uses. It is used as a natural pesticide in organic farms; roasted seeds are substituted for coffee; its powder is most popularly used in the pet food industry; it is mixed with guar gum for use in mining and other industrial applications; its seeds and leaves are used to treat skin disease; and its seeds act as a laxative. This weed could also become a reliable cheap supply of nutritious fodder for *Ctenopharyngodon idella*, a fast-growing exotic carp.

Cassia tora tea is a herbal, pure, natural, non-polluted green health beverage. In the Republic of Korea, it is believed to refresh human vision. Moreover, the tea has created a new term “coffee-tea”, because of its mysterious but very rich taste and its coffee aroma. It is made from 100 percent *Cassia tora*, with no artificial colouring and no caffeine, and could be a great substitute for coffee and sodas.

The edible part of the plant varies from 30 to 40 percent. Because of its external germicide and antiparasitic character, it has been used for treating skin diseases such as leprosy, ringworm, itching and psoriasis and also for snakebites. Galactomannans from *Cassia tora* (CT-gum), after proper processing and chemical derivatization, could function as a better and more economical thickener than locust bean gum for textiles, because of the latter’s current high price (\$18/kg) and limited availability.

Most of the CT-gum processing plants in India are located in Gujarat state because of the availability of *Cassia tora* beans in the neighbouring states, but the widespread use of these beans as

vegetables and seeds as cattle feed have been pushing up the raw material cost for the CT-gum industry. The total installed capacity in the country is 0.2 million tonnes for splits and 59 000 for powder based on *Cassia tora* seeds. The capacity utilization in the industry has been around 70 percent for the last three years.

Apart from domestic consumption, there are now significant exports of cassia powder of international standard to various countries, such as the United States of America, Australia, Germany, France, Spain, Denmark, Italy, the Netherlands, Belgium, New Zealand, the United Kingdom, Singapore and Japan. The export value of *Cassia tora* has been gradually increasing over the last five years. Detailed export data revealed that Japan and the United Kingdom receive a regular supply, while the United States market fluctuates. However, the export growth rate of *Cassia tora* clearly shows the difference between quantity and value, which leads to a low price per unit price. (Contributed by: Dr Parag Dubey, Faculty of Forest Product Marketing, Indian Institute of Forest Management, PO Box 357, Nehru Nagar, Bhopal 462003, Madhya Pradesh, India. E-mail: parag@iifm.ac.in)

Jharkhand: rich in NWFPs yet not fully tapped

Jharkhand state was formed on 15 November 2000 after its separation from Bihar state. Jharkhand literally means forest and plateau. Its total geographic area is 79 714 km², 22 716 km² of which is forest. It has 18 districts, eight of which are tribal. Tribals are an inseparable part of forests so they are given special rights and privileges.

Previously this area was very rich in forests, but over time this has changed and now most of the natural forest is in a degraded state and reduced (however, Asia’s famous Saranda Sal forest belongs to this state). State population has increased (18.82 percent from 1991 to 2001) and average population growth rate is more than the national average. This is an important factor that has contributed significantly to the conversion of forest land.

In spite of this, Jharkhand is rich in natural resources. Its main NWFPs resources can be categorized as:

- kendu leaf (*Diospyros melanoxylon*), used as a smoking stick, locally called *bidi*;
- sal seed, from which oil is extracted;

- *Terminalia bellerica*, locally called *harnat*, used in medicine; and
- *Madhuca indica*: its seed is used for extraction of oil, its flower in the preparation of local wine and its leaf in the preparation of a dish locally called *donna patta*.

Realizing the importance and potential of NWFPs, in February 2002 Jharkhand's Ministry of Environment formed JSVWN Limited, which is the sole agency for the authorized collection and marketing of NWFPs. JSVWN manages its NWFP collection work through two circles, six divisions and 45 regional offices. In 2002/2003, the net profit earned by JSVWN was Rs773.345 lakhs, with Rs2 051.196 being shared among the people engaged in NWFP collection, and it was able to generate 31.56 lakh/workdays.

The collection of NWFPs is time-consuming work and delays in collection and marketing cause losses. Kendu leaf and sal seed collection starts in May and continues up to the first week of June. During this period poor rural and tribal people do not have any work in their agriculture fields or elsewhere and so JSVWN provides them with employment. In this way, they earn money (kendu leaf collection generates 31–32 lakh/workdays) and also eliminate the intermediaries. Therefore, NWFPs can have enormous scope in the state and are both a good source of revenue for the state government and a source of income for rural and tribal people.

The state has another opportunity to strengthen the NWFP area by raising bamboo and medicinal plants, both of which could generate income and employment for the state. (Contributed by: S.K. Singh, Forest Survey of India, Kaulagarh Road, PO-IPE, Dehra Dun 248195, Uttaranchal, India. E-mail: sk_singh24800@yahoo.com)

Medicinal and aromatic plants (MAP) certification – its importance and relevance in an Indian background

The importance of good collection practices, storage and maintenance in medicinal plants has been felt from time immemorial. The rich traditional Ayurvedic heritage and folklore practices in India reflect the understanding of the ancients regarding the sustainable utilization of natural resources. However, with the massive expansion of the medicinal plant business as well as changing socio-economic conditions, rapid depletion of natural resources and diverse sociocultural

practices, it has been felt that there should be national-level guidelines for wild collection of medicinal plants. These guidelines should be in parity with international norms and regulations as well as satisfying Indian demands.

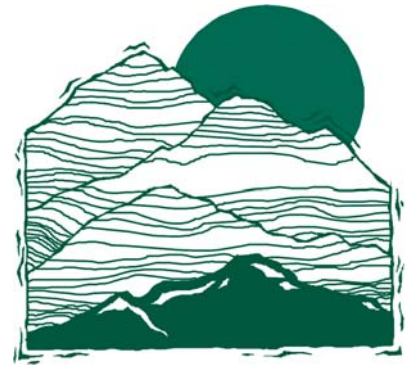
In view of these increasing demands, the International Centre for Community Forestry (ICCF) at the Indian Institute of Forest Management (IIFM) has started a MAP certification project sponsored by the National Medicinal Plant Board (NMPB). This project is designed to:

- evaluate the potential for MAP certification in an Indian context;
- create awareness among gatherers, foresters and other stakeholders about MAP certification and its implication for sustainable management of wild MAP resources;
- document and analyse current practices in the MAP sector in the light of certification requirements;
- develop national-level generic standards for MAP certification, with special emphasis on raw material collection to marketing; and
- establish demonstration plots to test the sustainable collection concepts through a participatory approach and information dissemination.

Four states were selected for the pilot study (Chhattisgarh, Madhya Pradesh, Orissa and Uttarakhand) based on their MAP resource richness, livelihood dependence and available institutional framework. Important steps have already been taken for the implementation of the project, e.g. field surveys, interviews with multiple stakeholders and local- and regional-level consultations/meetings with social organizations. A draft standard has been prepared in the light of current internationally available standards, as well as socio-economic parameters relevant to the Indian scenario. The parameters/ statements of the draft standard are under evaluation with state existing practices. Thrust areas of the study include legal and policy framework, wild area conservation and sustainable management, responsible collection practices, economic development and benefit sharing.

A comparative analysis of the available information based on the above-mentioned issues reflects prominent differences in policy-level interventions and social understanding of MAP resource management, as well as conservation measures. Further study and research are taking place to make the draft more flexible

and acceptable to the diverse MAP sectors in India. (Contributed by: Dr Prodyut Bhattacharya, International Centre for Community Forestry (ICCF), Indian Institute of Forest Management (IIFM), PO Box 357, Nehru Nagar, Bhopal 462003, Madhya Pradesh, India. Fax: +91-755-2772878; e-mail: prodyut@iifm.ac.in)



Medicinal plants of the Kashmir Himalayas

Medicinal plants have assumed a significant importance in the recent past owing to the growing appreciation of human health care through herbal medicines. The Kashmir Himalayas house a diverse variety of plants of medicinal value. A recent paper (*Traditional medicine: some plants of the Kashmir Himalayas*) by Gulzar Ahmad Sheergojri, Nelofar Lolapuri and Efath Shahnaz presents the results of a survey carried out in 2006 and discusses some of the medicinal plants identified and their importance in traditional medicine.

