

 AFGHANISTAN

Traditional Afghan silk: an alternative use of NWFPs to eradicate the opium cultivation trend in Afghanistan

Using the ancient and once famous Silk Route, early traders passed through present-day Afghanistan on their way to the major trading markets in Damascus to ship their goods across the Mediterranean Sea. The traders brought with them not only goods but also new skills and crafts that have been disseminated in Afghanistan over time. These include the art of sericulture - the commercial breeding of silkworms for the production of silk in particular. In the past, Afghan silk became the symbol of pride and prestige in this region.

But the art of traditional Afghan silk has been mostly destroyed as a result of the nearly two and a half decades of unrest, and the security situation of the country. Most of the craftworkers have left their traditional business, their living places and the small industries. At the same time, the agriculture sector has gradually been taken over by illicit opium cultivation since the majority of Afghan farmers have fallen into poverty and there is a lack of viable alternative incomes because of the unrest.

According to a 2008 estimation, a total of 157 000 ha of land has been cultivated under opium, which is the total cultivated area reduced from previous years. The present farmgate price of 1 kg of dry opium is US\$95 and an opium yield of 48.8 kg can be expected from 1 ha of land. But following recent drives by the Government and international security forces, as well as international development organizations involvement in an opium eradication programme, the trend in opium cultivation is gradually declining. Agriculture farmers and traders of this illicit practice are searching and diverting into alternative sources of income.

In Afghanistan, the delicate work of producing silk is still done manually because there is no money to bring in modern machines. It takes between 45 and 50 days for an average family of five people to raise 40 kg of cocoons. Boxes are imported from China containing the leaves of the mulberry tree to feed the eggs that will gradually develop into the cocoons. In unravelling the cocoon, care has to be taken to avoid breaking the fine thread, which can be between 300 and 1 500 m. Generally, a small-scale enterprise with a dozen employees can produce 40 kg of rough silk that can be sold for US\$40/kg. This thread



then has to be treated, refined and further processed to make by-products. At present, artificial dyed silk from a neighbouring country costs US\$20/0.25 kg, but for Afghan silk, only 4 kg of undyed silk costs US\$160. The silk is processed into hats, *chapans* (the traditional male overcoats of Afghanistan) and other embroidery products. Silk shawls (a plain garment of 3-4 m² used by both men and women) are prized in the region. The price of one shawl varies from US\$40 to US\$100, or more depending on the quality. People can make one such shawl in a day using the traditional looming machines and thread.

Since traditional agricultural practices have a poor cash return and yield compared with opium, several alternative sources might be suggested: agriculture, horticulture and livestock sector-based small - and medium-scale enterprise development with high production and prices could replace the country's opium trend. In addition, silk production could be an effective way to involve small farmers, landless workers and vulnerable groups, including women, into an alternative and sustainable source of income and livelihood.

Very few people are still engaged in silk production, but there is hope to explore and rejuvenate the sector in the future. Initiatives should be taken immediately by the Government of Afghanistan and development organizations to engage and direct the opium farmers into alternative sources of income, especially silk production. Patronizing the silk production sector would restore this ancient art and provide a viable income for the present opium growers in Afghanistan. (*Contributed by: Mohammad Muktadir Hossain, Sector Specialist (Forestry), Agriculture Development Programme, BRAC Afghanistan, House 45, Lane 4, Baharistan, Kabul, Afghanistan. Fax: 00 93 798 125 100; e-mail: muktadir21@yahoo.com; www.bracafg.org*)

 AUSTRALIA

Himalayan tree offers fuel crop hope

A tree from the foothills of the Himalayas has emerged as a potential biodiesel crop for Western Australia (WA). Trial plantings of the tree in the Gascoyne have shown promising initial results.

The tree, *Moringa oleifera*, is capable of producing up to 2 000 litres of oil per hectare, about four times the amount available from annual crops such as canola, which can be used for food or biodiesel.

State Agriculture Minister Kim Chance, who is taking to Cabinet a proposal for 5 percent of all transport fuel used in WA to be sourced from biofuels by 2011, believes the crop could become a major biodiesel source for the region.

While the criticism of biofuels as a major cause of world food price inflation because food crops were diverted to fuels had been dramatically exaggerated, it was undeniable that having another buyer in the market would increase prices, he said. "We know that we can grow (moringa) in areas which are not currently used for food production," he said. "When we get access to seed that is more suited to more temperate environments it could be that it becomes a significant crop in those environments, in which case it will be competing with food."

Department of Agriculture and Food project manager Henry Brockman said trials of the tree were in place from Kununurra to Albany, but the best results were coming from an irrigated site near Carnarvon.

Pods are harvested from the tree and seeds, the size of a small coin, are taken out and crushed for oil, leaving the tree to grow for an estimated 15 years. The residue left after the oil is extracted can be used as stock feed.

In Carnarvon, one-year-old plantings were yielding 350 litres of oil per hectare but output was expected to increase dramatically in coming years as the trees reached their peak production capacity.

The seed pods are now picked by hand but researchers are working on a mechanical harvester.

Dr Brockman said the tree's ability to grow on marginal and salt-affected country meant it could be used in parts of the wheat belt.

The department is expected to enter an agreement with an Indian university next week to breed new varieties with higher oil yield and the ability to grow in different regions in WA. (Source: *The West Australian* [Australia], 7 July 2008.)

Wattle seeds and bush tomatoes are hot stuff

Aborigines have been called upon to impart knowledge that will boost and provide direction to Australia's blooming bush tucker industry.

As demand locally and globally continues to grow, the industry - estimated to be worth up to A\$16 million a year - needs to assess where it is going and how it is going to get there, says Jenny Cleary, leader of Desert Knowledge CRC's Bush Products programme.

The industry, which includes such foods as wattle seeds and bush tomatoes, is based on traditional Aboriginal knowledge about the collection, preparation and uses of desert plants and other food.

Ms Cleary says the aim is to get greater Aboriginal participation in the industry, with culturally appropriate considerations. There are challenges that the industry needs to resolve to achieve its potential. These include the fragmentary nature of the industry, the small scale of many producers, the lack of capital and highly variable wild harvesting. Also many fruits - such as the bush tomato - have numerous varieties while the markets demand consistency of size, colour and volume.

Because of these factors, Ms Cleary says the industry will develop two supply streams: commercial harvesting in areas where water is reliable and low-volume wild harvesting. "Wild-harvested supply could be branded in such a way to go into the high-value, lower-volume product at the premium end of the market," she says.

"So far there are not many Aboriginal commercial ventures operating successfully in the area. Our research aims to find out how to help them participate."

In a historic development known as Hands Across the Desert, Aboriginal gatherers of the Kakadu plum in Broome in Western Australia hosted bush tomato gatherers from Alice Springs. With the aim of making their product more saleable, they discussed issues such as fruit handling, storage, pest management, quality control and traceability.

This was an acknowledgement that global demand was rising for bush and desert foods. "The outlook for the industry is pretty good," Ms Cleary says. (Source: *Courier Mail* [Australia], 16 November 2008.)

TFS reports higher profit on increased sales of sandalwood

Perth-based Indian sandalwood grower TFS Corporation has announced a 44

percent increase in net profits to A\$27.6 million, which the firm attributed to a substantial increase in sales of its managed investment schemes (MIS). TFS, which recorded a net profit of A\$19.2 million in 2006-2007, said the increased sales had driven revenue up 52 percent to A\$68.4 million and earnings before interest, tax, depreciation and amortization by 46 percent to A\$42.1 million.

Company chairman Frank Wilson said the firm's higher MIS sales had bucked the wider trend away from the schemes, thanks to higher demand for sandalwood, a broader distribution base and the tax deductibility of forestry schemes. "In addition, we have continued to build the necessary infrastructure at our plantation operations in the Kununurra region of West Africa and have strengthened our land bank," he said.

"Plantings during the year doubled to approximately 600 hectares, and we are well placed to service a further significant increase to accommodate the level of MIS sales achieved in the 2008 financial year and those anticipated in future periods."

TFS announced last month that it would acquire Albany-based essential oils business Mount Romance Australia for A\$28.6 million, in a move Mr Wilson said would represent an accelerated realization of the firm's vertical integration aspirations.

The company will pursue agreements with international fragrance companies in 2008-2009, such as the oil supply arrangement signed with United Kingdom-based Lush Cosmetics, as well as increasing its focus on research and development. (Source: *The West Australian* [Australia], 14 August 2008.)



BANGLADESH

Utilization of medicinal and aromatic plants

In developing countries, remedies prepared by a traditional healer from plants of the local flora are available for the majority of the people. There are millions of people in all walks of life in these countries who have faith only in the traditional system of medicine and this trend is growing. They think that it is a safe and dependable system because it has evolved and been developed and perfected in their own communities and areas, and has been tried over a period of a thousand years with uniform results, under their own climatic and living conditions. This trend also results from the toxic and adverse reactions of synthetic and chemical medicines being observed around the globe. Experts feel that there are data available regarding the therapeutic efficacy of modern drugs that are not applicable to local conditions, especially to the South Asian-Pacific regions.

In Bangladesh, there are several thousand traditional healers, many of whom practise in rural areas, dispensing mostly herbal remedies. Well over 60 percent of the country's population attend their clinics.

A correct approach to the investigation of such plants would therefore be for trained physicians and pharmacologists to cooperate with healers.

The following are some of the problems regarding the development of medicinal plants in Bangladesh.

- Despite the fact that a large proportion of the country's population (mostly in rural and remote areas) depends upon the curative properties of medicinal herbs, little or no attention has been given to the development of this resource in the past.
- Medicinal plants of indigenous origin, as well as imported species, are now increasingly being used in both raw and semi-processed forms as medicines in the Greco-Arab (Unani) system. Herbal wings of multinational and national pharmaceuticals are also contributing at large in the utilization of indigenous herbal wealth.
- Although there are different areas of vegetation in Bangladesh with their distinctive agricultural products (rice, sugar cane, jute, leguminous plants, etc.) and commercially valuable trees,



there is no proper methodology adopted as yet regarding dissemination of existing knowledge on the state of the natural occurrence of medicinal plants. There is no organized body to disseminate ethnobotanical and scientific information in the country.

- The scope of cultivation of medicinal plants has not been clearly defined to the farmers. Therefore they lack awareness of the economic benefits.
- No attention has so far been paid to the propagation and harvesting of medicinal plants in the management plans prepared by forest departments of the different zones. No proper emphasis has been given to cultivation of medicinal plants in areas that are vulnerable to droughts or to heavy floods. This has led to the fear of extinction regarding several species.

(Source: The New Nation [Bangladesh], 14 September 2008.)

Spotted deer census in a mangrove forest established by workers

A spotted deer census report conducted in 2006 in an artificial mangrove forest of the Nijhum Diwp National Park Islands at the Bay of Bengal, Bangladesh, reveals a deer population of about 14 400 and highlights the importance of these forest mangroves in the country.

Understanding the abundance, distribution and movement patterns of animals is a very important aspect of wildlife management. The deer population in the Nijhum Diwp has become a crucial issue in recent years. Areas such as these appear to be extremely overpopulated as compared with their estimated carrying capacity. The purpose of this census was to observe how well the Forest Department at Noakhali could manage these large deer

populations given the limitations that exist. (Source: extracted from: M. Atiqul Azam. 2006. *Spotted deer census – 2006 at the Nijhum Diwp National Park: a man-made mangrove forest of Bangladesh*. Forest Department, Government of Bangladesh.)

