

## ANGOLA

### German NGO for dissemination of natural medicine

At a recent seminar on natural medicine, the NGO German Agrarian Action has suggested the practice and dissemination of natural medicine in Angola with a view to facilitating people's access to primary medical assistance. According to the NGO's representative in the country, natural medicine is a good alternative for countries such as Angola, mainly in the rural areas, where many people have no access to primary health care, nor access to drugs that are often costly and unattainable by many. He said the natural medicine is advantageous, because it can be manufactured in all communities, is cheaper and everyone can produce a garden for medicinal plants.

An Angolan physician, João Baptista Nsende, explained that the African Union has an interministerial commission that addresses the continent's pharmacopy and Angola, as a member country, must adopt a position on the matter and regulate the use of medicinal plants. He explained that in Angola there are about 30 000 medicinal plants with which a large variety of diseases can be treated, mainly those most frequent such as malaria, diarrhoea and respiratory infections.

The seminar participants analysed about 60 medicinal plants from the tropics, their therapeutic effects and dosage and learned how to prepare some medicines and ointments from plants. [Source: AngolaPress [Angola], 26 February 2007.]

## ARMENIA

### The forest is receding

Precious plants are nearing extinction in the forest area surrounding Vanadzor. Agricultural scientist Lilia Bayramyan has identified such medicinal herbs and wild plants as nettle, thyme, mint, cat thyme, motherwort, Solomon's seal and St John's wort. Her observations in and around Vanadzor's central bazaar last spring revealed that about 4 tonnes of herbs and wild plants were collected and sold each day during that period. "If this trend continues, the reserves of precious plants will be exhausted in two years," Lilia Bayramyan concludes.

In addition to this ruthless collection of herbs, her studies also suggest that the plants are endangered above all by logging

in the area. "Since logging began, the temperature has risen and these precious plants began withering in the sunlight. Now they can only grow in the upper or transalpine layer of the forest. And people, in their turn, keep picking them."

The result of all this is that in the formerly forested areas of Vanadzor, precious plants are being replaced by herbaceous plants, which are gradually turning the forest areas into a transalpine zone in which the temperature is continuously rising. Favourable conditions for grass have been created and wild horseradish, trefoil and coltsfoot have overtaken the former forests and, growing rapidly, prevent any other tree or plant seeds that end up here from taking root. [Source: Hetq Online [Yerevan, Armenia], 8 January 2007.]

### Two organizations sign memorandum of cooperation for biodiversity protection

The World Wide Fund for Nature (WWF) Armenia and Armenian Public Relations Association (APRA) signed a memorandum of cooperation on 10 April 2007.

The office public relations department says the memorandum attaches importance to the protection of Armenian biodiversity and the sustainable use of natural resources. The cooperation aims to react quickly and provide accurate information for decision-makers and the public. WWF Director Karen Manvelyan raised the hope that "cooperation with APRA will step up public education in environmental protection as well as attract public attention to biodiversity risks". [Source: Panorama.am, 11 April 2007 via CENN Weekly Digest, 13 April 2007.]

## BELIZE

### IACHR Commission says the Government of Belize must protect the indigenous people of Toledo

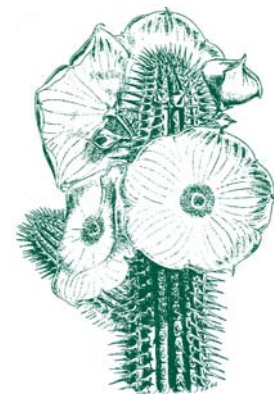
By permitting oil exploration on indigenous lands in the Sarstoon/Temash National Park in the Toledo district, the Government of Belize is violating treaty obligations and a 2004 ruling by the Inter-American Commission on Human Rights (IACHR). This is the official view of the environmental group Global Response.

The Sarstoon/Temash National Park is Belize's second largest national park, encompassing an area of 41 000 acres (approximately 16 592 ha) of pristine forest and coastline along the southern border

with Guatemala. The park includes 16 miles (approximately 25.7 km) of Caribbean coastline and contains 14 ecosystem types including undisturbed mangrove, the only comfre palm forest (comfre palm is a rough, hairy perennial herb, not a tree; its roots contain tannin and are used widely in herbal medicine and treatments in Belize) and the only known lowland sphagnum moss bog, also known as bog moss and found in wet boggy soil, growing in clumps. The moss is permeated with capillary cells that retain water and is used in potted plants and, in some countries, also as a dressing for wounds in Central America. The park is home to 226 species of birds, 24 species of mammals, 22 species of reptiles and 46 species of butterflies.