The Kashmir Himalayas – the northwestern region of the Himalayas – represent a rich repository of diverse plant species that have been used by the locals to treat their ailments since time immemorial. They have also served as an important source of raw material for various pharmaceutical units. About 28 percent of all the plants on Earth have been used for curing various human ailments. Nearly 40 percent of the known medicinal plants of the Kashmir Himalayas are used in the Indian pharmaceutical industry alone. Global imports of medicinal plants increased from US\$335 million in 1976 to \$551 million in 1980. However, non-judicious exploitation, habitat destruction and the absence of cultivation programmes have put a tremendous pressure on these green dispensaries, especially in developing and underdeveloped countries. Furthermore,

poor infrastructure and scarcity of funds in developing states such as Jammu and Kashmir have made these plants vulnerable to biopiracy.

Consequently, the authors carried out a survey to underline the importance of some of the plants of the Kashmir Himalayas in traditional medicine so that adequate measures may be taken to save them. Information was collected on many medicinal plants and their traditional uses were documented. The study revealed that these herbal medicines provide remedies for a significant number of ailments, especially in remote areas where health care facilities are meagre. A comprehensive strategy for the conservation and development of these medicines would not only widen the forest-based economy, but also provide important raw materials for immunomodulation. *(Contributed by: Gulzar Ahmad Sheergojri, M.Sc. (Agriculture), Sheri Kashmir University of Agriculture Sciences and Technology, R/O Inder Pulwama, J & K, India 192301. E-mail: mukhtar555@gmail.com)*



KENYA

KEFRI wants ban on bamboo lifted

The Kenya Forestry Research Institute (KEFRI) wants a ban on bamboo harvesting lifted to enable farmers to enter the multibillion Kenyan shilling global bamboo trade currently dominated by China, Japan and Thailand. Samson Mogire, a bamboo product expert at KEFRI, said they had sent fact finding missions to the Asian nations to learn methods of sustainable exploitation of the forests.

The ban on bamboo harvesting was imposed in 1989 by former President Moi and its use later restricted to select public institutions. KEFRI said the fear of overexploitation that led to the imposition of the ban no longer held, since the plant

had rejuvenated into extensive bamboo forest cover. To mitigate against possible overexploitation, KEFRI is teaching farmers how to propagate the plant in central Kenya, with financing from the United Nations Development Programme.

A bamboo tree takes an average of three years to mature and is a good protector of water catchment areas. To increase the commercial value of the tree, KEFRI is training artisans on the use of bamboo in the making of furniture and office fittings.

Locally, the tree does well in the Aberdares, Olengurueni, Molo, Western Province and parts of the coast.

Despite the promising prospects, exploitation of bamboo still faces a number of hurdles, including lack of awareness of its potential among local communities. *(Source: Business Daily Africa [Kenya], 26 July 2007.)*

Tribes of honey hunters fights extinction

Kiangwe. The marginalization of Kenya's Boni tribe, known for their unique tradition of whistling to birds that guide them to honey, has raised fears that their mellifluous song will soon be silenced. With little or no access to health care and other resources, the Boni's ranks have steadily dwindled and the tribe is now on the verge of extinction.

The semi-nomadic Hamitic tribe nestled between the Indian Ocean and the Somali border in northeastern Kenya's Lamu district numbers barely 4 000, compared with 25 000 half a century ago, according to the Organization for the Development of Lamu Communities (ODLC).

"We depend entirely on nature for food and medicine," said Nur Mohamed, a Boni. The central ingredient in the Boni's diet is honey, which they track down with the help of birds – known by locals as *mirsi* and commonly described as honey guides – who feed on wax and bee larvae. The peculiar species has been scientifically proven to lead animals and humans to bee nests. On a good day, the *mirsi* will noisily alert the Boni by landing on a tree concealing honey. The Boni then hack at the tree trunk and smoke it up to numb the bees before retrieving the bounty.

Members of the hunter/gatherer tribe also eat wild fruits, roots and a variety of game – which they say has put them at odds with wildlife officials. "Nowadays, I hunt secretly and I eat secretly. Otherwise, the Kenya Wildlife Service (KWS) will beat us and arrest us," said Sadi Jumaa, who

wears a belt made of baobab bark. However, Mohamed Ali Baddi, who heads a local development organization, says "Hunting is a way of life. For them, it is not poaching. But for the KWS, they are poachers."

Some of the Boni's other traditional practices are a far cry from modern life, for better or worse. "We know the herbs to treat malaria, stomach aches and snakebites. But some of the herbs are too strong for children. Sometimes they die," Mohamed says. The nearest hospital to his village of Kiangwe is several hours' walk away.

While they are keen to preserve their ancestral way of life, the Boni feel ignored by the Kenyan Government, as do other tribes of honey hunters across the country. Kiangwe is a small village of 360 inhabitants living in mud huts with no dispensary, no road, no running water and no shops. Residents say travelling vendors pass through on average twice yearly. "Maybe the government should come up with a policy for a Boni reserve so that they can preserve their culture," said Omar Aliyoo, one of two Boni tribesmen to sit on the local municipal council. "Our way of life is disappearing. There is a danger that the Boni people will disappear." *(Source: Independent Online [South Africa], 10 July 2007.)*

LEBANON

Illegal imports undercut local pine nuts

Chouf. Lebanon's pine nut cultivators denounced the government's lack of interest in putting an end to the illegal importing of pine nuts, saying they face threats to their businesses as a result of the invasion of Turkish and Chinese pine seeds into the local market. Consequently, the problems of cultivators eased over the last three years following the government's decision to halt imports in an attempt to cultivate the local market. The Syndicate of Pine Nut Cultivators, however, recently discovered that several dealers have been illegally given licences to import the nuts. Cultivators in the Chouf, Jezzine, Metn and Aley are therefore facing a problem thought solved just a few years back.

"The cultivation of pine trees is a really costly business," said cultivator Abdullah Hassan. "The cost of the harvest is very high and therefore the price of pine seeds is relatively high. However, with the market

flooded with imported pine seeds, our business might collapse at any moment.”

Pine trees are abundant across Lebanon and have also long been considered as a tourist attraction and an economic resource. However, cultivators fear pine trees will not be cared for as much as before because of the smuggling, endangering pine tree woods in the country.

“We need to find a solution to the current situation by forbidding the illegal import of pine seeds, especially since pine seeds are a basic ingredient of Arab sweets,” said Ahmad Awar, a cultivator. “But unfortunately the owners of such sweet shops do not care about quality and prefer using the cheaper imported seeds instead of the finely harvested Lebanese pine seeds.” (*Source: Daily Star* [Lebanon], 5 July 2007.)

LIBERIA

Promoting ecotourism

Conservation International (CI), an NGO working in Liberia since 2002, has developed a scheme to bring tourists into the country. Russell A. Mittermeier, President of CI, has been discussing with top government officials on how the forests of Liberia can be conserved and used to make a profit for the country. Mr Mittermeier said that Liberia’s forests are in a “hotspot”, i.e. “an area where most of the animal species that live there cannot be found anywhere in the world. This means it is the most important spot in the West African region”.

He said an ecotourist would be willing to pay up to US\$500 to visit Liberia’s natural wildlife and see at first hand how these animals live in the wild. (*Source: The Inquirer* [Monrovia], 23 August 2007.)