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BHUTAN

Generating *Cordyceps sinensis* in the laboratory

Highlanders in Bhutan need not set out on wild cordyceps expeditions if the research on domesticating *Cordyceps sinensis*, locally known as Yartsa Goenbub, proves successful, say researchers.

At the Renewable Natural Resources Research Centre (RNR-RC) in Bumthang researchers are trying to see whether cordyceps can be cultivated in laboratories. The principal research officer, Dorji Wangchuk, said that he was expecting a promising output as mycelium in two of the 38 test tubes on trial in the laboratory had already started showing positive results. "I'm waiting for the other 36 cultures to come up," he said. "The mycelium could be mass propagated for domesticating cordyceps using potential host insects."

In the wild, cordyceps are found in different locations in Haa, Lingshi, Laya, Lunana, Bumdeling and Bumthang. An average dried cordyceps weighs 0.19 g and 0.47 g when fresh.

According to a veteran collector in Bumthang, about 1 350 collectors were out for a month collecting cordyceps from Chhokhor geog alone during the harvest season. They collect the expensive fungus from Diruphu, Ganchu, Sejeyphu, Chachen, Namtatheng, Kingkhorphu, Djegarphu and Yangdrok. Cordyceps grow at altitudes of 3 900–5 004 m above sea level at Kerab and Phugonma in Chhokhor.

Dubbed the world's most expensive mushroom, *Cordyceps sinensis* was sold for between US\$6 126 and 10 450/kg in 2007 from Dodena, Thimphu. After its collection was legalized in 2004, the highest production was recorded at 423.88 kg in 2006 and the lowest was 128.16 kg in 2007. (Source: Kuensel online, 18 July 2008.)

BRAZIL

Brazil becomes world's fifth largest honey exporter

Honey exports from Brazil totalled US\$18.2 million in the first half of 2008, representing a growth of 70 percent over the same period last year, and placing Brazil in fifth position in the world exports ranking. The figures were disclosed by the Sectoral Chamber for the Honey Production Chain.

According to the organization's President, José Gomercindo da Cunha, the main reason for the expansion of sales was the resumption of exports to the European Union. In the last two years, Brazil exported only to the United States of America. Now the aim of the Sectoral Chamber is to maintain its sales to Europe and, at the same time, seek new markets such as Japan and the Arab countries.

Brazil is the world's 11th honey producer, with an annual output of 36 100 tonnes.

Domestic honey consumption is expected to rise in Brazil in 2009. "To that extent, we are working with the Brazilian Micro and Small Business Support Service (Sebrae), and 25 states are already willing to contribute to nationwide promotional work", stated Gomercindo da Cunha. "The proposal is to raise per capita consumption from 100 to 120 g."

Another goal of the sector is to reduce non-conformities with the regulation for industrial inspection of the product, so as to conquer a larger share of the foreign market. Production of honey and its derivatives, such as propolis, wax and jelly, is a source of family income in several regions of Brazil, including the semi-arid area.

Currently, 350 000 beekeepers in Brazil answer to 16 000 direct jobs in the industrial sector, as well as 450 000 direct jobs on farms. (Source: Brazil Magazine, Los Angeles [United States of America], 15 September 2008.)

Brazil launches rain forest fund

Brazilian President Luis Inacio Lula da Silva has launched an international fund to protect the Amazon rain forest and help combat climate change. The fund will promote alternatives to forest-clearing for people living in the Amazon, and support conservation and sustainable development.

Officials will seek donations abroad and aim to raise US\$21 billion by 2021.

Speaking at the launch in Rio de Janeiro, President Lula said Brazil was aware of how much the Amazon meant to the wider

world. "It's better for the country's image to do things right, so we can walk in international forums with our heads high," he added, while insisting that the Amazon's preservation was Brazil's responsibility and that Brazil will not accept foreign interference in its Amazon policy. Roberto Mangabeira Unger, Minister for Strategic Affairs, clarified, "The fund is a vehicle by which foreign governments can help support our initiatives without exerting any influence over our national policy. We are not going to trade sovereignty for money."

Sergio Leitao, Director of Public Policies for environmental group Greenpeace Brazil, noted: "For a long time, Brazil was violently opposed to this, insisting fossil fuel was to blame. That's true, historically speaking, but today forests play an important role."

Brazilian Environment Minister Carlos Minc called for a radical change in environmental attitudes: "We are committed to reducing the destruction of the rain forest, to eliminating illegal burning and to guaranteeing a better quality of life for all. Our war is not won by simply reducing illegal burning in one month, it will be won once this environmental model that is destroying our communities and biodiversity is history." (Source: BBC News [United Kingdom], 1 August 2008.)

Norway joins fight to save Amazon

Norway has pledged US\$1 billion to a new international fund to help Brazil protect the Amazon rain forest. The money will be released over seven years to promote alternatives to forest-clearing for people living in the Amazon, and support conservation and sustainable development.

Norwegian Prime Minister Jens Stoltenberg said: "Efforts against deforestation may give us the largest, quickest and cheapest reductions in greenhouse gas emissions." "Brazilian efforts against deforestation are therefore of vital importance if we shall succeed in our campaign against global warming," he added.

Brazilian President Luis Inacio Lula da Silva welcomed Norway's pledge: "The day that every developed country has the same attitude as Norway, we'll certainly begin to trust that global warming can be diminished."

Japan, Sweden, Germany, the Republic of Korea and Switzerland are said to be considering donating to the fund. (Source: BBC News [United Kingdom], 17 September 2008.)



Brazil's Amazontech debates Amazon's self-sustainability

Technological innovation, science and entrepreneurial initiatives in the Amazon region were to be highlighted at Amazontech 2008, in São Luís, Maranhão state in November.

The sixth edition of this event opened space for the generation of sustainable business, exchange of scientific and technical knowledge and diffusion of information that may guarantee self-sustainability of the region.

Around 100 Amazonian companies offered herbal medication, handicrafts, textiles, honey and honey products and wooden products from sustainably managed areas. Eight companies interested in the purchase of these products arrived from Venezuela, Colombia, Mexico, Argentina, Uruguay and Spain.

The project round tables included institutions to finance social or entrepreneurial projects capable of creating work positions and generating income for the community in the Amazon. The expectation was that up to 50 projects will be financed.

Business project round tables included six institutions to finance social or entrepreneurial projects capable of creating work positions and generating income for the community in the Amazon. Bank participation was vital, enabling the business sector to invest in the preservation without leaving trade aside. As before, the expectation was that up to 50 projects will be financed.

Amazontech presented sustainable solutions particularly for communities in forest and non-wood management, which expand opportunities in sectors such as pharmaceuticals, cosmetics and food. "Standing, a tree is more profitable than lying down. With a tree standing, we can add

value to the product," said the superintendent of Sebrae in Rondônia state, Pedro Teixeira.

Amazontech has also stimulated universities in the Amazon region to broaden their course options to include those working with local potential, in such fields as forestry engineering, biotechnology, geology, veterinary medicine and biology. (Source: *Brazil Magazine* [United States of America], 25 November 2008.)

CAMEROON

Bee farmers trained in profitable honey farming

Some bee farmers in the Southwest Province were recently trained on how to make their venture profitable by processing both honey and its by-products. The two-day training took place at the Women Empowerment Centre, Kumba. The participants received fresh knowledge on honey quality; good harvesting and smoking; pollen, propolis and royal jelly production; bee venom extraction and queen rearing; honey wine and mead; beekeeping equipment; honey marketing; and access to finances.

According to the Southwest technical advisor of FAO, Irene Manyi Ako, the training is part of mobilization and capacity building for small- and medium-size enterprises involved in the value chains of non-wood forest products in Central Africa. (Source: *The Post* [Buea], 6 October 2008.)

New village tree planting project

Can we start from our own small communities to plant trees so as to have global benefit? This is the question behind a new project in Cameroon: tree planting in 13 village communities of Ngoketunjia division, as a means to fight climate change in Cameroon and the world at large. The objective of the project is to plant 65 000 trees on 26 ha of land within the 13 village communities in Ngoketunjia division, which is one of the seven divisions that make up the Northwest Province of Cameroon. In the division are lowland plains linking most of the villages, and there is a population of about 2 000. Seventy percent of the total land surface is in the plains and the main activity is farming, with swamp rice, maize and groundnuts being the main crops cultivated. Other activities include fishing, hunting for wildlife, woodwork in craft industries, etc.

There are problem areas: an increased population that depends on agriculture for survival and the limited farmlands, which have led farmers to destroy patches of forest for farmlands; unsustainable exploitation of tree barks, roots and leaves for traditional medicines by traditional doctors; high demand for timber for construction of houses and furniture, which has led to continued cutting down of trees without replacement; wood is the main raw material for the craft industries and the many industries use a lot of wood; the construction of the Bamenjim dam has led to the destruction of many hectares of lowland forest; and there is a high demand for fuelwood for domestic and industry use.

Project activities will start in January 2009 in the village communities with sensitization workshops on the importance of tree planting and management. Each village community will plant 2 ha each, which will be managed by the village after the project. Expected outputs of the project include: village communities will increase their knowledge on the importance of tree planting; 26 ha of land will have been planted with different species of trees; vegetation cover will be increased; and global warming reduced.

The pilot phase of this project will last 12 months and has a budget of ₦30 800. (Source: Natural Resource Monitoring Items of Interest [NRMI], 26 October 2008.)

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CANADA

Making money from more than trees

Money may not grow on trees but burls do and those misshapen growths may be just what a wood carver needs to make a beautiful bowl. How about shiitake mushrooms growing on a water-soaked log? A city chef may be willing to pay for a local supply.

In the wake of mill shutdowns, woodlot owners across Atlantic Canada are looking at all ways of making money from their woods, from providing hiking and skiing trails to harvesting colourful berries and

unusual mosses to sell to Christmas crafters and decorators. But connecting with people who desire these activities and products has been an obstacle for woodlot owners.

To help, more than a dozen forestry and agriculture organizations in the region and in Maine have come together to create "From Our Atlantic Woods", a printed colour catalogue and Web site that will list NTFPs grown or produced in New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador, and Maine.

INFOR is heading up the "From Our Atlantic Woods" project. There is no charge to producers to list in the directory. (Source: Atlantic Farm Focus [Canada], 31 July 2008.)

FOR MORE INFORMATION OR TO SIGN UP, PLEASE VISIT:
www.ntfp.infor.ca



Food products foraged from British Columbia's forests need to be showcased

Foraging in the forests of British Columbia is suddenly something to be reckoned with. It has graduated to the post-secondary level.

One of the projects undertaken by the Centre for Non-Timber Resources at Royal Roads University in Victoria is "Buy BC Wild", which has sponsorship from the Ministry of Agriculture and Lands, Thrifty Foods, VanCity and Service Canada.

"We realized there were a lot of wild products coming out of our forests and there was a need for wildcrafters and businesses to have a collective voice to showcase their wonderful products and services," says Holly Caine, coordinator of Buy BC Wild. A Web site directory listing 150 purveyors of wild food, herbs and craft material from BC's forests showcases the non-logging side of our forests (see www.buybcwild.com).

"What we're trying to promote are the people who access the resources in our communities and provide local products," says Caine. While Vancouver Island's

timberlands are mainly private, in the rest of the province, about 70 percent is Crown land, she says.

Currently, the best source of information on where and how to forage is district forest offices. "You need to contact them to let them know of your intentions. People also have to be aware of First Nations cultural use of medicinal plants. A harvesting area might have been used for centuries and they have cultural and heritage rights to that area."