In 2003 the Government of Belize signed an agreement with the Sarstoon/Temash Institute for Indigenous Management (SATIIM) giving it authority to manage the park and for the last four years SATIIM has been taking care of the park and making sure environmental laws are obeyed. SATIIM represents five Ketchi Maya and Garifuna indigenous communities in the area and is internationally recognized as an organization with legal powers to enforce the law. [Source: The Reporter [Belize], 5 January 2007.]

(Please see page 34 for more information on sphagnum moss.)



*Hoodia gordonii*

## BOTSWANA

### *Hoodia gordonii* – a rare medicinal hope

Tshabong. Some Bokspits residents call this plant *seboka* while others know it as *tlhokabotshwaro*. Outsiders have named it bushman's hat and Queen of the Namib, among others. Scientifically, however, the wild plant is known as *Hoodia gordonii* and is reputed to have medicinal properties.

Found in the Bokspits region, the plant is now being grown commercially to benefit the communities of southern Kgalagadi where it grows wild. Local Khoisan communities, however, have long known about the special medicinal value of the plant and have chewed its succulent stems to suppress hunger.

Duncan Basima of the Department of Forestry and Range Resources said the plant was in high demand internationally and that they have decided to cultivate it domestically to benefit communities where it grows wild. The plant species they have cultivated contains the active ingredient P.57 which suppresses hunger.

He said his department started a communal cultivation project in Bokspits to generate income for residents and create national capacity in *Hoodia* cultivation. Four communities in the Bokspits area have been mobilized and trained to cultivate the plant. The project, funded by the African Development Fund for two years in cooperation with Veld Products Research & Development, will help reduce poverty in the arid Bokspits area and communities will be able to earn a living from the plants. However, Bokspits residents will have to wait until 2009 to harvest their first crop of medicinal plants as they only started the project in October last year.

The General Manager of Veld Products Research and Development said multinational pharmaceutical companies were interested in the plant, which grows wild in Namibia, South Africa and Botswana. He said the *Hoodia gordonii* project was still in the cultivation stage and that his organization was trying to train communities on how to conserve and harvest the plant for commercial use. He said that he was trying to encourage people to plant *Hoodia gordonii* in their own plots since there is not much in the bush that could be used for commercial purposes. It takes three to four years for the plant to be ready for harvest.

South African scientists have been testing *Hoodia gordonii* and they discovered that the plant contained a previously unknown molecule that replicates the effect glucose has on nerve cells in the brain, fooling the body into thinking it is full. The appetite suppressant properties of *Hoodia gordonii* have now been developed and *Hoodia* products are marketed in many Western countries where obesity is a problem. (Source: Botswana, 27 March 2007.)



## BRUNEI DARUSSALAM

### Firms and groups invited to propose projects to tap nation's forests

Private companies and groups are welcome to propose projects to the Ministry of Industry and Primary Resources and its Forestry Department to develop pharmaceutical and even cosmetic products derived from the country's rich rain forest resources.

"Tropical rain forests in Brunei Darussalam are very rich. We want to explore ways to make use of the richness of our resources, not only for timber but also for non-timber resources," Mahmud Yussof, Acting Deputy-Director of the department said in an interview, noting that 78 percent of the country is covered in thick rain forest teeming with valuable plants that can be used for medicine. "Brunei Darussalam definitely has the potential to create a market in this area. We have very rich forests here where there are local medicinal and herbal plants. One such type of tree is called *gaharu*, a local species that can produce fragrance. Thailand and the Middle East have already ventured into this."

Conservation of the rain forest to develop these types of economic activities is apparent through Brunei Darussalam's involvement in the Heart of Borneo project during the signing of the Heart of Borneo Declaration earlier this week. (Source: BruDirect.com [Brunei Darussalam], 15 February 2007.)

(Please see page 62 for more information on the Heart of Borneo project.)



## BULGARIA

### Parliament approves Biodiversity Bill on first reading

The Bulgarian Parliament approved its Biodiversity Bill on first reading. The bill stipulates that the Ecological Assessment and Environmental Impact Assessment are to be enforced when investment proposals

for protected areas are filed. The amendments are a result of Bulgaria's commitments to the European Commission, thus meeting the requirements of ecological network, Natura 2000. (Source: FOCUS News [Sofia, Bulgaria], 15 March 2007.)