MADAGASCAR

Beekeeping, poverty alleviation and forest conservation in Imadiala

Beekeeping is an important source of livelihood in Imadiala, an eastern subdistrict of Ambositra. However, in spite of the efforts made by beekeepers and numerous organizations to improve beekeeping in the region, the negative effect of deforestation on beekeepers’ activities is increasing.

Approximately 90 percent of Madagascar’s flora and fauna is endemic. Eleven million hectares (20 percent of Madagascar’s

surface area) are forest and 350 000 ha are *Eucalyptus* species and pine plantations. However, loss of species, including the decrease of honey bee populations on the island, is closely related to the loss of forests.

In September 2003, President Marc Ravalomanana committed to increasing protected areas in Madagascar from 1.7 million to 6 million ha by 2008. Now Madagascar is attempting to reduce poverty and increase the areas under conservation. Beekeeping has the potential to play an important role in these processes, both for poverty alleviation and the conservation of natural environments.

The remaining natural resources and the willingness of beekeepers to improve their activities make beekeeping possible on a large scale in Ambositra. However, Imadiala, which is the most advantaged beekeeping area in the whole region, has suffered serious deforestation by felling trees to make planks, charcoal and sculptures or to make space for cultivation, causing severe negative effects for beekeeping. This process is ongoing and forest degradation remains one of the major problems for beekeeping, honey hunting and swarm catching in Imadiala. (*Source: Bees for Development Journal*, Issue 84, September 2007.)



MALAWI

Miombo woodlands

In her recent short essay, *Miombo woodlands and rural livelihoods in Malawi*, Janet Lowore cites a study of 36 farming households which revealed that during a period of 25 months, local people collected 37 different species of leaf vegetables, two species of root vegetables, 21 of fruit, 23 of mushroom and 14 of caterpillar.

Between 1946 and 1996, Malawi lost 2.5 million ha of woodland, most of which was converted into farmland. The loss of woodland means many things for local

people. Women must walk further and spend more time searching for firewood. Households have to buy wood for construction, and as a substitute for tree fibres they must buy sisal or use the wire from old car tyres. Without the forest, they must also go without wild game, caterpillars, medicinal plants, fruits and many other things.

Lowore stresses that it is impossible to come up with a simple blueprint of recommendations for improving dry-forest management. However, her study confirms that Malawi’s miombo woodlands are vitally important, both as a resource that satisfies the subsistence needs of the rural poor, and for the many environmental benefits that they provide. (*Source: Building on success*. Center for International Forestry Research (CIFOR) Annual Report 2006. http://www.cifor.cgiar.org/publications/pdf_files/ARReports/AR2006.pdf)

MALAYSIA

Malaysia is taking steps to ensure that trade in *gaharu* is sustainable

Gaharu, the aromatic resin from *Aquilaria* trees, was previously regarded as worthless woodchips but authorities are fast realizing its value and are tightening the relevant regulations. States in Peninsular Malaysia have been told to keep a close eye on extraction of the heartwood by emphasizing enforcement of Section 15 of the National Forestry Act 1984, which requires any removal of the valuable product to be accompanied by a removal pass.

The latest move by Peninsular Malaysia Forestry Department is to develop a uniform grading system for the fragrant resin. Deputy director-general (planning and development) Datuk Dahlan Taha says the absence of a standardized grade has hampered administration and regulation of this NTFP. “The 10 percent royalty payment is currently based on weight and not on quality. The government is losing out on revenue collection. Hence, we organized a workshop in June and produced a grading system. We are recommending four grades: A Super, A, B and C,” says Dahlan.

He is also encouraging all states to pay attention to this NWFP, which is coveted by both local and foreign poachers. He claims that greater awareness has led to better protection of the heartwood against illegal collection, as indicated by zero arrests in the last two years.

The department is also directing replanting of *gaharu* species in logged production forests. So far, 215 ha have been planted. The oldest is a four-year-old plot in Kelantan. The lure of the highly priced resin has also promoted commercial planting of the species as well as research into artificial inoculation of the stem. In the wild, a *gaharu* tree produces the resin as a biological response to contain infection from bacteria, fungi and pathogens. The resin covers wounded areas and blackens the whitish heartwood to produce *gaharu*.

Under the Ninth Malaysia Plan, *gaharu* is being introduced as a potential income-generating crop to be planted alongside vegetable farms in agroforestry programmes. Meanwhile, the government is capping export of *gaharu*, internationally known as agarwood, at 200 tonnes this year.

In 2004, all eight *Aquilaria* species and a species of *Gyrinops* that also produces aromatic resins were included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to ensure survival of the species in the wild. A listing in Appendix II subjects trade in the species to the CITES permit system that covers export, import and re-export. However, oil products from *gaharu* still escape CITES scrutiny because of its exclusion from the Customs export prohibition order. The Customs and Excise Department is in the final stage of amending the order to control the export of processed *gaharu* in oil form.

As high-grade agarwood becomes scarce, local collectors are resorting to processing lower-grade woodchips into oil to increase their profit margins. *Gaharu* distillation plants have sprouted in several parts of the country. Although states in the peninsula are trying to monitor the amount of extraction through its licensing scheme, it is believed that various amounts are slipping through the cracks and these unspecified volumes are turned into oil products that elude the CITES permit and the government taxation system. Hence, accuracy of the official extraction volume is doubtful.

While the export loophole is likely to be plugged soon, a similar effort was not made simultaneously to address the issue of import. The Customs import prohibition order does not cover *gaharu* oil products. Therefore, the Malaysian Timber Industry Board (MTIB) has not issued any CITES import or re-export permits to date. (Source: *Malaysia Star*, 31 July 2007.)



MAURITANIE

Les PFNL en Mauritanie

La Mauritanie pays désertique membre du Sahel et Maghreb dispose d'une couverture végétale non négligeable sous forme de savanes arbustives ou de savanes herbeuses.

Les principaux produits forestiers non ligneux (PFNL) de la Mauritanie sont les plantes alimentaires (par exemple *Adansonia digitata* et *Zyzyphus mauritiana*), les plantes fourragères (*Acacia* spp.), les gommés (*Acacia senegal*) et les plantes médicinales (par exemple *Acacia albida*, *Balanites aegyptiaca* et *Salvadora persica*). Les PFNL de moindre importance au niveau socioéconomique sont les colorants (*Acacia seyal*, *Anogeissus leiocarpus*), les tannins (*Acacia nilotica*), les produits cosmétiques, les outils et les résines.

Les PFNL ont une importance particulière en Mauritanie dans la mesure où ils contribuent à la nourriture humaine et au fourrage pour les animaux. Ils sont également utilisés pour des soins par les tradipraticiens, dans la cosmétologie, dans la construction et chez les artisans mais également comme boisson. Parmi les PFNL en Mauritanie, seule la gomme arabique fait l'objet d'importantes activités commerciales structurées.

Nourriture: Les arbres produisant des fruits comestibles incluent *Boscia senegalensis*, *Balanites aegyptiaca*, *Adansonia digitata*, *Zyzyphus mauritiana* et *Sclerocarya birrea*. Les fruits de *Sclerocarya birrea* font l'objet d'un commerce local. La pulpe des fruits, riche en alcool, est fermentée et transformée en bière. Du fruit, on peut faire des jus et des confitures. L'amande du noyau de *Sclerocarya birrea* contient des matières grasses et beaucoup de vitamine C. Elle donne aussi une huile comestible. Les graines de *Boscia senegalensis* donnent une excellente farine pour la fabrication des repas. En outre, on consomme l'albumen des

graines et les feuilles d'*Adansonia digitata*.