On Vancouver Island, she says, "everybody knows how wonderful and nutritional our native plants are. Our blueberries are amazingly nutritious with phytonutrients." Caine has a weak spot for wild berry jams. "Thimbleberry jam. Rose petal jam. I buy them already prepared. And on the weekend before Thanksgiving, you can find high bush cranberries at higher altitudes. They make the most amazing jelly." (Source: Vancouver Sun [Canada], 15 August 2008.)

CHINA

Asian Development Bank helps China improve Baiyangdian ecosystem

To help counter the environmental damage to Baiyangdian Lake in north China, the Asian Development Bank is providing a loan of US\$100 million for the US\$273 million Integrated Ecosystem and Water Resources Management in the Baiyangdian Basin Project, which will focus on the critical actions to conserve Baiyangdian Lake - one of the most important and vulnerable ecosystems in China.

Through a range of interventions, the project will help alleviate ecosystem constraints in the basin by improving water quality and quantity. Additionally, the project will include training for ecosystem management and ecotourism. Development of NTFPs will also be encouraged. (Source: China CSR [China], 25 July 2008.)

COLOMBIA

Colombia's Cofan still fighting for survival

Bogota. Although he is only 21, Camilo Yoge has seen his indigenous tribe lose its culture, territory and traditions. Yoge, a member of the Cofan tribe, has seen farmers, ranchers and oilmen invade his ancestral lands to plant illegal coca crops,

raise cattle and search for oil. "We're losing our traditional dress, our environment," lamented Yoge, who is studying to become a *taita*, or shaman. "We are no longer free in our own territory."

To help the Cofan – who number only about 2 600 people between Colombia and Ecuador – preserve their traditions, the Colombian Government last month created the Orito Ingi-Ande Medicinal Plants Sanctuary to protect the plants that the Cofan depend on for medicinal and spiritual purposes. Officials in Colombia say the reserve is the only national park in the world created for that reason. "Sustainable use will permit us to preserve the natural resources," said National Parks Director Julia Miranda Londoño.

The idea for the reserve came after Cofan leaders met in 2003 with the national organization of indigenous shaman to search for an unpopulated region they could use to preserve their medicinal plants. They took the proposal to national park authorities, who spent several years mapping out a 25 000-acre (10 117 ha) reserve.

The Orito Ingi-Ande Medicinal Plants Sanctuary, whose name means "our territory" in the Cofan language, ranges in elevation from 2 300 to nearly 10 000 feet (701-3 048 m) above sea level in the southwestern departments of Nariño and Putumayo - about a two-hour drive from Cofan territory, where much of the vegetation has been destroyed by farmers, ranchers and oilmen.

With few options available for earning money, park officials say that many Cofan have resorted to harvesting coca leaf, the base ingredient for cocaine, further eroding their traditions. Even traditional palm fronds, which are now hard to find, have been replaced by tin when building roofs for their homes.

"We live from nature, that's where our energy comes from," said Louis Octavio Criollo, 39, a Cofan who is also training to become a *taita*. "But when (the forest) is cut down, all of that is lost."

Aside from spiritual value, the new park's elevation range has abundant biodiversity, parks officials say, including about 400 bird varieties, numerous reptiles and such rare species as chameleons, jaguars and Andean spectacled bears. Cofan elders have also identified nearly 100 plant species used for medicinal and religious purposes.

Two of the most important plants are yoco (*Paullinia yoco*), a vine used against fatigue, as a laxative and to prevent malaria, and yagé, a mildly hallucinogenic vine used in

traditional rites, which has become popular with outsiders who often harvest the plant for sale. Other plants are used to treat inflammations, kidney ailments and rheumatism.

Indigenous Colombians, who belong to dozens of different ethnic groups, make up about 2 percent of the nation's population of 45 million. Like the Cofan, many have suffered the impact of disease, deforestation and violence from the nation's more than four-decades-old civil war.

Lillian Madrigal, Vice President of programmes for the Amazon Conservation Team, based in Virginia, which helped plan the new park, predicts that the reserve will inspire the creation of protected areas in other nations. In fact, Colombian park officials say they are already planning to convert a 2.9 million-acre (1.2 million ha) indigenous reserve into a national park to protect areas important to the several indigenous groups living there. Luciano Mutumbajoy, a member of the nearby Inga indigenous people and a leader of Colombia's traditional medical practitioners, helped create the yet-to-be named park. "If our medicine is finished, the life and existence of the indigenous people will end," he said. (Source: Traditional Knowledge Bulletin, 22 July 2008.)



Científicos «domestican» hongos silvestres en Costa Rica

Científicos costarricenses trabajan en la «domesticación» de varias especies de hongos silvestres comestibles para que puedan ser producidos comercialmente y se aproveche su potencial alimenticio y medicinal.

El proyecto está a cargo de un grupo de biólogos del Instituto Nacional de Biodiversidad (INBio), una entidad privada sin fines de lucro que se dedica al estudio de las especies vegetales y animales de Costa Rica y que promueve su uso sostenible.

Los investigadores han estudiado parte de las 125 especies de hongos silvestres clasificadas en el país y hasta el momento

han identificado cuatro con un importante potencial de domesticación.

Milagro Mata, directora de la Unidad de Hongos del INBio, explicó que se trata de variedades conocidas científicamente como «*Pycnoporus sanguineus*», «*Ganoderma australe*», «*Lentinum monticola*» y «*Lentinula aciculospora*».

Dos de las especies son setas y otras dos "orejas de palo", como se conocen popularmente, las cuales reúnen particulares beneficios alimenticios, como un alto porcentaje de proteína, fibra y aminoácidos entre sus componentes.

Tras la identificación de estas especies, el INBio concentrará ahora sus esfuerzos en la construcción de un laboratorio para la reproducción experimental de los hongos, a fin de establecer los métodos más apropiados para su producción comercial, dijo Mata.

La investigación forma parte de un proyecto financiado por la entidad internacional Fundecoperación, en el cual participan también Bután (Asia) y Benín (África), el cual está dotado con un presupuesto de un millón de dólares.

Según Mata, el consumo de hongos ha crecido aceleradamente en el mundo en los últimos años y Costa Rica podría sacar provecho económico de su potencial.

También explicó que el INBio espera poder capacitar y eventualmente financiar el inicio de operaciones a agricultores que quieran explotar comercialmente este producto.

(Fuente: Univisión, EE.UU., 5 de agosto 2008.)

DEMOCRATIC REPUBLIC OF THE CONGO

The valorization of NTFPs from Batéké Plateau in the periphery of Kinshasa

The main objective of this study was to make an ethnoecological analysis of the management systems of NTFPs in the periphery of Kinshasa. It considers an operating mode that guarantees their conservation and sustainable use and to bring elements that are indispensable to improving their valorization.

The study aims to understand the explanatory factors of the exploitation and valorization of NTFPs; to examine the effects of their intensification in the survey zone; and to undertake some actions in the short, medium and long term to deepen knowledge on the endogenous associative networks, ethnoecological expertise and power

relations concerning access to NTFPs, and the implementation of the policies that drive a participative management of the natural resources in the periphery of Kinshasa.

Field surveys took place in the eight villages of the Batéké Plateau and for the station of Bombo-Lumene, "a protected area". The five most exploited non-ligneous forest products of the survey area were chosen in order to analyse the determining factors in NTFP exploitation. The survey of 280 households was complemented by 22 focus group interviews, direct field observations, socio-economic surveys and ethnoecological surveys on the exploitation strategies of NTFPs. The NTFP chain at Batéké Plateau and its impact were studied between June 2005 and November 2006.

The analysis of NTFP use in the periphery of Kinshasa reveals 169 species of NTFPs belonging to 65 families:

- 66 species of herbaceous plants (39 percent);
- 46 species of ligneous plants, including the coins bushes (27 percent);
- 27 species of bushes (16 percent);
- 22 lianas species (13 percent); and
- 8 species of coins bushes, which are poorly exploited (5 percent).

These NTFPs are essentially used for food (68 species, 40 percent); herbal medicine (59 species, 5 percent), and handicraft domestic and cultural uses (41 species, 25 percent).

The households surveyed have extensive environmental endogenous knowledge of the ecological factors. They know 12 plant species used as an additive for fermentation to local wines. They respect the téké custom of dedicating one day of the week to their forebears. The shepherds do not cut down the trees along riverbanks. They succeed in popularizing the cooking techniques of *Pteridium* sp. (fern) and of *Talinum triangulare* (waterleaf), eliminating toxic substances such as ptaquilosides and oxalates from these NTFPs.

The NTFPs exploited in forests, gallery forests and savannahs are sold in the markets and selling points at Batéké plateau. The average price that villagers sell 1 kg of these NTFPs is estimated to be:

- US\$0.08 for *Pteridium* sp., with an average daily profit of almost US\$2;
- US\$0.05 for indigenous wine, with an average daily profit of US\$9;
- US\$0.05 for *Dioscorea praehensilis* (bitter thread), with an average daily profit of US\$1;
- US\$0.05 for *Talinum triangulare* with an average daily profit of US\$0.26; and



Dioscorea praehensilis

- US\$0.20 for rattan, with an average daily profit of close to US\$4.

Apart from the socio-economic value of harvesting NTFPs, there are also some negative effects to the ecosystem, which are mainly caused by unsustainable methods used for harvesting, such as the systematic and regular harvest of fruits, roots and leaves; the systematic felling or extraction of plants; the removal of the complete bark; cutting off of the terminal bud; and repeated fires. All have caused an enormous toll on the natural environment.

Finally, this study shows that there are biocultural interactions that apply to both the natural environment (ecosystems) and to the strategies of NTFP utilization by farming families. The definition of a reasonable valorization policy of NTFPs integrated in an interdisciplinary approach of sustainable development remains unavoidable for the area under study. (Contributed by: Apollinaire Biloso Moyene, Faculté des Sciences Agronomiques, Université de Kinshasa, Plateau des Professeurs, Résidence THELEM, App. 18 Campus, BP 117 Kin 11, Kinshasa, Democratic Republic of the Congo. E-mail: apollo_biloso@yahoo.fr)

FINLAND

Finnish mushroom pickers love the forest

"About 5 percent of Finns like to spend all their available time in forests," Mr Kimmo af Ursin estimates on the basis of his 13 years as a mushroom entrepreneur. In fact, the majority of people who pick mushrooms for sale are really out to get some for

themselves but, if the catch is big enough, they end up selling some of it.

af Ursin is known in Finland for his cooperation with the Italian entrepreneur Lorenzo Dalla Valle, who exports ceps (*Boletus edulis*) from Finland to Italy. It is af Ursin's job to get the pickers out as soon as the first ceps are sighted each autumn.

One person can pick enough mushrooms for the needs of a single restaurant, but when the main crop of ceps emerges in the Finnish forests, a veritable army of pickers is needed. The method of alerting the pickers varies in different parts of the country and includes placing advertisements in newspapers and sending text messages.

af Ursin has toured all of Finland, speaking to about 7 000 people about mushrooms and how to organize the picking. He has the contact information of some 1 500 mushroom pickers. After hearing about the first sighting of ceps, af Ursin forwards the information to Dalla Valle. Dalla Valle organizes trucks that run on set routes according to a set timetable to buy the mushrooms, and af Ursin informs the pickers about the routes and timetables by SMS.

Buying ceps is a whirlwind business and, because of the efficiency of the pickers, daily amounts can reach 5 tonnes. A cep of the best quality is hard and firm, the gills are white and the mushroom is clean and whole. The main part of the cep crop is exported. "In 2003, for example, some 1 100 tonnes of ceps were picked in Finland. The domestic use was about 40 tonnes," says af Ursin.