### Bulgaria produces 8 000 tonnes of honey, half of which is exported

More than half the honey produced in Bulgaria is exported to other countries, mainly in the European Union, the chairman of Sofia's Bulgarian Apiarist Union announced at an apiculture seminar. Bulgaria produces an average of 6 000–8 000 tonnes of honey, 4,000–5 000 tonnes of which are exported. Bulgarian honey consumption is very low: 150–200 g/person/year.

Bulgarian apiarists have some clashes with legislation amendments, which imposed tax levying on their production. (Source: FOCUS News [Sofia, Bulgaria], 5 April 2007.)



## CAMEROON

### From a taboo to a delicacy: the evolution of eating snail meat in the Bakossi landscape area

Within the last two decades, the eating of snail meat has not only moved from being a sociocultural taboo among the people who inhabit the Bakossi landscape area in Cameroon, but has evolved to represent an important protein food and one of the key income sources for many households. Many snail species are eaten in the area, but the most popular is *Achatina achatina*, mostly found in the forest zones of Cameroon.

Situated in the southwest and littoral provinces of Cameroon, the Bakossi landscape area harbours three key montane forest sites: Kupe, Bakossi and Muanenguba, renowned for their significant biodiversity and sociocultural values. These forests cover an area of about 900 km<sup>2</sup> featuring among Cameroon's most important montane forests with an exceptional level of endemism and biological diversity. Richer in plant species diversity than the adjacent Mount Cameroon, with 2 435 species, it is the richest rain forest site in Central and West Africa, and home to many primates. The local population of over 150 000 people continues to depend on the resources of

these forests for their livelihoods and income (via hunting, farming, tourism and drinking-water). The forests are also the icon of the cultural and spiritual heritage of the Bakossi (the dominant tribe of the area). This unique biodiversity and sociocultural values, however, are threatened by overhunting, agricultural encroachment and illegal logging.

As recently as 20 years ago, people in the Bakossi landscape area still perceived snails in general as inedible. This stigmatization went on in the area for another decade until the Bakossi verified that other Cameroonians in bigger towns such as Kumba and Mamfe actually loved eating snails. Then in the mid-1970s traders came from Kumba to buy snails. The snails actually brought in income even for non-snail eating Bakossi households, significantly subsidizing livelihoods. The snails were more valuable than many thought. Then medical advice started pointing at snails as an important and cheap source of protein and consequently some Bakossi slowly began to develop relatively sociable attitudes towards them. At this point, hunting to raise income was more popular than hunting to eat.

As snail hunting and sales gained ground owing to the increasing market, there was a glaring upshot on their availability. Snails that were once easily seen near people's homes started becoming rare. Snail hunting was commonly done at night (in low temperatures) especially by children, who carried with them flashlights and lamps.

It was still uncommon, however, to find Bakossi people who consumed snails publicly. Slowly and steadily, however, the taboos associated with snail eating started fading away and some Bakossi started finding it normal to eat snails in public. Consequently, the market for snails in the area further expanded and the hunting rate increased.

As people in the area became increasingly familiar with snail hunting, more and more lessons were learned and basic scientific discoveries made and developed. After returning from snail hunting, some hunters either ate all their catch or ate and reserved some for sale, while others sold them all. It was through this process that a certain Enuge Augustine, today President of the local snail farming NGO Progressive All Purpose Common Initiative Group (PAPCIG) realized that the snails his children had reserved

(covered with a bucket) for sale, laid eggs, which eventually hatched to produce juvenile snails. From this experience, he built a box, in which he transferred the eggs and the hatched snails. An American Peace corps volunteer who was working in the area advised him to contact WWF Cameroon on his findings.

Support given to him by WWF not only helped him to realize the status of PAPCIG, but enabled PAPCIG to benefit from some material, technical and financial support that helped erect a 10 000 capacity contemporary snail farm in Tombel, which has not only served as an income-generating farm for the group and the employment of some unemployed youth, but has also been of significant assistance to research.



Having embedded itself as meat by virtue of its taste, cooked snails are today sold in different parts of the Bakossi land, on streets and in hotels, etc. The meat, especially when spiced with pepper and other spices from the forest, serves as a real appetizer for beer consumers and also as an important alternative for commonly consumed meat (cattle, goats, chickens, etc.), bushmeat and fish.

Having recognized poverty as one of the key causes of forest and species reduction in the area, WWF Coastal Forests Program (WWF-CFP), embarked on lending its support to PAPCIG, as one of the approaches for increasing snail availability in the local market, and managing the pressure (mostly from snail hunters) on snails in the wild. Over 15 community-based organizations (CBOs) exist today in the area benefiting from WWF-CFP's organizational, human (capacity development), financial and physical (material) support.