Fourrage: les plantes fourragères importantes sont *Acacia albida*, *Acacia raddiana*, *Acacia nilotica*, *Acacia senegal*, *Acacia seyal*, *Boscia senegalensis*, *Balanites aegyptiaca* et *Prosopis juliflora*. Ces plantes fournissent des feuilles, de jeunes rameaux, des gousses et l'écorce qui constituent des fourrages pour les moutons, les chèvres, les dromadaires et les chameaux.

Médecine: les écorces, les graines, les feuilles, les racines, les fruits et les branches d'*Adansonia digitata*, *Acacia albida*, *Acacia nilotica*, *Boscia senegalensis*, *Balanites aegyptiaca*, *Anogeissus leiocarpus*, *Salvadora persica*, *Commiphora africana*, *Prosopis juliflora* et de *Sclerocarya birrea* sont utilisés pour le traitement des maladies variées telles que le rhume, la grippe, les maux de dents, les hémorroïdes, les douleurs rhumatismales, l'impuissance sexuelle, le diabète, l'asthme et autres complications respiratoires, la fièvre, la diarrhée, la fatigue générale, etc.

Parfums et cosmétiques: les racines de *Balanites aegyptiaca* rentrent dans la fabrication du savon.

Colorants et tannins: les fruits d'*Acacia nilotica* constituent le principal produit de tannage chez les cordonniers. L'écorce d'*Acacia seyal* fournit une teinture rouge qui sert à teindre les vêtements. Les feuilles et l'écorce d'*Anogeissus leiocarpus* fournissent une teinture jaune pour les peaux et les tissus.

Ustensiles, artisanat et matériaux de construction: l'écorce du tronc d'*Adansonia digitata* fournit également des fibres utilisées pour tisser les nattes et confectionner les cordes. Le tégument d'*Acacia senegal* est utilisé pour la fabrication des cordes. Le macéré du fruit de *Balanites aegyptiaca* est ichtyotoxique (poison à poisson).

Exsudats: la gomme, exsudant du tronc d'*Acacia nilotica*, sert à fabriquer une boisson rafraîchissante. La gomme arabique est fournie par l'*Acacia senegal*. L'exsudation est causée par des fentes dues à la sécheresse et des blessures. Quatre-vingt-dix pour cent de la production de la gomme arabique est commercialisée. L'*Acacia seyal* est une gomme arabique de qualité inférieure. La résine de *Commiphora africana* est utilisée comme encens, parfum et insecticide.

Malgré le rôle important que jouent les PFNL en Mauritanie, la filière économique des PFNL généralement très confinée dans l'informel demeure peu développée. La filière économique des PFNL nécessite une

valorisation et un développement. L'Etat doit, en collaboration avec la FAO et les autres partenaires de développement, sensibiliser les populations sur l'importance des produits et surtout des coopératives féminines en milieu rural.

En effet la promotion, la gestion et le développement des PFNL pourraient permettre de réaliser une importante activité génératrice de revenus pour les femmes rurales. Cela pourrait aider à la réalisation de certains objectifs clés des OMD: réduire l'extrême pauvreté et la faim, promouvoir le genre et le développement et protéger l'environnement. [Source: *Gestion participative et développement des produits forestiers non ligneux comme moyen de réduction de la pauvreté des femmes rurales: cas du Maghreb et du Sahel* par Mme Hawa War, Volontaire, FAO, Le Caire.]

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"Riches of the forest: fruits, remedies and handicrafts in Latin America"

MEXICO

Mexican palm fronds for the United States floral industry: opportunities and threats

A recent study on the camedora palm (*Chamaedorea elegans*, *C. concolor*, *C. oblongata*) was undertaken in two indigenous Chinantec communities located in the river basin of Papaloapan, on the Atlantic slope of the Sierra Norte, Oaxaca, situated some 300 km from the city of Oaxaca. Both communities are situated in isolated mountainous locations, with limited access to the nearest road.

The camedora palm, also known as *xate*, represents a set of species that belongs to the genus *Chamaedorea* and dominates the herbaceous field layer of montane forests. Access to the resource is relatively equitable, since it is largely collected from

communal land with free access. However, over the last ten years, distances to harvest sites have increased to three hours' walk because of land conversion for maize and coffee, and as a result of overexploitation of the palm.

The species reproduces easily via seed, requiring little light and possessing a high tolerance for humidity. For these reasons, several communities in the study area and other regions – Veracruz, Chiapas and San Luis Potosí – have begun to domesticate via understorey cultivation. When leaf fertilizer is applied in plantations, each plant can be harvested every three months. In the wild, peak harvesting, between April and October, follows the rains, when the quality and quantity are most readily available for two to three cuts. Some camedora palm species are on the Mexican protected species list and thus require an extraction permit. However, because of the cost involved in acquiring a permit, some communities cut leaves illegally and many have established small plantations.

The palm leaves are used fresh in floristry and have been exported from the humid tropical regions of Mexico and Central America since the 1940s. Mexico is the leading world exporter of the leaves and seeds of different species of camedora palm, predominantly to the United States. It is estimated that the global production of this foliage currently meets only one-third of the international demand.

In Mexico, the leaves are used in floristry, wreaths and bouquets; as traditional adornments for Easter and Palm Sunday; as a fresh base for exhibiting produce in supermarkets; and as garden plants. The leaves are highly sought after because once cut, they remain green for up to three weeks.

Market access for communities depends largely on production capacity: commercial intermediaries are attracted to areas where there is sufficient volume to make trade worthwhile. Many families have to overcome several obstacles to access regional trade centres, including low-quality roads and lack of access for vehicles. Monte Tinta overcame this barrier by designating one community member to pool together the leaves and transport them, by donkey, to the road on the trader's route. In return the trader pays on time and compensates for the costs of accidents during collection.

Because of the market demand for palm leaves, retailers need to work with a large

number of community suppliers. The viability of this commercial activity and the ability to obtain significant profits are a result of traders sourcing from numerous producer communities. In Chinantla, as in other regions of Mexico, six different actors are involved in the commercialization of palm leaves. Men collect the foliage and women grade it, preparing bushels of 140 leaves that sell for up to US\$1.30 to a local stockist. A second actor transports the product to a regional wholesaler, who manages a centre where he accumulates, grades, packs and sells the product to wholesalers in Mexico City. Leaves are sold to the Mexican consumer at 12 leaves/US\$1, and sold on to a foreign buyer, who retails them to the United States consumer at six leaves/US\$1.

There are very few companies dedicated to the export of palm in Mexico, owing to the existence of a monopoly; the national market is concentrated in the hands of a single successful entrepreneur who had sufficient capital to invest in refrigerated transport and storage facilities. This individual is the sole representative of the North American company that imports camedora. The existence of a single company buying leaves makes communities somewhat vulnerable. This single buyer supplies half of the product from his own plantation. While this is important to maintain the value chain throughout the year, it can also pose a threat to wild palm collectors who are restricted mostly to cutting only a few months in the year. Even though there is small-scale domestication of camedora palm in southern Mexico, these poorly organized communities are finding it difficult to compete with the industrial-scale plantations being established in the United States – with seed exported from the Chinantla region. [Source: extracted from Marshall, E., Schreckenberg, K. & Newton, A.C., eds. 2006. *Commercialization of non-timber forest products: factors influencing success. Lessons learned from Mexico and Bolivia and policy implications for decision-makers*. Cambridge, United Kingdom, UNEP World Conservation Monitoring Centre.]

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 MOROCCO

300 ha of argan trees to be reforested in the south of Morocco

Essaouira (south). Some 300 ha of argan trees will be reforested in the south of Morocco, under a cooperation agreement signed in 2002 between Midi Pyrenees regions and the region of Marrakech-Tensift-El Haouz, revealed the Mohammed V Foundation for Research and Argan Tree Preservation. The foundation, which held its third general assembly, underlined achievements, mainly those pertaining to the notion of the geographic indication, which represents an important step in the process of the protection of the argan tree.