In Finland, 22 mushroom species can be sold as foodstuffs. In practice, only seven are picked for sale: cep, false morel (*Gyromitra esculenta*), funnel chanterelle (*Chantarello tubaeformis*), chanterelle (*Chantarello cibarius*), black chanterelle (*Craterellus cornucopioides*), northern milk-cap (*Lactarius trivialis*) and rufus candy milk-cap (*Lactarius rufus*). "Ceps make up about 70 percent of both the volume and value of the catch," af Ursin estimates.

But how does one know if a good mushroom crop can be expected? There is no sure way of predicting it, af Ursin says. "There are too many variables in the environment, every moment is unique. The only source of information about the crop are people who regularly move about in Finnish forests." (Source: Forest-fi, 1 December 2008.)


INDIA
Improved cooperation key to saving biodiverse forests in northeastern India

While the tropical forests of northeastern India have the lowest population density in the country, a population growth rate of 3 percent per year has put pressure on community-owned forest reserves for food, timber and NTFPs. However, this dependence - combined with improved relations between the Forest Department and the Nishi, a local tribe - may help facilitate more effective conservation action in and around the Pakke Wildlife Sanctuary, say researchers Aparajita Datta and G.S. Rawat in a recent report.

Past conflicts between the subsistence agriculture-dependent Nishi and the Forest Department have eased since 2002, when the department and national conservation organizations began to address the challenges confronting local communities. Now, "hunting of wildlife such as hornbills, primates and ungulates in the park appears to have declined due to better protection by park authorities and greater awareness and enforcement of hunting bans by the Nishi community", note the authors.

Datta and Rawat conclude that efforts to protect forest resources and biodiversity will be in the best interest of local communities.

(*Citation:* Aparajita Datta and G.S. 2008. Rawat. Dispersal modes and spatial patterns of tree species in a tropical forest in Arunachal Pradesh, northeast India. *Tropical Conservation Science*, 1(3): 163-185, September.)

(*Source:* mongabay.com, 15 September 2008.)

Sikkim Himalayan screw-pine, *Pandanus nepalensis*: a much neglected and underexplored NTFP

The Indian state of Sikkim, in the northeast Himalayas, is known to have over 4 500 plants within a geographic area of 7 096 km², making the region part of one of the world's richest biodiversity hot spots. A substantial part of the state is covered by forests (about 36 percent of total land area), a majority of which are of the temperate semi-deciduous forest type. This article concerns one screw-pine of the region, *Pandanus nepalensis* H. St John (= *Pandanus furcatus*), of the Pandanaceae family (in Hindi, the plant is called Ambemohor pat, Rampe and named Tarika



in Nepali), which is considered to be a much neglected local floral element and whose potentiality as non-timber forest resource has so far never been realized.

On a global scale, the genus *Pandanus* is made up of about 700 species. In general, these screw-pines are tree-like and grow up to 20 m, but small shrub-like specimens of about 1 m high are also common and distinguished for having broad canopies and a moderate growth pattern. The long linear leaves originating at the stem appear screw-like and the edible fruits, to a great extent, resemble pine cones, hence the name "screw-pine". The leaves, which have stout curving spines at the edges, are often traditionally used for their fibre content and are known for their distinct aroma. The species of *Pandanus* are widely used for many purposes: preparation of jam, housing materials, in textiles, food, medication (antiviral, anti-allergen), making mats, etc.

Pandanus nepalensis is a medium-sized dioeciously branched tree up to 5-6 m in height, typically having a broad canopy and stout trunk, ringed with many leaf scars. Spines are also found on the individual fruits (obconical, 5-6 angled), which are borne as a composite fleshy pseudo-drupe (15-25 cm long, globose) on a common fruiting axis. These are evenly covered by a shining cuticle, each bearing yellow outwardly curving forked stout spines. These spines provide a natural protection from damage by wildlife until the fruit is ripe. (This should be considered as a strategy by the species in seed dissemination.) The fully mature composite fruit turns bright red.

The use of *P. nepalensis* as medicine is inadequately documented, although it has important properties. In the Dzongu valley in the northern district of Sikkim the indigenous Lepcha tribe use *Pandanus* in several ways. According to the Maon-Doak (the Lepcha medicine man), the leaves are

used against snake bites: the young and tender *P. nepalensis* leaves are tied or warped at the location of the snake bite and help to reduce pain, also acting as an antidote to snake venom. The leaves of the plant act as a mouth freshener when chewed and the fresh leaves are used as a cockroach repellent. Reports also indicate that the leaves act as an aphrodisiac and a cure against headache and general weakness, and that the juice of the crushed plant taken with milk will induce abortion. The fruits that ripen during the winters are eaten by human beings, monkeys and rats.

In Sikkim Himalaya, although growing within a limited vertical limit (300-1 200 m), the species has a wide horizontal distribution within the Tista river basin (the biggest in Sikkim). Considering the abundance and accessibility of the screw-pine all over the region, it is intriguing that very little is known about it and still less literature is found on it.

In the past the screw-pine was used for making various items, such as hand-woven mats, carry bags, fish snares, thatching materials, etc. but these uses are now dying out. Reviewing the literature on the region's NTFPs, it is noteworthy that little resource prospecting has been done on these fibre-yielding plants. Although the region has well-documented information on wild edibles and herbals, it is poorly documented on fibre-yielding plants. This aspect, the reasons behind it and its effect, need closer examination in relation to the sociocultural-economic fabric of the tribal people of Sikkim.

In view of the various attributes of *Pandanus*, there are great possibilities for using this NTFP species (in addition to making jam, jelly, juice, textile, etc.) as an aid to the socio-economic development of native communities through innovative entrepreneurship, both by using wild resources sustainably as well as planting the species in wastelands and other underutilized lands through the development of propagation and mass multiplication protocols. From the habitat conservation and management point of view, the species could also offer a great boost to wildlife and thus a rich biodiversity, in addition to conserving the soil. As the Sikkim Himalayan region is of recent origin with a high rainfall and sloping terrain the *P. nepalensis* populations provide a much-needed support towards maintaining the fragile ecosystem balance in the region.

(Contributed by: Dr Hemant K. Badola, Mr B.K. Pradhan, Ms Sanjyoti Subba, Mr L.K. Rai and Dr Y.K. Rai, G.B. Pant Institute of Himalayan Environment and Development, Sikkim Unit, Gangtok-Sikkim, India.)

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How medicinal plants promote agribusiness
 The National Medicinal Plants Board (NMPB), established in 2000, is responsible for supporting initiatives for the conservation and cultivation of medicinal plants, both *in situ* and *ex situ* in India. In the latest 11th Plan, the outlay of Rs990 crores to the NMPB represents a sevenfold increase in financing from the previous plan.

A study of demand and supply of medicinal plants in India carried out by the Board during 2007-2008 highlighted alarming shortages of some of the plants used by the Ayurvedic industry.

Of particular interest were tree species such as Sita Ashok (*Saraca asoca*), the main ingredient of Ashokaristha, a key Ayurvedic formulation for gynaecological disorders; Guggal (*Commiphora wightii*), a thorny bush that yields gum resin used in more than 100 Ayurvedic preparations; and the Dashmools, used in the popular Ayurvedic preparation, Dashmoolarishta. The estimated demand of Sita Ashoka bark is in excess of 2 000 tonnes, but availability in the wild is extremely rare. Likewise, although more than 1 000 tonnes of the gum resin from Guggal is used by the Ayurvedic industry, over 90 percent of this is imported.

The Board has sanctioned the conservation and plantation of some of the rare and endangered species in high demand on thousands of hectares across multiple states.

Special Board initiatives include the conservation and propagation of high altitude plants such as Atees, Kuth and Kutki, led by the Task Force on High Altitude Medicinal Plants. The School and Home Herbal Gardens programme in over 1 000 schools across the country has driven awareness about the healthy role of India's biodiversity.

A new Government-approved initiative, the National Mission on Medicinal Plants, seeks

to promote market-driven cultivation with a focus on the development of selected clusters with potential for inclusive growth in agribusiness through medicinal plants. The goal is to improve market access of farmers to better prices for their produce and better quality of raw material for the Ayurvedic, Siddha and Unani industries. (Source: Commodity Online, Kerala [India], 15 September 2008.)

Low prices strain Mahua flower-dependent villagers in Orissa

Villagers across Orissa are under strain as the Panchayat Samiti has fixed what most consider to be a low rate for the Mahua flowers they depend upon for their livelihood. Mahua, the raw material used for making country spirit, is a major source of revenue for the state government.

The subcollector of Bargarh district said that this year the rate for the sale of Mahua flowers is fixed at Rs1 500 per quintal, and Panchayat Samitees have been entrusted to ensure that villagers get minimum support prices for their produce.

"For the last two years, the Mahua yield has not been sufficient. We collect Mahua flowers every day with the hope that we will earn something, but unfortunately we have to sell the flowers at a throwaway price," said Kanak Pradhan, a villager.

"This is a season of Mahua flowers and the government of Orissa has made adequate provisions for the sale of these flowers by the villagers wherever Mahua is produced. It comes under non-timber forest products. The rate for such products, including Mahua flowers, is fixed by the Panchayat Samitee concerned. The Gram Panchayats are given the responsibility to see ... that the poor people get a minimum fixed support price by the Panchayat Samitee," said Bishnu Prasad Mishra, subcollector, Bargarh district.

Almost all villagers, especially women, gather Mahua flowers from early morning until sunset. The flowers are then dried and sold to entrepreneurs, leaving most villagers largely unaware of the fixed prices. Most tribals along the forested area of Orissa depend on such NTFPs for sustaining themselves for around six to seven months in a year. (Source: DailyIndia.com, Florida [United States of America], 7 June 2008.)

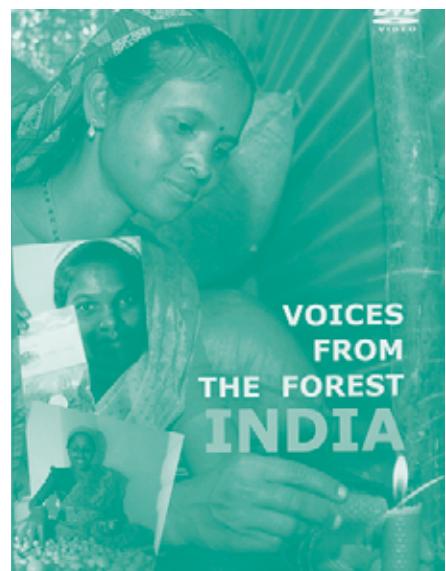
Voices from the Forest, India - new film

All across India, NTFPs are a critical source of income for indigenous people and forest-dwelling communities, who are among the poorest of the poor. Not only do the NTFPs

play a crucial role in the livelihood of these people, but form a key incentive to conserving the forests of India. Moreover, NTFPs are woven in with the social and cultural fabric of the communities living in India.

Women from a self-help group in India sort through dried amla fruit. Traditionally, amla is made into chutneys and pickles. Here it is processed into sweets and a breath freshener.

Through the assistance of the Keystone Foundation, productivity has increased threefold with the adoption of new technology for processing. This story, and many others, are featured in a new 30-minute film - Voices from the Forest, India - made by the Non-Timber Forest Products Exchange Programme, through Gekko Studio/Telapak and Dusty Food Productions.



FOR MORE INFORMATION OR TO REQUEST A COPY OF THIS FILM, PLEASE CONTACT:
Non-Timber Forest Products Exchange Programme, 92 Masikap Extension, Barangay Central, Diliman, Quezon City 1100, Philippines. Fax: +63 2 4262757, 9293665; e-mail: info@ntfp.org or publications@ntfp.org (Manila); www.ntfp.org/

East India leather is now an exclusive geoproduct

East India (El) Leather, a vegetable tanned leather that has been a specialty of tanneries in Trichy and Dindigul for the last 160 years, has now been approved and registered as an exclusive geographic product by the Geographic Indications Registry of the Union Ministry of Commerce.