The CBOs are not only supplying live snails but some have evolved to transformation levels. Like beekeeping in the area, a transformation and sales unit (where the quality of snails is controlled, they are packaged in sachets and preserved in deep freezers for sale) was set up by Community Action for Development (CADEV) in 2006, hence adding value to their

products. A full sachet of 250 g is sold at 500 CFA francs (about US\$1). Up to March 2007, CADEV made an average profit of 35 000 CFA francs (US\$63) from processed snail sales monthly, excluding the sale of other related snail components such as empty snail shells used for calcium production. It is worth noting that most of the snail farming CBOs in the area sell their live snails to the CADEV transformation unit, where they receive the full cost of their live snails on the spot and are given bonuses at the end of each quarter.

Like the locally produced natural honey that is known to generate an annual income of 4 400 000 CFA francs (US\$8.000) for one of the beekeeping CBOs in the area, snail sales are gradually also becoming a real income provider although it is hard to find anyone depending exclusively on snail farming and sales for survival. The activity is most often secondary, given that farming forms the mainstay of the people in the area. But its contribution to the socio-economic development of households in the Bakossi landscape area cannot be underestimated.

The direct implication of snail farming as an income provider to many Bakossi households and its indirect impact on biodiversity conservation, by virtue of its alternative force for bushmeat, makes it lucid for WWF-CFP to support the activity.

Today, snail consumption has not only evolved to gain the status of a delicacy in the Bakossi culture, but serves as a satisfactory alternative source of meat among a significant part of the population. There is also a considerable drop in the hunting of snails in the wild, in favour of farming them.

However, snail farmers are concerned about both the incessant attacks by predators (black flies, reptiles, rats, ants, etc.) on the snail farms and other important constraining factors including saturation of the local snail market. More support is critical to help in predator management and the marketing of snails. International market networks that can boost snail farmers' economic power are unknown. A positive start would be to carry out studies on the snail international market network and demand. The National Association of Snail Farmers in Cameroon (NASFARM), founded in 2006, is poised to do this, but given its infancy, certainly needs help for this to be realized. (Contributed by: Ngwene Theophilus Nseme, WWF-Coastal Forests Program, PO Box 1169, Bota-Limbe, Cameroon. E-mail: nngwene@yahoo.com)



### Adaptación de especies de bambú de clima templado en Chile

El Instituto Forestal, INFOR, realizó el 25 de abril en la ciudad de Valdivia un Seminario de lanzamiento del proyecto «Adaptación de especies de bambú de clima templado en Chile», seleccionado en el XIII Concurso Nacional del Fondo de Fomento al Desarrollo Científico y Tecnológico FONDEF del Conicyt.

El proyecto tiene como objetivo general adaptar especies exóticas de bambú de clima templado para uso industrial, desde la Región Metropolitana hasta la undécima región, incluyendo la Isla de Pascua. Esta especie es considerada como una de las que experimenta mayor tasa de crecimiento dentro de los vegetales, y sirve como forraje, alimento, producción de pasta y papel, protección de riberas y ríos, artesanías, muebles, construcción y textiles, entre otros.

La adaptación y plantación industrial de estas especies en Chile será una nueva fuente de ingresos para los pequeños y medianos agricultores, debido a la entrega de materias primas industriales y su utilización directa, ya sea en construcción, tutores, cercos, fabricación de muebles, alimento, entre otros. Además, uno de los beneficios de esta especie, es que puede ser cosechada anualmente, a diferencia de las rotaciones forestales tradicionales. *Fuente:* Informativo Forestal Diario de INFOR, miércoles 11 de abril de 2007.

### Orquídeas silvestres ancestrales

El bosque chileno y su campiña, aunque contienen menos especies en total que los bosques tropicales, constituyen una reserva mundial de biodiversidad, dado el alto grado de endemismos locales. Entre los descendientes de estos antiguos linajes únicos en el planeta, se cuentan las orquídeas terrestres chilenas.

En los escasos fragmentos de bosque nativo que aún subsisten en Chile, hay algunas áreas donde surgen las orquídeas silvestres, que aún conservan una condición prístina. Por ello, conocer y conservar estas plantas endémicas amenazadas no es sólo una carrera contra el tiempo, sino un objetivo importante en la protección de nuestra flora herbácea. Esta riqueza florística, con altos niveles de exclusividad, ha sido reconocida por la comunidad científica internacional como un hotspot de biodiversidad.