The foundation's director-general, Ms Katim Alaoui, noted that the agreement also provides for the upgrading and marketing of argan oil by women's cooperatives.

This project aims at saving firewood through the use of solar energy, with project officials estimating that the setting up of 500 solar ovens will result in avoiding a loss of 50 to 100 ha of argan trees per year.

Set up in May 2004, the foundation aims at guaranteeing a legal protection from argan tree exploitation, promoting and protecting natural equilibrium, improving the standard of living of the population working on argan trees and guaranteeing the quality of its products.

A forest, fruit and fodder tree, the argan tree covers currently some 870 000 ha, which is around 10 percent of Morocco's forest areas. [Source: *Maghreb Arabe Presse* [Morocco], 11 June 2007.]


 NICARAGUA

Elementos de la legislación nacional sobre Productos Forestales no Madereros

En Nicaragua, no está muy difundido el manejo y aprovechamiento de los productos forestales no madereros (PFNM). Sin embargo, existe el aprovechamiento de estos recursos en algunos departamentos como el

de río San Juan, Jinotega y las Regiones Autónomas del Atlántico.

No se cuenta con suficiente información sobre volúmenes y valor comercializado de estos productos; se conoce su uso a nivel artesanal, en comunidades cercanas a los bosques o en zonas urbanas, y en general son comercializados de manera informal. La actividad productiva de estos productos ha sido de carácter extractiva y los volúmenes comerciales no han representado un flujo comercial de importancia. En relación con su aprovechamiento, la Ley General del Medio Ambiente y los Recursos Naturales N° 217/1996 establece que «para el uso y aprovechamiento de las áreas de producción forestal de productos maderables y no maderables, éstas deberán ser sometidas a manejo forestal con base sostenible, con la aplicación de métodos y tecnologías apropiadas que garanticen un rendimiento óptimo» (Art. 100).

Por otro lado, a través del Acuerdo IRENA (Instituto Nicaragüense de Recursos Naturales y del Ambiente) del 1990, se creó el Centro de mejoramiento genético y banco de semillas forestales cuyo objetivos principales son: la protección de áreas forestales de interés científico, el mejoramiento genético de especies de importancia económica y científica a través de la instalación de viveros, huertos semilleros o clonales, tanto de latifoliados como de coníferas, la recolección de semillas para suministrar material genético óptimo para los proyectos de reforestación, así como para el manejo sostenido de los bosques.

El Centro será el responsable de garantizar la calidad y pureza de las semillas forestales exportadas e importadas a Nicaragua a través de controles fitosanitarios (Art. 1).

El Centro que goza de autonomía financiera, estará sujeto al control de una auditoría externa nombrada por el IRENA (Art. 5) quien nombra también a su director (Art. 2).

En fin, el Decreto 50/2001 sobre la política de desarrollo forestal de Nicaragua, actualmente modificado y en fase de aprobación por parte de la Comisión Nacional Forestal (CONAFOR), puntualiza que «se promoverá la diversificación de mercados y productos, incluyendo mercados a futuro, para mayor número de bienes y servicios provenientes del bosque y el apoyo en la inserción en los mercados internacionales. Además para ampliar y fortalecer los mercados, se promoverá a través de incentivos el sometimiento

voluntario de bosques bajo manejo, a la certificación forestal para garantizar un manejo eficiente del mismo» (Art. 4). (Aportación hecha por Francesca Felicani Robles, Consultora legal, FAO, Via delle Terme di Caracalla, Roma 00153, Italia. Correo electrónico: Francesca.felicanirobles@fao.org)

 PAKISTAN

Indigenous use of non-timber forest products in the Kalash valley, Chitral

The Kalash valley is located in the remote southwestern part of Chitral, an area of unique cultural and biological diversity. The natural forest of the area mainly consists of

A variety of mushrooms/morels are found in the Kalash valley, including *Morchella esculenta*, *M. vulgaris*, *M. deliciosa* and other morels such as oyster. Their local names are *quchi*, *brangalu* and *shunti*. Local people often hide the place where they pick mushrooms. The Kalash community have their own indigenous knowledge for mushroom collection; for example, it is believed that mushrooms often appear under various trees such as *Juglans regia* and *Pinus wallichiana*. Morels are collected mostly for marketing purposes, but are sometimes also used as a traditional medicine or flavouring agent.



Morel collectors are usually poor villagers who collect morels as their part-time activity besides farming and livestock keeping. The collectors – 27 percent women, 33 percent men and 40 percent children – collect morels during spring and early summer, from March to July, and sell them in the local market to earn a livelihood. Morel collection is a hectic job and requires a lot of physical exertion, devotion and passion. Sometimes the collectors spend days in the forest collecting morels. In most cases, they sell the morels in fresh form to the local Pathan dealers or in the markets of Chitral after drying the morels.

Morchella fetch high prices and thus play an important role in the economy of the Kalash valley.

pine (*Pinus wallichiana*), chhgoza (*Pinus gerardiana*), deodar (*Cedrus deodara*) and broadleaf species such as oak (*Quercus incana*).

The forest of the whole Chitral district (including the Kalash valley) is estimated to be 41 949 ha and is mainly used for timber extraction. The natural forest is under the control of the Chitral Forest Department but villagers have certain rights. Up to 25 000 tonnes of forest wood are used annually as fuelwood. Almost 13 percent of the population use the forest for generating their first cash. Additionally 80 percent of local people are, in one way or the other, dependent on NTFPs.

Some of the important NTFPs in the Kalash valley are wild mushrooms (*Morchella esculenta*, *M. vulgaris*, *M. deliciosa*), honey (*Apis cerana*), medicinal plants (*Ferula narthex*, *Paeonia emodi*, *Inula recemosa*), pine nuts (*Pinus gerardiana*) and silk cocoons.

The people of this remote area rely on their indigenous knowledge to collect, pack and dry these NTFPs and most of the local people are dependent on the products for income generation.

A recent research paper by Ajaz Ahmed investigated the situation of NWFPs and suggested future guidelines for proper planning and management.

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PARAGUAY

Sweet herb may be green gold for Paraguay

Paraguay is hoping a small herb that is not trafficked, addictive, or even fattening,

could prove to be the real thing that the food industry has been waiting for.

Stevia rebaudiana bertonii has been used for centuries by the Guarani native people to sweeten their drinks, since it is 300 times sweeter than sugar with none of the calories. Now the 60-cm high shrub has caught the eye of Coca-Cola, and its small Latin American home is hoping the cash tills will soon start ringing.

Coca-Cola and Cargill, one of the top United States food companies, recently



unveiled plans to make a *stevia*-based sweetener under the trade name Rebiana.

And even though the herb is not yet authorized for consumption in the United States and has only a limited use in the European Union, it is already popular in Asia where China has planted thousands of hectares of rural land with the shrub.

"World demand is enormous," said Nelson Gonzalez, head of the Stevia Chamber of Commerce, a trade group of producers under the aegis of Paraguay's Ministry of Industry. "But the sugar lobby wants to stop the importation of this natural, safe, revolutionary product."

Studies at the medical school at the University of Asunción found that *stevia* had a long list of beneficial properties, being an antioxidant, anti-inflammatory and an antibacterial agent useful in the battle against diabetes, high blood pressure and tooth decay. But it is finding it hard to shake off fears over carcinogens which have dogged its sister, chemically manufactured sweeteners, saccharin and aspartame.

In ten years, plantations of *stevia*, which is native to northwest Paraguay, have grown from 350 to 1 500 ha. Officials hope to increase this figure tenfold over the next five years through cloning, which is more effective than planting the seeds. However, the largest producer of *stevia* is not Paraguay, but China, which has 20 000 ha under cultivation.