Registration under the geographic indications of goods (Registrations and Protection Act, 1999) will give the product an exclusive brand image similar to Darjeeling tea, Kanchipuram silk saris or Coorg coffee. The characteristic quality and reputation unique to the geographic location are indicative behind the logo and EI technology is a British legacy in the country.

Evidence is available that the exclusive tannery process utilizes cassia species, pungum oil and wattle bark extract as utilized in 1805 at a tannery near Chennai. It was in 1856 that a tannery unit was established using the so-called EI technique.

EI leather is very popular in Italy, France and other Western countries since it is the best sort of leather to manufacture garments, fancy handbags and suede leather shoes. The uniqueness of EI leather includes its special feel, the gloss and polish it accrues with use, its distinctive smell and the noise it makes when tapped. (Source: *Business Standard* [India], 23 July 2008.)

(Please see page 20 of Non-Wood News 17 for more information.)

INDONESIA

Fighting to keep islands above water

For more than a decade, Defitri Akbar has spearheaded a drive to involve local people in mangrove conservation in Riau Province. He and some colleagues have founded an NGO, Bahtera Melayu, which drew up two basic targets: (i) guided participation of coastal communities in a programme to save mangrove ecosystems; and (ii) the development of alternative incomes to reduce pressure on natural resources and surrounding environments.

The NGO has been successful in getting community groups to take the lead in managing 230 ha of local mangrove and to develop a honey production industry. It has also started a green generation education programme involving local youth. (Source: *The Jakarta Post* [Indonesia], 2 September 2008 in Community Forestry E-News, September 2008.)

Rinjani community push for forestry regulations

A community forestry programme in Lombok that allows farmers to take part in developing forest areas and in harvesting

NTFPs does not have farmer-friendly regulations. Farmers are now hoping to legalize their engagement in forest management.

"A permit for forest management would allow us to become wholeheartedly involved in developing forest areas and prevent us from violating the law. It would also clarify farmers' rights and responsibilities," said Artim, a member of a local farmers' cooperative unit.

The only legal standpoint farmers have for their involvement in the programme is the 1999 Forestry Law. The problem remains, however, that regulations related to this law tend to be counterproductive, if not contradictory. The farmer group has therefore requested the local Forestry and Plantation Office, legislative council members and NGOs to get together to produce a regulation on community forestry for the benefit of forest farmers. (Source: *The Jakarta Post* [Indonesia], 16 September 2008 in Community Forestry E-News, September 2008.)

Tiene tallos ramificados con gran cantidad de hojas, que constituyen su parte aprovechable. Éstas, son de forma ovalada con bordes dentados y una textura rugosa con muchas vellosidades, el tamaño es muy variable, desde 5 hasta 10 cm de largo dependiendo de la disponibilidad de agua. Sus flores son pequeñas, de color blanco; los frutos son cápsulas y en ellas se encuentran almacenadas las semillas, éstas son de color café, no mayores de 25 mm. Las plantas de orégano presentan flores y frutos todo el año, no obstante, en Yucatán, la mayor abundancia de flores y frutos se da entre noviembre y abril.

El aceite esencial de orégano mexicano, con el agradable olor de sus hojas, se encuentra en glándulas localizadas en las vellosidades o tricomas foliares. Este aceite tiene diversas propiedades antioxidantes, antibacterianas, antifúngicas e insecticidas, por lo cual además de ser muy atractivo como saborizante, también presenta importantes usos para la industria farmacéutica, alimenticia y cosmética.

En lengua maya el orégano se conoce con el nombre de *akil ché*, y es considerado un recurso natural con historia ancestral. En el pasado, el orégano mexicano se utilizó principalmente con fines medicinales para el alivio de enfermedades relacionadas con las vías respiratorias y padecimientos estomacales.

Debido a la abundancia de esta especie en el noroeste de Yucatán, y a la importancia de esta planta en la economía de las familias rurales, se realizó una investigación con el propósito de conocer las implicaciones ecológicas y socioeconómicas que conlleva la cosecha, comercialización y uso de este recurso forestal no maderero. La investigación fue financiada por el Centro de Investigación Científica de Yucatán (CICY) y la Comisión Nacional Forestal (CONAFOR).

En las comunidades estudiadas, la cosecha de orégano de monte es realizada principalmente por las mujeres mayas y sus hijos. La temporada inicia en la época de lluvias y dura aproximadamente de julio a octubre. Para que la cosecha inicie es necesario que el comprador llame y avise que está interesado en adquirir el producto. La confirmación del comprador resulta ser el detonador para que las mujeres de la comunidad salgan al campo e inicien la cosecha.

El proceso de cosecha es sencillo y no requiere herramientas. Se elije la planta,



MÉXICO

Mujeres mayas y orégano mexicano: del monte a la cocina

El orégano, esa planta olorosa, que utilizamos en muchas de nuestras recetas de cocina, está representado generalmente por dos especies de plantas distintas. La primera se conoce como orégano europeo (*Origanum vulgare*) y pertenece a la familia botánica Labiateae. Esta especie crece en zonas mediterráneas del sur de Europa, Grecia y Turquía. La otra especie es el orégano medicino (*Lippia graveolens*), perteneciente a la familia Verbenaceae, es una especie resistente a la sequía que se encuentra distribuida en los climas semiáridos de México y de América Central.

Lippia graveolens es una especie arbustiva perenne de entre 1 y 3,5 m de altura, con un crecimiento relativamente rápido y un ciclo de vida corto (5-10 años).

después se toma una de sus ramas y las hojas de ésta se tiran del centro de la planta hacia fuera, a esta actividad se le conoce con el nombre de "raspar o bajar el orégano". Una vez que las hojas han sido desprendidas se prosigue a guardarlas en un costal. Sucesivamente, se sigue raspando rama por rama hasta que se logra retirar entre el 75 y el 100 por ciento de las hojas. La técnica de cosecha no siempre es la misma, sino que varía de acuerdo a las costumbres de las mujeres. Algunas de las variaciones son por ejemplo no cosechar plantas con flor, no dejar hojas en la planta, cortar o quebrar las ramas, especialmente en individuos muy altos, encimar las ramas cortadas a un lado del camino y después retirar las hojas.

La jornada de trabajo en temporada de cosecha dura entre 4 y 12 horas aunque depende de la lejanía del sitio y del medio de transporte del que se disponga (a pie, bicicleta, triciclo o camión fletado). Dado que la mayoría de las personas van a pie, en cuanto llenan un costal emprenden el camino de regreso, pues el peso de éste no debe sobrepasar la cantidad que una mujer o un niño pueden transportar cargando en la espalda.

En un viaje de cosecha el peso promedio de hojas frescas es de aproximadamente 9,6 kg, dependiendo de la edad, sexo y habilidades de la cosechadora o cosechador. Si se cuenta con un triciclo y caminos para transportar la carga es posible que cada recolectora lleve más de un costal de hojas.

En el monte, el orégano crece en lugares pedregosos, pero no se desarrolla en suelos inundados. Se encuentra también en solares y en terrenos de cultivo asociados a huertos de cítricos y de pitahaya. En estos lugares no se siembra, más bien se tolera y cuida ya que crece de manera natural.

Una vez cosechado el orégano, el único proceso poscosecha es el secado al sol. Para realizar esto las hojas del orégano se extienden sobre un plástico, sobre los mismos costales, o directamente, ya sea en el solar o techo de las casas, incluso en aceras o calles. Cada media hora, aproximadamente, el orégano es removido con un rastrillo o una vara, con el objetivo de conseguir un secado pareja. Si el día es soleado, al cabo de 3 ó 4 horas el orégano está listo. Por el contrario si el día resulta nublado, el orégano puede tardar en secar hasta dos días. En estos casos es necesario recogerlo antes de que llueva o caiga el

sereno de la noche, y al día siguiente de nuevo se extiende exponiéndolo al sol. Una vez seco se coloca de nuevo en costales y se coloca dentro de las casas o en algún lugar bajo techo, para evitar que absorba humedad.

La cosecha finaliza cuando se cubre la demanda del comprador (tres o cuatro meses después) y avisa que no irá más a la comunidad esa temporada, es entonces que las cosechadoras quedan a la espera de su llamada para el próximo año.

El manejo del orégano en las comunidades visitadas, tiene un importante impacto en la economía de las cosechadoras, ya que representa un porcentaje considerable del ingreso monetario mensual que obtienen las familias. No obstante, este ingreso es temporal, solamente se obtiene durante la temporada de cosecha de la especie. Una familia, durante la temporada, puede cosechar y vender hasta una tonelada de orégano seco. En términos económicos, el orégano de monte es un producto que se puede incorporar a la cadena de mercado con un mínimo de inversión de capital. Además, la producción, cosecha y procesado no requiere de muchas habilidades o de tecnologías sofisticadas.

A partir de la información generada en el proyecto se observa que el aprovechamiento del orégano en las comunidades estudiadas, y en general en el estado de Yucatán, tiene un gran potencial.

(Aportación hecha por: Dra. Luz María Calvo Irabién, Centro de Investigación Científica de Yucatán, Calle 43 #130 Chuburná de Hidalgo, Mérida, 97200 Yucatán, México. Fax: 999 981 3900; Correo electrónico: lumali@cicy.mx)

Community forestry development in Mexico
The Tepehuano Forestry Development project is based on a participatory model that aims to increase the livelihoods of the Tepehuano community by strengthening human development and promoting the sustainable management of forest resources. The Tepehuano community of Santa María de Ocotán covers an area of 400 000 ha and has one of the highest levels of poverty in the country.

The project's mission is to promote community forestry development in the Nayar region by providing capacity building for the community to enhance entrepreneurial skills based on a sustainable forest model to supply timber and non-timber products for the whole



region. The project also strives towards the conservation and restoration of degraded areas.

The project is being implemented by Reforestamos México A.C. (a local Mexican NGO based in Mexico City), with financing by the private sector.

Reforestamos México, in collaboration with regional NGOs, has been able to coordinate social and corporate support to the region since 2005. This model has successfully been replicated in the neighbouring communities of Huichol and Tarahumara. The model's success is based on its ability to foster community participation in the creation of Community Forest Enterprises (CFEs), which in turn have empowered the community and led to the sustainable management of forest resources.

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NAMIBIA

San devil's claw is an international hit
San communities from the Nyae Nyae and Na-Jaqna conservancies generated more than RN\$400 000 during 2007 from the harvesting and sale of plant products. Similar or even better results are expected for 2008, as more than 1 000 harvesters are registered in both conservancies, researcher Dave Cole said recently. In a paper entitled *Botanical resources increasingly contributing to income generation for conservancies and their members* issued last month, Cole indicated that, to date, conservancies had collected

an income of RN\$288 561, with several more months of harvesting to go.

The Nyae Nyae Conservancy was formed in 1998, and the Na-Jaqua Conservancy in 2003.

The medicinal value of devil's claw (*Harpagophytum*) for the treatment of rheumatism, arthritis and other ailments of this type has been recognized by "Western medicine" only in the last 50 years. The first major exports from Namibia started in the early 1960s, and today the country is the largest exporter in the world, accounting for about 95 percent of the trade. Namibia currently exports on average about 400 tonnes of dried devil's claw per year, which represents a significant income for the country.