Las orquídeas son fuentes de bienes y servicios que van desde valores estéticos expresados a nivel del paisaje, hasta valores económicos asociados a determinados productos exportables, tanto como flor cortada, como en maceta. En este marco, la Fundación para la Innovación Agraria (FIA) ha apoyado de manera permanente el desarrollo de la biotecnología agropecuaria al prestar ayuda, tanto financiera como técnica, en dos Proyectos de Domesticación y Mejoramiento Genético de Orquídeas Silvestres del Género *Chloraea*.

Con esos dos proyectos de investigación se persigue, además de poner fin a su disminución acelerada, obtener un producto original, renovado y atractivo, con alto valor agregado, que compita ventajosamente en el mercado internacional.

Has sido un trabajo multifacético, pionero, exigente, prologado y apasionante, lo que permitirá, gracias al esfuerzo y perseverancia de un puñado de investigadores y al apoyo constante del Gobierno de Chile, a través de un organismo del Ministerio de Agricultura, junto al resguardo de estas especies únicas, diversificar la opción como país emergente en la producción de flores bulbosas.

Para posicionarlas, tanto en nuestro medio como en el extranjero, es importante que a las orquídeas terrestres, ahora cultivadas, se les reconozca la identidad de su prolongado endemismo, como un valor histórico-cultural, designándolas flores emblemáticas de la celebración del Bicentenario de la República, que está próximo a cumplirse.

*Fuente:* Extraído de un artículo de Enrique Matthei Jensen, Ejecutor Proyectos FIA in Revista Chile Forestal, Año 2006, N° 321.



### Chinese company doubles stevia production capacity

Qufo, China. Sunwin International Neutraceuticals, Inc. (SUWN), a leader in

the production and distribution of Chinese herbs, veterinary medicines and one of the world's leading producers of all natural, zero-calorie stevia in China, announced today that it has completed construction of its new stevia manufacturing facilities. These new facilities are capable of producing an additional 300 tonnes of premium stevia per year, increasing annual bulk production by approximately US\$15 million.

The new facilities will use proprietary technology developed by SUWN to process the seeds of the *Stevia rebaudiana* plant, enabling the company to produce the highest-grade stevia in the industry. The company anticipates that this additional production will be marketed to the pharmaceutical industry in China, Japan and the Republic of Korea as well as to other countries such as Singapore, Malaysia, Thailand and India. *[Source:* NPIcenter [press release], 9 January 2007.]



### Quality honey produced in Sancti Spiritus

Honey is once more ratified as one of the main exports in the Cuban central province of Sancti Spiritus, where over 500 tonnes of the product have been sold to date, especially to European countries. The processing plant in this territory, which receives the honey from Pinar del Rio up to Camaguey province, was able to increase production above scheduled plans. *[Source:* Escambray [Cuba], 28 March 2007.]

### Camagüey boosts bamboo plantations

The reforestation plan in the eastern province of Camagüey is devoting special attention to boosting bamboo plantations since bamboo has disappeared from more than 600 ha over the last five years; 70 ha have been planted, approximately half of that planned last year. In 2007, the sowing programme includes 40 ha.

The Forest State Service branch office in Camagüey said that the bamboo reforestation has tackled certain problems. Most of the plantations are located near livestock water sources and the plant's leaves are used as food for the cattle. It is also a raw material widely used in the construction of furniture and fences and in the pharmaceutical and paper industry. *[Source:* Radio Cadena Agramonet [Cuba], 19 March 2007.]

## DEMOCRATIC REPUBLIC OF THE CONGO

### Greenpeace spotlights rain forest damage

The environmental group Greenpeace called for urgent action on Wednesday to prevent illegal logging in the rain forests of the Democratic Republic of the Congo, accusing international companies there of "causing social chaos and wreaking environmental havoc".

In a report that accused the World Bank of failing to stem the problem of illegal logging, Greenpeace said over 15 million ha (37 million acres) of rain forest had been granted to the logging industry since a moratorium was agreed by the Government in May 2002. The group's report, "Carving up the Congo", also accused international logging companies of deception and intimidation to obtain timber.

Of the 60 million people in the country about 40 million depend upon the rain forests to provide essential food, medicine and other NTFPs along with energy and building materials. And the forests are critical for the survival of wildlife, including gorillas, chimpanzees and bonobos, the report said.

Meanwhile, the World Bank has acknowledged that over the last three years no money whatsoever has been paid in taxes by logging companies to local communities to provide essential services such as schools and hospitals.