Paraguay's *stevia* pioneer, the company Emporio Guarani, grows the plant and extracts the sweetener in its plant in Luque, 10 km outside Asunción, and is not worried by China's influence on the market. "The land of *stevia* is right here," said manager Maria Teresa Aguilera, whose phone has not stopped ringing with calls from companies around the globe, following Coca-Cola's announcement. "Thanks to our climate, we can raise three crops while China grows one," she said.

Besides its claims to safety, *stevia* has another advantage over aspartame: it is stable to 200°C so it can be baked.

A kilogram of *stevia* crystals, extracted from 12 kg of leaf, is worth US\$40 to \$100, depending on its purity.

Knowing that Paraguay, half of whose six million inhabitants live in poverty, may be sitting on a gold mine, authorities are now launching a bid to win international recognition as the *stevia* plant's country of origin. [Source: Independent Online [South Africa], 18 July 2007.]

PERU

Maca (*Lepidium peruvianum*) benefits United States consumers and Peruvian economy

Nine years after medicine hunter Chris Kilham took an exploratory trek to the Peruvian highlands, a treasured traditional superfood called *maca* has entered the United States consumer mass market. Now Wal-Mart has placed Medicine Hunter Maca Stimulant® on the shelves of 3 480 stores, coast to coast.

According to ethnobotanist Kilham, who is Explorer in Residence at the University of Massachusetts, "*Maca* is one of the greatest superfoods of all time and makes people feel very good very quickly."

Two thousand years ago, the legendary *maca* root was valued as gold and traded as currency in the ancient Incan culture. History books record Incan warriors eating it to attain fearsome prowess in battle.

A member of the mustard family, the plant grows under the most inhospitable conditions, in poor "moonscape" soil where the air is thin and the sunlight and wind are extremely harsh. Local harvesters today grow *maca* for its medicinal root, which they use as a staple in their diet and export worldwide as a mega-energy food and potent sex booster for both men and women.

In addition to the United States consumer, the beneficiaries of Kilham's work are the Peruvian harvesters who can now earn a decent wage from cultivating *maca*, which is a better option than the gruelling, dangerous and low-paying toil of mining, their only other source of income. [Source: ENN News, 27 September 2007.]

PHILIPPINES

Establishment of a rattan plantation

A Japan-based international agency has provided a financial grant to help underwrite the establishment of a rattan plantation in Mindanao. The plantation will be set up at a government experimental forest in Kidapawan City, North Cotabato, with the support of the International Tropical Timber Organization (ITTO). The grant was provided by ITTO to the Department of Environment and Natural Resources-Ecosystem Research and Development Services (DENR-ERDS) in Region 12 (central Mindanao).

Dr Bighani Manipula, acting regional technical director for research of DENR-

Region 12, said that the project will showcase the rattan seedling technology developed by the research sector and will employ the community-based approach in managing the plantation. Immediate stakeholders will be tapped as partners in developing, managing and protecting the plantation instead of just treating them as "resource users and beneficiaries", Manipula said.

As an initial activity, the project management team recently met the local community to brief them on the project. The stakeholders will also be taught about rattan production – from seed harvesting to nursery management and plantation development. The project is expected to enhance and rehabilitate the 30-ha teak and rubber plantation that DENR-ERDS set up in 1985. [Source: *The Philippine Star*, 5 October 2007.]



"Riches of the forest: fruits, remedies and handicrafts in Latin America"

The Bulacan Province aggressively promotes bamboo farming

The Bulacan government has launched an aggressive campaign to boost the bamboo industry, especially targeting regions along the rivers.

Global demand for bamboo has suddenly surged as its fibres can now be transformed into cloth. Cultivating bamboo in test tubes not only yields large amounts but has also been perceived as an easier method. Researchers have developed innovative means of cultivation that result in swift production of the plant. Bamboo has generated curiosity in the textile industry; its fibre has been recognized as both durable and soft and can also be produced at low cost.

Not only this, bamboo is one of the most environmentally friendly products. Experts say that bamboo releases almost 35 percent oxygen and helps purify the air. Plantations on riverbanks also help control floods.

Recognizing all the benefits, the government is encouraging local people to indulge in bamboo farming. This will also provide livelihoods in the domestic handicraft industry. [Source: *Fibre2fashion.com* [India], 29 August 2007.]

REPUBLIC OF KOREA

Korean ginseng products receive recognition as distinct food

The Republic of Korea's ginseng-derived products have received initial recognition as distinct foods by an international standard-setting commission, the Government said on Sunday.

The Ministry of Agriculture and Forestry said that the Codex Alimentarius Commission (Codex) had approved food standards forwarded by the country on dried and liquid extracts of ginseng. The ministry said that the decision made by a gathering of food experts in Rome to pass the food standards for ginseng is positive for exports. The Republic of Korea considers the root a health food but some countries classify it as a medicinal substance. Medicinal substances operate under different import rules from ordinary food, which makes trading them more difficult.

The latest decision by Codex will be forwarded to member countries of the organization for feedback. That feedback and the initial review will then be examined in detail by a subcommittee board before an international standard is established. [Source: *Yonhap News* [Seoul], 15 July 2007.]

SOUTH AFRICA

Recipe for making traditional "mukumbi" marula beer

Marula beer is brewed from the fruits of *Sclerocarya birrea*. Drinking *marula* beer is a social and cultural event in South African rural areas, and people gather every year to drink it.

Currently, commercialization of *marula* beer is growing in most urban areas. People, especially women, sell the beer for income generation. A litre costs R2 on the urban market.

Making the beer is a skill, but that skill can be transferred to others. The followings are simple steps on how to make *marula* beer.

- Collect fallen *Sclerocarya birrea* fruits and allow them to ripen fully at home. They will change their colour to yellow.
- Use a fork to remove the outer layer and squeeze it from side to side.
- Put only the juice and seeds in a 20-litre bucket, until it is about 15 litres.
- Add 5 litres of water to the bucket and press down to mix with a wooden spoon.

- Remove the seeds by squeezing the juice from them.
- Leave the juice in the bucket left for about four days to ferment.
- Before drinking *marula* beer, the thick *dangwa* layer on the top must be removed although some people drink with it to clean their digestive system.
- Sometimes the beer is preserved for several months in a big clay pot called *mvuvelo* and then drunk as a fully matured beer – *lutanda*.

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Traditional medicine for HIV to go on trial

Clinical trials to test a traditional medicine's effectiveness in delaying the onset of AIDS in HIV-positive patients will begin in South Africa within weeks, according to researchers.

Approximately 125 HIV-positive patients at Edendale Hospital in Pietermaritzburg in KwaZulu-Natal Province will take part in trials of the herb *Sutherlandia frutescens*, a well-known South African traditional medicine. The purpose of the trial will be to test the safety and effectiveness of capsules of *Sutherlandia* in patients newly diagnosed with HIV. Results are expected by August 2009. The research will be conducted by the South African universities of KwaZulu-Natal and the Western Cape, along with the Traditional Healers' Association of South Africa and the University of Missouri in the United States of America.

Traditional healers use *Sutherlandia frutescens*, sometimes known as "cancer bush", to treat a host of ailments from weight loss to aches and pains.

Sutherlandia has several active ingredients, said Quinton Johnson, one of the study researchers and director of the International Centre for Indigenous Phytotherapy Studies at the University of the Western Cape. The plant contains pinitol (a compound with antidiabetic properties), canavine (used by traditional healers to treat wasting diseases such as tuberculosis) and the amino acid GABA, which produces a feeling of well-being.

Nceba Gqaleni, Deputy Dean of the University of KwaZulu-Natal's Nelson R. Mandela School of Medicine, said this was the first collaboration between scientists and traditional healers to assess the

effectiveness of indigenous practices in treating such a serious health issue.