According to Cole, up until recently, devil's claw was harvested and traded but was characterized by unsustainable harvesting practices, exploitative prices paid to harvesters and inferior quality. However, in the last two years, funding from the Integrated Community-Based Ecosystem Management Project and the United States Agency for International Development, as well as the Life for Relief and Development programmes, have enabled the Working Group on Indigenous Minorities in Southern Africa and the Nyae Nyae Development Foundation Namibia to implement a sustainable harvesting programme, benefiting both the conservancies and individual harvesters. Harvesters are now organized into groups and receive training on sustainable harvesting and processing.

Organic certification allows for the product to be traced back to the area in which it was harvested, and by whom. Provision for the costs of covering the expenses related to organic certification have also been made, and the conservancies will be able to cover these costs themselves in the future.

Added Cole: "Not only do harvesters benefit from cash income, but the



Harpagophytum

organized harvesting and sale of devil's claw in these conservancies also contribute to empowering people to develop a sense of ownership and to take responsibility for the management of their resources. Clearly, however, given the extent of poverty in rural areas, the challenge is to identify additional products that can also contribute to income generation in these conservancies." (Source: *The Namibian* [Windhoek], 10 September 2008.)

Devil's claw fruit for forest community livelihoods

Four community forests in the Caprivi have earned more than RN\$200 000 from devil's claw (*Harpagophytum*) sales. Devil's claw, a plant that grows mainly in the Kalahari sands of Namibia, Botswana, South Africa and Angola and, to a lesser extent, in Zambia, Zimbabwe and Mozambique, has medicinal properties for the treatment of rheumatism, arthritis and other ailments, and was recognized by "western medicine" only in the last 50 years.

Devil's claw needs to be harvested with special techniques to conserve the plant for future use. These techniques were taught in workshops organized by the community forestry committees, which also organized the Ministry of Environment and Tourism permit necessary for harvesting.

Only community members who participated in the training were registered for harvesting and were given the necessary permit to ensure that the harvesting takes place under controlled conditions. In addition, the four community forestry committees carried out an effective law enforcement exercise to stop illegal harvesting and sales to illegal buyers. As with the harvesters, the buyers also need to be registered with the Ministry. (Source: All Africa.com [Namibia], 30 October 2008.)

NEPAL

Lokta paper

Lokta, also known as *Daphne bholua* or *D. papyracea*, is an indigenous plant of Nepal. Found at altitudes of 6 500 to 9 500 feet (1 981-2 896 m), its bark is traditionally used in the production of paper. Lokta plants are harvested by cutting the stem at ground level, while leaving the main root intact. Lokta regenerates naturally in two to three years. Using it as a source of raw material for paper has no adverse effects on the forest ecology of Nepal.



Growing in popularity in the international market as beautiful natural stationery, the paper has a long history of use. In Nepal, all legal and legislative documents were printed on the paper thanks to its durability. It can be preserved for a long period of time, is non-perishable in water, is free from germs and is highly resistant to insects such as silverfish and paper crawlers. Lokta paper is also excellent for wrapping precious stones since its soft fibres do not scratch stone surfaces.

The paper has a beautiful natural tan shade but can easily be dyed in water with other colours. It is ideal for production without machines and scraps of the paper can also be recycled simply. (Source: extracted from: *About lokta paper*. Kathmandu, Nepal. Available at: www.nepalipaper.com/1000883.html)

NEW ZEALAND

Indigenous tribes transform historic grievances into a bright future

A landmark agreement has been signed into legislation in the New Zealand House of Parliament as of September 2008. The arrangement transfers around 10 percent of the country's intensively managed planted forest to a collective of indigenous Maori people. This largest-ever settlement of grievances, which is valued at around NZ\$450 million and includes licence rentals accumulated since 1989, arose from nineteenth-century seizures of land and forests during European settlement of the country. The Maori have been engaged in grievance claims since the 1970s. As they are among the nation's poorest citizens, the economic benefits for those within the collective will be significant.

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NIGERIA
Study unveils medicinal plants for skin problems

Medicinal plants in Nigeria were considered by several researchers to form an important component of the natural wealth of the country, considering that the Nigerian tropical rain forest is a reservoir of chemical substances that can be used for therapeutic purposes.

Some of their ancient indigenous uses were discovered by "trial and error", which could not be proved by scientific theories although the results have been beneficial and efficient compared with conventional modern medicines. However, these ancient indigenous uses of the plants vary from one community to another. To improve communication, therefore, such plants need to be identified and documented according to the ailments cured, the preparations and administration of the herbs, as well as local and common names.

One such effort was carried out by researchers from the University of Benin who studied the medicinal plants used in treating skin diseases by healers in the Ovia northeast local government area of Edo state. The study, entitled: "Ethnomedicinal uses of plants in the treatment of various skin diseases in Ovia northeast, Edo state, Nigeria" was carried out by Dr R.K.A. Egharevba of the Department of Crop Science and Dr M.I. Ikhata in the Department of Forestry and Wildlife. It was published in the latest edition of the *Research Journal of Agriculture and Biological Sciences*.

The investigation included names and plant parts used, ailments cured, preparations and administrations of these herbs through the use of questionnaires and interviews of old and experienced rural people as well as herbalists.

In the survey, 41 plant species from 29 families were identified. These plants include some wild and uncultivated ones: *Xylopia aethiopica* (Guinea pepper), *Plukenetia conophorum* (African walnut), *Monodora myristica* (African nutmeg), *Afromomum melegueta* (alligator pepper) and some semi-wild plants such as *Dacryodes edulis*. They also include ornamental plants such as *Lawsonia inermis* (Dye) and herbs.

A total of 57 commonly used prescriptions for skin diseases were noted. Mixtures of plants were used in some

cases. Several medicinal plant parts were used in herbal preparations, such as leaves, stem and bark, fruits, seeds and roots; of all these, leaves were found to be used in 70-75 percent of the cases. (Source: *Nigerian Tribune* [Nigeria], 25 September 2008.)


PAKISTAN
Mushrooms and medicinal plants in Chitral
Mushroom collection in the dry temperate forest of Kalash Valley, Chitral

The Kalash Valley is located in the remote southern part of Chitral, an area of unique cultural and biological diversity. Natural forests in the area mainly consist of *Pinus wallichiana*, *P. gerardiana*, *Cedrus deodara* and broadleaf species such as *Quercus incana*. Medicinal plants, honey, pine nuts, wild vegetables and morel mushrooms are the most important NTFPs found in the valley and used by the local community to support their livelihood. A study was recently carried out to investigate the collection status of mushrooms in this location.



A variety of mushrooms grow in the dry temperate forest of the valley, including *Morchella esculenta*, *M. vulgaris*, *M. deliciosa* and others such as oyster mushrooms. Their local names are Quchi, Brangalu and Shunthi. Often keeping their harvesting locations a secret, local people rely upon traditional knowledge to locate the mushrooms. For example, it is believed that mushrooms often appear under specific trees, including *Juglans regia* and *Pinus wallichiana*. Morels are collected primarily for sale but are also occasionally used in traditional medicine. Harvested throughout spring and early summer (from March to July) the mushrooms are sold in the local market, often to intermediaries. *Morchella* fetch particularly high prices and thus play an important role in the economy of the community. The morel collectors are mostly poor villagers who practise mushroom harvesting on a part-time basis in addition to livestock keeping, firewood

collection and farming. Forty percent of the collectors are children, 27 percent women and 33 percent men. Morel collection is a labour-intensive activity requiring a great deal of devotion. Sometimes the collectors have to spend days in the forest.

Medicinal plants of Chitral to be conserved under an in situ approach

The dry temperate zones of Chitral offer a wide range of valuable medicinal and aromatic plants and the local communities living in the surrounding forests depend on the area resources for their rural health care as well as for their livelihood. As a result of deforestation, overgrazing and unsustainable harvesting, medicinal plants in the area are declining.

In order to conserve the medicinal plants in their natural environment, the Directorate of Non-Timber Forest Products (NWFP Forest Department, Peshawar, Pakistan) will introduce *in situ* conservation approaches in different parts of Chitral. Mr Iftikhar Ahmed, Assistant Director NTFP Office, Peshawar, has clarified that the main objective of this approach is to conserve the available medicinal plant resources and communicate the idea of sustainability in their use. Mr Ajaz Ahmed of the NTFP Office, Chitral stated that this intervention in the conservation of medicinal plants will be the first of its kind and will improve nature conservation and help to reduce poverty. The Directorate of NTFP is working in NWFP Pakistan for the promotion of NTFPs for community development and poverty reduction.

The study suggested future guidelines for proper planning and management of the dry, temperate forest of the valley for livelihood support of the poor local community. The Directorate of Non-Timber Forest Produce is facilitating the local community in the sustainable utilization of these resources.

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The camu camu value chain in the Peruvian Amazon

Camu camu, found growing along the riverbanks and lake shores of the Amazon Basin, contains the highest concentration of natural vitamin C in the world. A recent study (*Promoting forestry-product value chains in the Peruvian Amazon: the case of camu camu*) examined how the link between the various actors in the value chain, including collectors, processors, traders and buyers, remains weak. The camu camu chain is currently in the initial stages of development and a general lack of trust exists in the area among many of the actors.

The study revealed that local and regional government must become active as promoters and stimulators to improve relationships between those involved. Policies in the camu camu producing and processing regions must be created to improve knowledge and functions within the value chain. Finally, barriers to entry into the markets are in great need of attention, with a simplification of paperwork and a reduction in transaction costs highly recommended.

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Environmental services of the *aguajales* and the opportunities for a global business for the Loreto region, Peru

Angel Salazar of the Peruvian Amazon Research Institute (Iquitos) has written an article on *aguajales*, palm tree forests that occupy 5.3 million ha in the Peruvian Amazon and sequester large amounts of carbon. They play a role in the local economy by providing employment opportunities for local communities and by satisfying the high consumer demand for their fruit. Salazar's article describes the potential benefits offered by harvesting

aguajales and calls for increased efforts for their improved management, as well as for linking these ecosystems to environmental services payment schemes.

The fruits from the *aguajales*, the *aguaje*, are in great demand by the inhabitants of Iquitos. Fruits are consumed directly, or processed as refreshments, the *aguajina*, or as icecreams and popsicles. The demand generated by that way of consumption is satisfied by approximately 20 tonnes of fruits per day.

The marketing of the fruits generates a value chain that creates employment in both rural and urban areas. In Iquitos alone, close to 5 000 jobs are generated by the selling of *aguaje* fruits. Most of those employed are women, who generate their own employment.

The benefits that can be obtained by harvesting *aguajales* are much more diverse than those traditionally obtained. These are the so-called strategic products - those obtained by providing added value to the *aguaje* pulp - that include antioxidants, solar protectors and high-quality oils for the cosmetics industry. An additional benefit that could be obtained is the added value of the ecosystem through the possibility of obtaining payments for the environmental services that *aguajales* provide. (Source: Ecosystem Marketplace, August 2008.)



PHILIPPINES

Aguilar leads moringa drive

Las Piñas City is embarking on a massive planting of malunggay trees to boost the source of nutritional food and medicine for residents while protecting the environment. Mayor Vergel Aguilar said that, as more people experience hunger and poverty because of the high cost of food and health care, the local government must provide economic relief. Mobilized in the city-wide campaign are officials down to the 20 barangays and various urban poor groups that serve as partners in the local ecological programme.

Moringa (*Moringa oleifera*) or malunggay (kalamungan in the Visayans, kalamunge to Pampangueños, marunggay to Ilocanos and kalunggay to Bicolanos), is considered one of the world's most nutritious plants with versatile uses in agriculture, medicine and industry.