"This leaves these people not only without the forest that provided their food, shelter and medicine, but without the benefits they had been promised," Greenpeace said.

The Democratic Republic of the Congo has the second-largest primal tropical forest in the world with 86 million ha (212 million acres) of which 60 million ha (148 million acres) are potentially exploitable for logging. [Source: Sapa-AFP in *Citizen* [South Africa], 12 April 2007.]

## ETHIOPIA

### Tapping into bamboo

A training class held by Chinese experts changed the life of one impoverished farmer in a bamboo-growing village 300 km from Addis Ababa. In 2005, Solomon Gessesse participated in a bamboo-processing class in Addis Ababa and later established a bamboo factory there, hiring 13 workers. His monthly income now exceeds 12 000 birr. In contrast, another bamboo-processing facility nearby with five employees, whose owner did not

participate in such training, earns only 1 000 birr/month.

Ethiopia processes abundant bamboo resources, covering 1 million ha and accounting for 67 percent of the total bamboo groves in Africa. However, for a long time bamboo production was very low with bamboo processing remaining at the primary stage with low added value. China has a developed bamboo industry with much experience in bamboo growing and processing. As a member of the International Network for Bamboo and Rattan (INBAR), China actively participates in and promotes South-South cooperation. While developing its own bamboo industry, it also renders financial and technological support to other developing countries, helping them utilize their bamboo resources and train their own experts.

In 2005–2006, the Chinese Government cooperated with INBAR to hold two training courses for bamboo industry development in Ethiopia, training 97 bamboo growing and processing technicians. In 2006, a total of 23 Ethiopians attended the bamboo processing course. Chinese experts started their courses from scratch – from selecting the bamboo, making bamboo strips, bamboo dyes and creating moulds to weave new types of small bamboo baskets, bags, lampshades and curtains. They also introduced the Ethiopians to a new method of cutting several bamboo pieces into strips of the same width at one time.

In addition, Chinese experts have helped hold two workshops in Ethiopia on bamboo development with more than 160 participants. The Beijing Summit of the Forum on China-Africa Cooperation (FOCAC) also provided a new opportunity for China to cooperate with Ethiopia in bamboo development. In December 2006, a Chinese economic and trade delegation, tasked with following up on FOCAC, went to Ethiopia and

attended the workshop on promoting the sustainable development of the bamboo industry in the country.

Some large enterprises in Ethiopia have also begun to invest in the bamboo industry, including an Ethiopia-United States joint venture that has invested in bamboo groves covering 400 000 ha. It has signed agreements with three large Indian paper mills to supply bamboo pulp, worth US\$130 million within three years. Meanwhile, a Chinese mining enterprise plans to invest in making paper from bamboo. [Source: *Chinafrica*, February 2007, Vol. 2, No. 2; [www.chinafrica.cn](http://www.chinafrica.cn)]

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### Ethiopian Biodiversity Conservation Institute striving to utilize and conserve medicinal plants

The Ethiopian Biodiversity Conservation Institute announced that it has been undertaking, through its Medicinal Herbs Care and Sustainable Conservation project, various activities to enable the community to utilize medicinal plants that could be cultivated in backyards and conserve those found in the field with over 16.2 million birr.

Ethiopia produces 56 000 tonnes of medicinal herbs annually, 87 percent of which grow in the forest while people cultivate the remaining 13 percent in their backyards, said project coordinator Dr Fasil Kibebew. The medicinal herbs will bring in revenue that covers 8 percent of the annual budget and will also cover 42 percent of the Government's expenditure for the procurement of medicines. Currently, medicinal herbs have a US\$62 billion transaction in the international market, he said, further stating that efforts are under way to enable the country to obtain a share of the market.

As part of efforts to utilize the herbs by processing them in factories, Addis Ababa University has succeeded in preparing an anti-tapeworm for animals with a 93 percent reliability.

Field gene banks have been established in Wondo-Genet and Goba to preserve the plants and 300 medicinal plants in Wondo-Genet and 247 medicinal plants in Goba are under protection. These plants that should



"Riches of the forest: for health, life and spirit in Africa"

be preserved in their origins are under protection and care in Bale National Park, Adele, Workiti and Goba forests, Dr Fasil said, adding that the institute is supporting the local community to utilize the plants.

The project has distributed improved stoves among the community to deter them from using the plants for firewood. It has also multiplied over 1.3 million seedlings and distributed them to the community to be planted in their backyards. [Source: *The Ethiopian Herald*, 4 March 2007.]