According to Sazi Mhlongo, Chairman of the Traditional Healers' Association of South Africa, the plant is "the most powerful of our herbs, which we mix with other herbs to treat a lot of different problems". Mhlongo, who has practised as a traditional healer in KwaZulu-Natal for 34 years, said traditional healers have become increasingly aware of the herb's success in treating HIV-positive patients. Patients who took it "felt better", he said. [Source: SciDev.Net, 4 September 2007.]

 UGANDA

Uganda's "sex tree" under threat

The soaring demand for a tree which some Ugandans believe can boost a man's libido and virility, may lead to its extinction, researchers warn. The most popular part of the slow growing *Citropsis articulata* tree, locally known as *omuboro*, is its roots. Ugandan lecturer Maude Mugisha says this means the whole tree is uprooted to satisfy consumer needs.

Found mainly in forest reserves, the tree's aphrodisiac qualities are yet to be scientifically proven.

The experts' concern was revealed during a symposium in the Ugandan capital, Kampala, on conserving and improving the use of endemic plant species. A by-product of the tree was actually on sale outside the conference venue. The vendor said he had been growing the tree himself and extracts a powder that is steeped in hot water and drunk as a beverage.

It is said that the tree's stimulating effects are only evident in men. [Source: BBC News [United Kingdom], 25 July 2007.]

Uganda risks losing EU honey deal

It has been two and half years since the European Union listed Uganda among those countries entitled to export honey but not one single consignment has ever been sent. After listing, Uganda was given an opportunity to export 200 tonnes of honey annually but this volume has never been realized, despite the good quality of the honey present in the numerous tests and certification procedures undertaken countrywide and verified in Germany.

The President of the Uganda National Apiculture Development Organization (Tunado) is worried that failure to comply

soon will result in the country being de-listed. If this happens, it will not only ruin the country's reputation and lose trust in the EU market, which is still Uganda's largest single exporting destination, but is also frustrating in the efforts to eradicate poverty.

Stakeholders are blaming the government's failure to help local farmers to access facilities that could help them harvest and produce the honey in a manner that is recommended by EU certification standards. For commercial purposes, a single farmer may require up to US\$4 million to produce high-quality honey.

The trend in world supply has continued to rise, but earnings have declined by about US\$20 million (US\$35 billion). [Source: *The Monitor* [Kampala], 3 October 2007.]



 UNITED REPUBLIC OF TANZANIA

Beekeeping in Umalila

Beekeeping is an important secondary industry in Umalila. Many of the beekeepers are elderly, however, and beekeeping does not appear to be attractive to most young people. In addition, much of the original forest is in a degraded state and is being gradually lost to logging and cultivation.

As the forest has traditionally produced the bulk of the honey, the future for beekeeping is uncertain. This is more than unfortunate for three reasons.

- Beekeeping could provide a useful income, particularly for young people, many of whom do not have access to land unless they hire it.
- Bees are important for the adequate pollination of crops such as passion fruit.
- It is traditional to site hives in areas of forest thus affording some protection for the remaining patches of

indigenous forest. One tree in particular, *impembati* (*Polyscias fulva*), is frequently used and even planted because of its branching habit and thus its suitability for the placement of hives.

Beehives are traditionally constructed from *iliogoti* (*Hagenia abyssinica*) and *llangali* (*Euphorbia nyikae*). Now they are usually made from *Euphorbia nyikae* and *Cupressus lusitanica*.

The hives are approximately 1 m long and divided into two halves. These are bound together with a cord made from *isintu* (*Ipomoea involucreta*) or other creepers. Hives are always placed in trees, mainly to keep flying bees above people living nearby or cultivating surrounding crops; to catch the warmth of the early sun, particularly during the dry season when it can be cold at over 2 000 m; and to provide some protection from pests. The two halves of the hive are hauled up and assembled high in the tree and then covered over with bamboo sheaths, supported and held down with sticks. The hive is baited with beeswax, which is normally effective in attracting a colony to enter.

When harvesting honey, the beekeeper uses lit pieces of bamboo of *ipekeso* (*Conyza bonariensis*) stalks surrounded by *igawo* (*Ensete ventricosum*) wild banana leaves to produce smoke, but he can nevertheless get badly stung. Sometimes he will lower the hive to the ground where two forked sticks are used to support the hive. Harvesting can then be carried out more easily as most of the flying bees will return to the original hive site in the tree. Not all combs are taken during harvest. Some of the honey is left, together with brood combs.

There is normally a small harvest at the end of June (up to 10 litres) but the main harvest takes place in November and December when between 18 and 25 litres can be collected.

Honey has a ready local market, mainly eaten in the comb. Wax is sold separately from the honey and is used by local carpenters and for shoe repairs. [Source: extracted from Latham, P. 2007. *Plants visited by bees and other useful plants of Umalila, Southern Tanzania.*]

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**UNITED STATES
OF AMERICA**
**Ginseng labelling act introduced
in Congress**

Legislation was introduced in both the United States Senate and House of Representatives yesterday that would require that ginseng (*Panax* spp.), when sold in its whole form, is labelled to identify its country of harvest.

Senate Bill 1953, the Ginseng Harvest Labeling Act of 2007, was sponsored by Sen. Russ Feingold (D-WI) and Sen. Herb Kohl (D-WI), while the companion bill, House Resolution 3340, was introduced by Rep. Dave Obey (D-WI). In his floor statement, Sen. Feingold noted that the bill has long-standing support from ginseng farmers and the Ginseng Board of Wisconsin as well as the support of the American Herbal Products Association (AHPA) and the United Natural Products Alliance.

Feingold stated that ginseng grown in Wisconsin – where 90 percent of United States ginseng is cultivated – “is of the highest quality”, but that “smugglers will go to great lengths to label ginseng grown in Canada or Asia as Wisconsin-grown”. He also stated that this legislation is intended to correct the problem and is “a simple but effective way to enable consumers to make an informed decision”.

“This bill will ensure that buyers of whole ginseng root are given truthful information as to its source, without creating unnecessary labelling requirements for other herbal ingredients or for finished herbal products,” said Michael McGuffin, AHPA’s president. (*Source: American Herbal Products Association, 5 August 2007.*)


UZBEKISTAN
Sale of NWFPs

The sale of wood and non-wood forest products by forestry enterprises generates 300–350 million Uzbek sum in annual income (see Table). Currently, more than 500 tonnes of food and medicinal plants (about 35 plant species) are harvested from the forests.

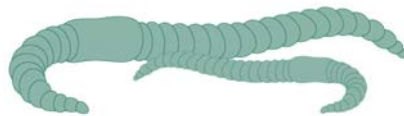
NWFPs include plants such as coriander, basil, fennel, onion anzur, dog rose and raspberries. In addition, saplings and seeds of various woody and bush species are exported. For example, in 2004 seedlings of woody and bush species were donated to Afghanistan for gardening.

A big threat to the sustainability of forest resources is the illegal logging of trees and

Income from forests in Uzbekistan, 2004

Product or service	Income	
	US\$1 000	%
Industrial roundwood	184.8	58.8
Woodfuel	49.3	15.7
Medicinal plants	27.02	8.6
Aromatic plants	0.94	0.3
Raw material for colourants and dyes	1.29	0.4
Hunting	38.43	12.3
Fishing	12.31	3.9
TOTAL	314.09	100

shrubs for fuel. This is mainly recorded in remote saxual forests in deserts far from forestry enterprises and forest guards. (*Source: United Nations Economic Commission for Europe (UNECE)/FAO. 2006. Forest and forest products country profile. Uzbekistan. Geneva Timber and Forest Discussion Paper 45. EC/TIM/DP/45.*)



VIET NAM
Salt-marsh forests threatened by illegal digging for impotence-curing worms

Increasing numbers of people are visiting the Can Gio salt-marsh forest to dig for Dia Sam (*Sipunculus*). According to Tran Minh Long, the leader of Loi forest guards at An Binh Hamlet, An Thoi Dong Commune in Ho Chi Minh City, this activity seriously damages the forest’s ecological system.