Food analysis shows that malunggay leaves contain 26 percent crude protein and are rich in vitamins A and C, iron and potassium. They also have medicinal value to treat arthritis, rheumatism, gout, cramp, boils and sexually transmitted diseases.

Mature seeds also produce high-value oil, called oleic acid, widely used in the food industry. The edible oil can lower cholesterol levels in the blood, improve lipid profiles and modify harmful inflammation. It also serves as a lubricant for fine machinery and its antioxidant properties are useful in the manufacture of perfumes, personal care and therapeutic products and cosmetics.

Aguilar urged residents to plant malunggay to tap its nutritional potential, especially for children, encouraging them to nurture trees amid the threat of global warming. (Source: *Manila Standard Today* [Philippines], 2 September 2008.)

NegOcc farmers urged to go into cocoon production

While sugar-cane workers in Negros Occidental (NegOcc) may dread the start of the off-milling season, another sector is actually in need of more workers. Thelma Watanabe, training coordinator of the Organization for Industrial, Spiritual and Cultural Advancement (Oisca) - Bago Training Centre (OBTC), said that more farmers must be encouraged to go into cocoon production to meet the increasing local and international demand for silk. "The fact that Negros silk is of very high quality makes this industry a very promising one for farmers in ... the entire archipelago," she added.

Since the start of the Oisca sericulture project in 1989, the Oisca Negros silk industry has come far. "From a handful of 50 farmers cultivating an area of about 20 ha of mulberry plantation, the number has increased to about 260 farmers now actively engaged in quality cocoon production in an area of not less than 170 ha fully planted to mulberry trees," she said.

Approval from the Cocoon Testing Centre in Japan paved the way for the establishment of a silk reeling plant at the Oisca Compound in Bago City, which has

the capacity to process 100 tonnes of fresh cocoons per year. Yet, "Oisca's actual production now of three tonnes silk yarn from approximately 30 tonnes of fresh cocoons per year is not even enough to supply the local market", said Watanabe.

"Silk has always enjoyed excellent market value. Today, people hear of Philippine silk and the prospect of job generation it can bring to the Filipinos: from the cocoon-producing farmers to the silk reeling workers, the weavers, dyers, embroiderers, handicraft makers and garment manufacturers," she stressed.

"Oisca International has always been concerned with how to help marginal farmers in rural areas ... Thus, the idea of starting an Oisca silkworm rearing project for silk yarn production in Negros Occidental was conceptualized," said Watanabe. The project has been supported by government and non-government agencies. (Source: Sun. Star [Philippines], 25 July 2008.)

Challenges and opportunities for the Philippine bamboo and rattan industries

Bamboo and rattan (B&R) are the most important NWFPs in the Philippines and other Asian countries. Many upland communities are dependent on the gathering of these products in both the natural forests and private bamboo farms for their livelihood. Similarly, employment in B&R factories and home-based industries is a major source of income for numerous rural and urban workers in the country. While the domestic market for these products in the Philippines is believed to be quite large, the export market has for many years been a significant and dependable source of foreign exchange.

However, several problems have caused B&R exports from the Philippines to decline, both in absolute and relative terms, during the last decade. These problems primarily relate to the scarcity of locally sourced raw materials, rising labour costs and stiff competition in the global market. Rattan exports, mostly furniture, have dropped from a year-high of US\$129 million during the period 1995-2000 to a year-low of US\$66 million during 2001-2006. During 1978-1985, when the Philippines dominated the rattan furniture export market, export revenues rose at an annual rate of 38 percent. By contrast, exports contracted at 5 percent annually from 1995 to 2006. Relative to other types

of furniture export, the share of rattan furniture export diminished from 33 percent in 2001 to 23 percent in 2006, with the latter period dominated by wood furniture. Basket and wickerwork have likewise steadily decreased from US\$78 million in 2001 to US\$52 million in 2006. Nevertheless, export destinations have remained focused on the medium- and high-end segments of the market.

As a result of the above unfavourable development in the Philippine B&R industries, the country faces the challenge of ensuring that these industries continue to provide an important source of income and livelihood for the dependent sectors. These include the upland and forest communities that provide the raw materials and the rural and urban workers engaged in the production and marketing of NWFPs in small home-based and medium- to large-scale factories. Towards this end, these industries must take advantage of the available opportunities and face the challenges on both the domestic and global fronts and the supply and demand sides. On the demand side, the opportunities relate to the still growing B&R global market estimated at US\$11 billion. Demand for high-quality products in developed countries is expected to remain strong. The Philippines is in a good position to supply this market thanks to its competitive edge in craftsmanship for providing premium quality products for the medium- and high-end market segments. Trade liberalization provides opportunities for gaining greater market access not only in the country's traditional export markets but in the new markets of the Middle East and Eastern Europe. Because the major supply constraint is the shortage of basic raw materials, the Philippines needs to pursue concerted efforts in plantation development and in managing the remaining supplies in the natural forests, particularly for rattan. Current supply management efforts for B&R must be integrated into the existing and future community-based forest management programmes.

Support for research and development in production, processing and utilization must continue in key public research institutions. This must be complemented by private sector research to enhance production efficiency, product development and adaptation strategies in the sourcing and use of alternative raw materials. There should be continuing government support

in financing and marketing for small- and medium-scale enterprises, B&R.

Overall, a comprehensive and strategic course of action in order to remain competitive requires the following: effective raw material supply management; continuing R&D for product, process and market development; and favourable support systems (policy, institutions and infrastructure) in the entire value chain from government and private sectors.

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Ornamental rattans

In the Philippines, during garden shows and market days in the rural and urban areas, ornamental rattans, specifically *Calamus discolor* are usually displayed for sale. Along the national roads in the provinces of Laguna and Quezon, as well as in Nueva Viscaya, Ifugao and other communities in the Cordillera Provinces, ornamental rattans are included in their collections of orchids, ferns and other native ornamentals sold to tourists, motorists and other plant enthusiasts.

Some village people from these upland communities gather the rattan fruits of this species, extract the seeds, germinate them, grow them in small poly-bags and then sell. Others just collect the wildlings from the forests, pot them and sell.

Other rattan species that have potential as ornamentals include species belonging to the genus *Korthalsia* because of their beautiful fishtail-like leaves.

Income from ornamental rattans is not much, but can add to the livelihood of the community. (Source: A.M. Palijon and A.B.

Lapis. 2008. *Production of rattan fruits and their products as community enterprise*. A paper presented during INBAR's Global Rattan Forum, Haikou, Hainan Island, China. 8-11 January 2008.). Rattan Newsletter, ITTO, Philippines; ASEAN Rattan Project 4, 6 June 2008.)

RWANDA

KIE to research bamboo as an alternative energy source

Kigali. The Kigali Institute of Education (KIE) will be jointly involved with the University of Antwerp in Belgium in research on bamboo as an alternative energy source. The researchers will try to ascertain whether bamboo could be a dependable alternative source of energy to fossil fuel in order to reduce pollution.

Dr Geert Potters, a bioscience engineer and lecturer at the Belgian University, said that preliminary findings from research started two years ago proved that bamboo is a potential alternative energy. "Bamboo is chipped, then fermented and it produces biogas. It also reduces soil pollution," he added.

James Vuningoma, KIE Vice Rector said that currently in Rwanda bamboo is used to manufacture baskets and furniture, but research could lead to another commercial benefit to the country. (Source: *The New Times* [Rwanda], 28 November 2008.)

SAUDI ARABIA

Kingdom to develop biodiversity strategy

Jeddah. The Council of Ministers yesterday decided to develop a national strategy for preserving biological diversity, involving the protection of all kinds of species, natural locations, hereditary resources and training human resources for its development. The existing National Committee for Biodiversity should develop the strategy, Culture and Information Minister Iyad Madani said in a statement to the Saudi Press Agency.

Custodian of the two holy mosques King Abdullah, who chaired the council meeting, said that the national committee should also prepare a database on the kingdom's biodiversity and classify all known types of environments, their geographic locations, their history and the changes that they have undergone or that may take place.

The Council of Ministers ordered the National Commission for Wildlife

Conservation and Development to set up a National Committee for the Programme of Man and the Biosphere, to undertake the preservation of biodiversity, including identifying locations for establishing biosphere reserves. (Source: *Arab News* [Saudi Arabia], 19 August 2008.)

SENEGAL

Protecting livelihoods through mangroves

Mangroves, one of the world's richest ecosystems, are declining in Casamance, southern Senegal, and thinning forests spurred the Senegal-based non-profit Oceanium to plant 6 million mangrove trees in a bid to reverse deforestation, thereby boosting fish stocks and reviving livelihoods. Up to 15 000 youth from 130 villages helped with the two-month replanting effort, just completed, which was the first of its kind in Africa, according to Binetou Diagne, Oceanium's spokesperson. (Source: *Ziguinchor*, 14 October 2008 (IRIN).)



SOLOMON ISLANDS

Honey production encouraged

Honey production has the potential to help the economy and rural farmers engaged in small and medium business activities. According to officials from the Ministry of Agriculture and Livestock, honey production in the country is currently very low because not many farmers are involved in the industry. They said more farmers must engage in honey production because the honey of the Solomon Islands is one of the best and there are also many honeybees.

"There is no need to import honey for sale in the shops if more farmers are engaged in the production of honey within their communities and homes," one officer said. "By producing and selling honey, people can earn their living." (Source: *Solomon Star* [Solomon Islands], 15 July 2008.)

SUDAN

Export marketing of Sudanese gum arabic

This policy note is a product of the Multi-Donor Trust Fund – National. This is one of the two trust funds established under the authority of the Comprehensive Peace Agreement (CPA), which was signed in January 2005. The trust funds that assist the Government of National Unity and the Government of Southern Sudan are both administered by the World Bank.

The Sudan is the world's largest producer of gum arabic, the dried exudate produced from the trunk and branches of the *Acacia senegal* tree, known as hashab or hard gum, and the *A. seyal* tree, known as talha or flaky gum. Gum arabic is one of the four important agricultural export commodities from the Sudan, along with livestock, cotton and sesame.

All the gum arabic produced in the Sudan, mostly hashab, is exported. However, considerable year-to-year variations and overall declining gum exports from the country – the consequences of two severe Sahelian droughts (in the mid-1970s and mid-1980s), political unrest and inadequate marketing arrangements – have resulted in the emergence of new gum-producing countries, chiefly Chad and Nigeria, which produce mostly talha.

Gum arabic is a pale white to orange brown solid that breaks with a glassy fracture. If stored properly, it stays unaltered for decades.

Over the last 20 years, gum arabic export values amounted on average to US\$40 million annually. Yet, over the last 15 years, the Sudan's share in the world markets has declined sharply and is now below 50 percent. World exports of talha are almost on a par with exports of hashab. While there has been government intervention in the marketing of all agricultural exports in the past, gum arabic is the only one for which government controls remain.

Importance of gum Arabic production to Sudanese rural people

The livelihoods of up to six million Sudanese people, who live in traditional

rainfed farming areas, where rural poverty is in the range of 65 to 90 percent, depend on gum arabic. Primarily produced by small-scale farmers (who give priority to food crop production, usually sorghum or millet, to secure family nutritional needs), gum arabic represents a crop diversification strategy to mitigate crop failure. In addition, the acacia tree's long lateral root system reduces soil and wind erosion. The tree has a regenerating impact on the land. However, gum arabic production does compete with food and cash crops for labour resources and land allocation.

Agricultural operations, including gum arabic harvesting, are primarily financed by village traders using the *sheil* system. The traders typically provide cash, seeds, tools and basic commodities (water, sugar, tea) for the households to get by during the "hunger gap". Farmers pay back in kind at prices determined early in the season and usually integrating significant credit charges.