## GUATEMALA

### Ornamental greens from the Maya Biosphere Reserve: the Rainforest Alliance's Certified Xate Initiative

Villagers in the Guatemalan community of Uaxactún subsist primarily on income earned from the collection of NTFPs, such as fruits, gum, resin and xate, an ornamental palm leaf. Their forest home, once a major Mayan city, lies within the confines of the Maya Biosphere Reserve, the largest protected area in Mesoamerica. In addition to hundreds of Mayan ruins, the 5.2 million acre (2.1 million ha) reserve boasts an astounding diversity of plant and animal life.

In recent years, land clearing and forest fires have been destroying the forest expanse at an accelerating pace. Which is why the Rainforest Alliance, an international conservation organization, has been working with Uaxactún villagers and others to create an incentive for the protection of their forest home. In addition to certifying Uaxactún for sustainable timber harvesting, the Rainforest Alliance, in collaboration with the community, has established guidelines for the sustainable harvest of the xate palm, also known as chico (*Chamaedorea* spp.). Thirty million xate fronds are delivered each year to the United States of America and Canada for Palm Sunday services. Xate exports contribute over 1 million dollars annually to the Guatemalan economy and in the Selva Maya, where nearly 50 percent of the population has no formal education, wild xate harvesting generates about 10 000 jobs, especially for women.

When only a few leaves are removed from the plant at a time, the fronds are allowed to regenerate. However, the increased demand for xate combined with an absence of standards and management practices, have resulted in serious

challenges to the sustainability of the plant. Not only have the palms become threatened by overharvesting, but the workers who collect them have been venturing further into the forest, often collecting other threatened plants and seeds as they go. Since the establishment of the standards in July 2005, the community of Uaxactún together with nearby Carmelita have sent one shipment of sustainably harvested xate per week to Continental Floral Greens of San Antonio, Texas, United States of America. These shipments represent an income of more than US\$100 000 per year for the impoverished communities, more than half of which goes directly to the xate collectors.

The Rainforest Alliance explains that before linking up with Continental Floral Greens, harvesters sold their xate to intermediaries for a much lower price. Most of the leaves had defects, so they ended up in exporters' dumps. The Rainforest Alliance has encouraged xate collectors to cut only quality leaves and leave more fronds on the palm, which permits faster regeneration. They now sell their leaves for twice as much as they did previously.

In addition, according to the Management and Conservation Organization (OMYC), which manages the community's forest concession in the Maya Biosphere Reserve, women who until recently had no cash income now earn between US\$6 and \$7 per day harvesting, selecting and packaging xate for export.

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*Chamaedorea* spp.

## GUYANA

### Guyana: United Kingdom High Commission donates money to GMTCS

The British High Commission recently made monetary donations to a social welfare and sustainable development society. According to a press release, the British High Commissioner presented cheques to the Help and Shelter and the Guyana Marine Turtle Conservation Society (GMTCS).

The money donated to GMTCS is the third part in a project aimed at building capacity for the indigenous people of northwest Guyana to assist them to manage their natural resources effectively and to undertake a preliminary assessment of certification for local organic NTFPs. According to the press release, the project started last July and has resulted in NTFPs from the area being sold in the local markets. Additionally, six persons were trained as tour guides and a map of the area's natural resources has been drawn. [Source: *Stabroek News* [Guyana], 3 April 2007.]

## INDIA

### Jharkhand to upgrade sericulture production

To upgrade silk production in Jharkhand, the Central Silk Board (CSB) and state industry department has initiated a joint venture project of a perspective plan for sericulture development with an investment of Rs151 crore. Jharkhand at present produces 100 tonnes of raw silk and targets to reach 350 tonnes within the next six years. The state produces tasar, mulberry and eri silk, with the regions of West Singhbhum, Seraikele-Kharsawan and Santhal Pargana serving as breeding grounds for cocoon cultivators.

In this venture, the Government plans to undertake infrastructure development, plantation activities, training and value addition of raw silk projects in the current fiscal year. The Ranchi-based Central Tasar Research and Training Institute would help in the project by providing services of training, research and development and technology transfer to farmers.

At the moment sericulture is being carried out on plant species such as arjuna, saal, asan and the mulberry tree but the Government's focus would be on non-mulberry production. [Source: *Fibre2fashion.com* [India], 5 April 2007.]