Dia Sam is a type of worm that plays an important part in enriching the ground and helping forest trees to grow better.

“Recently, Dia Sam has become a special dish in Ho Chi Minh City and is also exported to China. That’s why digging for worms in the forest has become so popular,” said resident Sau Xe. Dia Sam often hide on wet land under bushes. People can dig them up easily and only need to use a hoe. A regular digger can collect 3 kg of Dia Sam per day. As 1 kg of the worms fetches VND12 000, a digger can earn a generous income that pays much more than other jobs.

Rach Moc, a protected forest, is considered the best place to dig for Dia Sam. More and more people are visiting the area to dig for the worm illegally. “It is difficult to arrest people because they go further and further inside the forest and use sophisticated camouflage to hide in the bushes and trees,” said the leader of Thanh Nien Guard.

Because of lack of knowledge about forest protection, most diggers just think of their own immediate benefits. They do not realize that digging Dia Sam damages forest land and tree development or that their activities have a destructive effect on the whole ecological system. Once the Dia Sam are caught, many old mature forests are destroyed. The forestry situation is getting worse without the Dia Sam to help improve the quality of the soil. Can Gio is crying out for help to stop widespread hunting of Dia Sam. (*Source: Vietnam News, 28 July 2007.*)

Handicraft exporters target key markets

The handicraft industry has increased export value by nearly 30 percent in the last three years but needs to reform to compete with other regional exporters, according to industry insiders. In 2004 the industry earned US\$450 million and \$630.4 million in 2006, which accounted for 3 percent of the country’s total exports. Since 2000, the industry has focused efforts to expand exports to potential markets, including the United States of America, the European Union, Japan, the Russian Federation and the Association of Southeast Asian Nations (ASEAN) countries. Of these, the EU accounts for 50 percent of Viet Nam’s total handicraft exports, followed by Japan and the United States.

The handicraft industry has created jobs for more than 1.35 million workers, 60 percent of whom are women. Most women make rattan and bamboo articles, weave carpets and sleeping mats and make embroidered products.

Nguyen Van Sanh, deputy director of the Mekong Delta Development Research Institute, said that despite the industry’s contributions to increase export revenue and hasten rural economic restructuring, the handicraft and arts industry still faces challenges. The industry is plagued with outdated designs and high delivery and transport fees that make it less competitive than China, Thailand and other ASEAN countries, particularly in the United States and the EU. According to Sanh, the industry needs to expand planting areas for materials and reform production and processing methods. (*Source: Vietnam Economic Times, 11 September 2007.*)

Businesswoman brings Sa Pa medicinal plants to the world

A 31-year-old woman, Do Thi Thu Ha, has helped change the lives of ethnic minorities in Sa Pa with her company, trading medicinal plants after many years of living in the mountainous area. In 2002, she was assigned as coordinate officer to a project on developing medicinal plants in Sa Pa sponsored by the New Zealand Agency for International Development and the EU. The project aimed to encourage the conservation of endangered medicinal herbs and improve the livelihoods of ethnic minorities in the Sa Pa district of Lao Cai Province.

After three years' implementation, the project saw some fruitful results. Some overexploited and endangered plants that used to be seen as weeds had become medicinal plants with high prices. The most successful thing, according to scientific researchers, is that these plants could help cure common diseases of a developing society such as depression or Alzheimer's.

The project also discovered a kind of root containing an anticancer active element, which could lead to a turning-point for the inhabitants of Sa Pa, once verified by researchers. Later, intellectual property rights for the project's products will be granted for the benefits of the Sa Pa ethnic community.

In 2005, Ha established a company to sell the products. The company is now busy seeking partners to sell medicinal plants to Australia and New Zealand. Some foreign pharmaceutical firms have asked to buy the company's registered patent for mass production.

Ha's company's medicinal plants preservation project was awarded one of five 2007 Global Supporting Entrepreneurs for Environment and Development (SEED) Awards. "Bridging the Gap", as the project is called, uses sustainable cultivation of traditional medicinal plants to develop high value-added products, the manufacturing and proceeds of which improve the livelihoods of ethnic minority communities, according to the United Nations.

Over the next 12 months, each of the five SEED award recipients will receive targeted support services designed to expand their initial ideas and projects into a socially, economically and environmentally sustainable enterprise. With SEED support, exports of medicinal plants in Sa Pa into foreign markets are quite likely in the near future.

In September 2007, Bridging the Gap was filmed for a BBC television programme. (Sources: Vietnam net, 3 July 2007 and Sacred Earth, 27 August 2007.)



Traditional medicine in Viet Nam: an overview

Viet Nam has a long history of traditional medicine (TM) practices spanning thousands of years. Two, often interlinked, forms exist within the country: *thuoc bac*, or traditional Chinese medicine (TCM), is the dominant system in the north and uses materials native to China; and *thuoc nam*, or traditional Vietnamese medicine (TVM), which predominates in the south and uses Vietnamese materials.

Traditional medicines in Viet Nam are made from animal, plant and mineral products. Plants are used in far more remedies (over 90 percent) than animals, and most animal-based medicines also include plants to neutralize unpleasant odours and increase their overall effect. All parts of a plant can be used. Similarly, many different animal parts are used, from whole bodies to specific organs.

Of the more than 80 million people in Viet Nam, over 75 percent are estimated to use TVM as their primary source of treatment for common health problems. This is perhaps unsurprising considering the prohibitive expense of western medicines, combined with poor access to hospitals or community health centres. Together with increasing demand from urban areas, exploitation of medicinal plants and animals has risen to pose a serious threat to some species in Viet Nam – around 70 species are listed as threatened on the World Conservation Union (IUCN) Red List. The current Viet Nam Red Data Book lists 359 animals of conservation concern, many of them traded and used for medicinal purposes, including tigers (*Panthera tigris*), rhinoceros (*Rhinocerotidae* spp.) and bears (*Ursus* spp.).

The impact of exploitation of wild medicinal plant species is less well documented, but may be equally severe, especially as over 90 percent of the 3 900 plant species used in traditional medicine are wild harvested. The uncontrolled harvest of wild medicinal plants in Viet Nam, particularly on a commercial scale for processing and export by the pharmaceutical industry, along with habitat loss and degradation, are considered to be the primary causes for the decline of 136 species, 18 of them classified as Critically Endangered by IUCN. Several other species have declined so much in the wild in Viet Nam that they now have to be imported by the major pharmaceutical companies.

Regulation and testing (quality control) of the trade in medicinal plants and animals are poor. Current legislation is old and has many gaps, and only applies to state-run companies and institutions. Within private industry there is no official regulation (either administration or enforcement) of activities. With such a complex structure, some of it "underground", planning to regulate this large private industry will be a huge challenge in the coming years. (Source: *Traffic Dispatches*, 26, November 2007; <http://www.traffic.org/content/1036.pdf>)

ZAMBIA

Beekeeping has a long and old record in Zambian culture and there are few Zambians who do not understand about bees being helpful to humans. Most of the beekeeping methods used are of local origin, and most commonly used is the bark hive.

A tree is chosen with the desirable diameter and is then utilized to its fullest to avoid deforestation. One fully grown tree can produce about ten hives each measuring up to 1.2 m in length. This measurement is used to allow the beekeeper easy access to the combs from both ends.

When the site for the apiary has been chosen, the hive is hung high in the tree to secure it from attack by honey badgers. (Source: *Bees for Development Journal*, 83, June 2007.) 🐝

If you can walk you can dance. If you can talk you can sing.

Proverb, Zimbabwe