Gum arabic is a complex polysaccharide that has food, pharmaceutical and technical applications; its known uses go back about 5 000 years. It is used for its properties as an emulsifier, thickener, binder, stabilizer and adhesive. It is believed that soft drinks and confectionery represent 70 percent of the demand for gum arabic.

National policies and structures

The current gum arabic marketing policy has not been beneficial to the majority of rural poor producers. This has led to reduced production and consequently exports, declining for the past 40 years at an average rate of 2.2 percent per annum.

One of the key commitments made recently by the Government of National Unity under the Joint Assessment Mission (JAM) framework was to "abolish the export monopoly" over raw gum arabic. This commitment has not been implemented.

However, the development of the processing industry over the last four years has resulted in increased domestic competition for raw gum and, in turn,

better prices paid to farmers as well as more value-added captured in the Sudan. This positive development comes at a propitious time as increased consumption of soft drinks and confectionery products, and the rapid development in health and dietetic products are boosting world demand for gum arabic.

The future of the Sudanese gum arabic industry

Decontrol of the gum arabic export market could increase export revenues for the Sudan and raise significantly the income of small-scale farmers. In addition to existing inadequate marketing arrangements, two issues that will have to be addressed by future policies and reform actions are the limited participation of gum producers in the development of the sector and a non-conducive business environment that does not favour private sector expansion. Recent developments in the domestic gum sector indicate the way forward: government support to producer associations has reaped good results and could be scaled up throughout the gum belt; the expansion of domestic processing, which resulted in better prices paid to farmers, also offers good prospects for reviving the sector.

The implementation of appropriate policies and investments to support improved gum processing and marketing will generate additional income for small-scale producers, thus contributing significantly to the Millennium Development Goal that calls for halving the share of populations suffering from extreme poverty and hunger. Such measures would also help increase the level of domestic value added, which would have a positive effect on the country's overall economic growth.

In addition to the necessary policy and institutional changes, the future of gum arabic is also tied to better management of natural resources. Innovations in carbon finance offer an exciting opportunity to use forestry as a means to promote rural and national development. But seizing this opportunity will require the political will to move forward with reforms that improve the governance of natural resources.

Ultimately, success in reforming the gum arabic sector will depend on concerted action with the international development community. It is necessary to level the domestic and international trade fields, provide improved public goods,

empower small-scale producers and address climate change. At stake are the livelihoods of millions of rural poor. (Source: Sudan Multi-Donor Trust Fund, MDTF-National Sector Policy Note, 31 December 2007.)

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SURINAME

An innovative conservation group working with indigenous tribes

Deep in the Suriname rain forest, an innovative conservation group is working with indigenous tribes to protect their forest home and culture using traditional knowledge combined with cutting-edge technology.

The Amazon Conservation Team (ACT) is partnering with the Trio, an Amerindian group that lives in the remote Suriname-Brazil border area of South America, to develop programmes to protect their forest home from illegal gold miners and encroachment; improve village health; and strengthen cultural ties between indigenous youth and elders at a time when such cultures are disappearing even faster than rain forests.

THE TRIO INDIGENOUS GROUP

The Trio (or Tiriyo) are a Carib-speaking indigenous group that lives in the forests of southern Suriname and bordering areas of Brazil, primarily in small- to medium-sized villages headed by a grandman or chief.

The Trio rely on small-scale slash-and-burn cassava (manioc) cultivation as their principal source of food. This starchy staple is supplemented with fish and game taken from surrounding rivers and forests. The forest provides them with other important resources, notably medicinal plants, building materials, and dyes and resins.



ACT is providing the Trio with equipment and training so that "indigenous park guards" can map – and thereby someday gain title – to their lands. The Trio use Global Positioning System (GPS) units to document geographic features as well as the location of hunting grounds, places of spiritual significance and sites rich with medicinal plants and other important resources. Key to the process is bridging the generation gap between indigenous elders and youths: the shaman provide the younger rangers with the historical and cultural information needed to add critical details to the maps. In addition to mapping, the indigenous park guards patrol forest areas for illegal activities, including mining and collection of wildlife for the pet trade.

ACT is also promoting the transfer of ethnobotanical knowledge to Trio children through the "Shaman's Apprentice Programme" where schoolchildren learn the traditional uses of medicinal plants. The programme is combined with an indigenous health clinic that operates next to a conventional health clinic. Both offer free services to villagers.

A critical part of these programmes are the village shaman, medicine men and women who serve as custodians of the immense biological knowledge of a people who have survived in the Amazon rain forest for generations. No-one understands the secrets of these plants better than these indigenous shaman but, like the forests themselves, this floral genius is fast disappearing as a result of deforestation and profound cultural transformation among younger generations. The combined loss of this knowledge and these forests irreplaceably impoverishes the world of cultural and biological diversity. (Source: Mongabay.com [United States of America], 28 July 2008.)

THAILAND

AFM scents fragrant success

Asia Forestry Management Co. (AFM), Thailand's largest agarwood producer, plans to build up its brand overseas, aiming for growth at the same blistering pace as Red Bull. AFM founder Chokechai Lavichant aims to follow in the Red Bull founder footsteps by developing a presence in the export rather than domestic market. However, his company's production will be based in Thailand along with its agarwood plantations.

Overseas demand for agar oil extract is already on the rise, especially in the Middle East, where clients will pay almost any price for the oil, considered one of the best for making perfumes and fragrances in cosmetics. Beyond the Middle East, South Asia and Japan are also prominent markets, said Mr Chokechai, who adds that agarwood extract is a luxury product because of its limited availability.

Agarwood products are widely known as oud, the term used in the Middle East, where agarwood has been highly prized for centuries. The oil is also a base for fragrance production in Europe and is used in Japan's pharmaceutical industry. Agarwood residue is the main raw material for scented joss sticks.

In the global market, premium agar oil extract is priced between 5 000 and 8 000 baht per tora (12 cc) or 400 000–700 000 baht per litre.

AFM started to build its agarwood plantation four years ago after gathering financial support from private investors. It has just refined the first production of oil from the first crop of its agarwood plantation early this year. Mr Chokechai said AFM has its factory on a 500-rai (80 ha) agarwood plantation in Trat, which it plans to expand to double capacity to 1 000 tora a month.

Commercial production of agar was prohibited in Thailand for centuries. The trees that produce the valuable oil remained on a list of protected plants until seven years ago, when the country recognized the product's economic potential.

Since then, agarwood has become an industry. However, plantations require huge capital. "We managed to raise funds from investors last year by offering two options – a return of 21.4 percent for two years' investment and 168 percent for four years' investment," said Mr Chokechai. As

a result, the company gained its first capital of 20 million baht, which helped it to start manufacturing last year. Next year, it plans to raise an additional 50 million baht for the subsequent stage.

Mr Chokechai said that in natural conditions, agarwood takes from ten to 40 years to be productive, and that less than 5 percent of plants produce oil, depending on soil quality and humidity. But, with artificial cultivation, oil can be extracted within three years, making the business commercially viable.

The company has an agar oil export licence from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which guarantees its production will not cause deforestation.

Exim Bank's research division reported that the agarwood industry rose to an export value of 20 billion baht for Thailand during 2006–07. (Source: Bangkok Post [Thailand], 16 September 2008.)

TOGO

Promotion des plantes aromatiques et médicinales

L'OPPAM est un organisme de promotion des plantes aromatiques et médicinales du Togo créé pour aider les communautés de base à tirer profit de leur environnement par une meilleure utilisation de la biodiversité végétale.

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TURKEY

Turkish valley to be developed as ecotourism area

The 40 000-ha Cehennem Dere Valley (Hell Stream Valley), which is home to rich flora and fauna, has been found highly suitable for a variety of ecotourism activities, such as trekking, terrain bicycling, flora discoveries and observation of natural life, according to the study by experts from the Eastern Mediterranean Forestry Research Institute and Istanbul University.

As part of Turkey's first ecotourism project, a group of experts has examined a forest of cedars and spruces in the Çamlıyayla district of the southern province of Mersin to determine its fitness as an ecological site.

Dr Ersin Yılmaz, Director of the Institute, said that the valley has been scientifically proved to be appropriate for seven types of ecotourism activities: observation of birds, flora discovery trekking, nature trekking, discovery trekking for NWFPs, discovery walking, bicycle tours and observation of wildlife. Of these, he said that observation of bird species has priority.

Pinus brutia (Turkish pine), *Pinus thunbergii* (black pine), the Taurus cedar and the Taurus spruce are major examples of foliage that make the valley an attractive spot for ecotourism, he added.

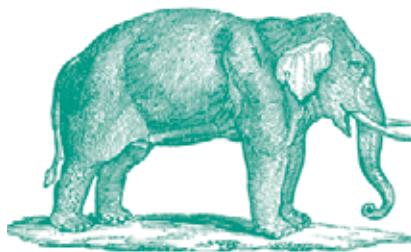
The valley is also home to various caves, cascades and geological forms. The project is expected to serve as a model for further projects in the field of ecological tourism in Turkey. (Source: Turkish Daily News (subscription) [Turkey], 25 July 2008.)

UGANDA

Wildlife body in ecotourism venture

The Uganda Wildlife Authority (UWA) has signed an agreement worth US\$3 million (about USh4 billion) with a German investor to manage wildlife that is not in gazetted parks.

Lillian Nsubuga, UWA publicist, said in a statement that the investor, Christian Weth, would invest in ecotourism and game farming in Luweero and Nakaseke districts, which have animals such as warthogs, leopards, bushbucks, hyenas and Uganda kobs. "There is huge potential for tourism, sport hunting and game farming in this area. We will bring tourists to see the animals," Weth said. He owns



the Uganda Wildlife Safaris, a tour and travel agency, which would work closely with district officials.

UWA Executive Director, Moses Mapesa, said UWA's task would be to attract people who are interested in vermin animals to hunt the animals. UWA is planning to extend the programme to other parts of Uganda, the statement added. (Source: New Vision [Kampala], 8 September 2008.)

VIET NAM

Bamboo reserve promotes conservation, relaxation

The Phu An Ecological Bamboo Museum and Botanical Reserve, also known as the Phu An Bamboo Village, is a multipurpose centre promoting scientific research and ecosystem conservation while educating the local community about environmental protection and the value of ecotourism, said project head Dr Diep Thi My Hanh, a lecturer at the Ho Chi Minh City (HCMC) University of Natural Sciences.

In addition to providing a research centre and laboratory for students and academics, the reserve is also an ecotourism site, located in Binh Duong Province's Ben Cat Commune, some 30 km from HCMC.

The vast ecological reserve with its 130 bamboo species, including many rare varieties collected from every corner of the nation, is open for tourists. Its botanical garden is known for its gorgeous landscaping, brought to life with lush bamboo clusters and brilliantly coloured flowers.

The reserve also features a museum, which displays tools, musical instruments and art made out of bamboo, as well as an endangered species room where rare plants and insects are kept. There is also a small theatre where visitors can watch documentaries about bamboo. The site features a bamboo maze made of rare species.

The VND11 billion (US\$665 100) reserve, 12 km from the provincial capital of Thu Dau Mot, opened to the public last April and covers nearly 10 ha.

The project is a collaboration between the HCMC University of Natural Sciences, the Binh Duong Province administration and authorities from France's Rhone Alpes region and the Pilat Natural Reserve. (Source: *Thanh Nien Daily* [Viet Nam], 1 September 2008.) ♣



Enthusiasm is the best protection in any situation. Wholeheartedness is contagious. Give yourself, if you wish to get others.

David Seabury