## Trade figures on gums and resins

Gums and resins	2002–2003 (tonnes)		2003–2004 (tonnes)		2004–2005 (tonnes)		2005–2006 (tonnes)	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Gum arabic ( <i>Acacia nilotica</i> )	86.31	7 341.24	101.85	8 172.15	168.78	12 730.93	1.39	14 825.84
Asian gum	285.33	75.01	359.84	49.89	66.4	7	–	–
African gum ( <i>Acacia senegal</i> )	129.31	22	13.21	–	6.51	–	1.44	–
Assafoetida ( <i>Ferula asafoetida</i> )	473.91	514.23	744.21	902.12	731.63	985.1	1 269.42	528.52
Benjamin ras	1.2	118.5	0.38	26.47	–	34.6	–	60.09
Benjamin cowrie	1.84	–	–	–	–	–	–	40
Karaya gum (Indian tragacanth) ( <i>Sterculia urens</i> )	1 119.83	–	429.69	3	773.1	1	0.65	10.82
Acacia gum	–	–	–	–	–	–	–	–
Mastic gum ( <i>Pistacia lentiscus</i> )	0.64	4.72	1.24	1.86	0.45	5.01	–	–
Other natural gum	645.53	777.73	761.17	453.36	459.44	195.75	206.51	48.68
Other gum resin	968.7	148.67	582.48	121.22	139.29	176.37	29.37	–
Guar gum refined split ( <i>Cyamopsis tetragonoloba</i> )	41 337.02	–	38 072.3	473	48 738.47	0.33	14 951.54	16.22
Guar gum treated and pulverized	69 513.86	–	77 797.59	0.25	76 298.65	0.3	134 190.53	69.55
Guar meal	1 097.46	6.37	4 691.36	–	4 611.34	4.6	3 146.54	–
Copal ( <i>Agathis</i> spp.)	49.66	1 593.93	0.65	1 188.52	–	1 540.77	–	–
Dammar Batu	0.22	4 206.35	14.13	5 221.77	2	9 477.63	–	–
Other resins	69.52	147.04	8 611.44	470.46	2 832.82	1 507.29	–	–
Myrrh ( <i>Commiphora</i> spp.)	–	12.2	11.86	23.45	11.7	13.82	0.08	12.82
Olibanum or frankincense ( <i>Boswellia serrata</i> )	6.5	16.25	7.98	1	12.08	7	–	4.22
Natural resin enamels	–	0.715	–	–	–	–	–	–
Balsam of Tolu ( <i>Myroxylon balsamum</i> )	0.01	68.56	–	–	–	–	–	–
Pepper oleoresins	1 043.8	0.5	–	–	–	–	–	–
Turmeric oleoresins	235.9	1.42	–	–	–	–	–	–
Cardamom oleoresins	2.45	–	–	–	–	–	–	–
Celery seed oleoresins ( <i>Apium graveolens</i> )	324.77	–	–	–	–	–	–	–
Nutmeg oleoresins	178.38	0.01	–	–	–	–	–	–
Oleoresins of spices, nes	77.32	–	–	–	–	–	–	0.25
Other balsams/oleoresins	349.08	133.69	770.51	10 497.04	877.77	5 822.78	549.8	3 809.6
Agar agar w/w modified	15.48	30.83	24.93	43.44	20.01	67.46	3 146.54	–
Other mucilage thickeners w/n modified, derived from locust beans or locust bean seeds	242.16	2.7	420.42	33.39	1 224.68	43.12	–	3.6
<b>Total gums and resins</b>	<b>118 256.192</b>	<b>15 222.665</b>	<b>133 417.24</b>	<b>27 682.39</b>	<b>136 975.12</b>	<b>32 620.86</b>	<b>157 493.81</b>	<b>19 430.21</b>

Source: Monthly Statistics of Foreign Trade of India, Vols I and II, Export and Import, 2007. Directorate-General of Commercial Intelligence and Statistics, Government of India, Kolkata.

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#### Determination of sustainable harvesting limits of commercially important NTFPs in natural tropical forests of Madhya Pradesh

The conservation of commercially important forest resources in state-owned

natural tropical forests is a challenging task because these forests constitute a common property resource and local people have the right of free access to collect NTFPs. Owing to increased commercial utilization of forest resources, local user communities are encouraged to overexploit forest products, ignoring the traditional practices of sustainable harvesting of utilizable resources from natural forests. In the prevailing forest management system, extraction of NTFPs is not at all sustainable, either in ecological or in socio-economic terms. A participatory

approach involving local forest-dependent user communities seems to be an inevitable tool for sustainable management and *in situ* conservation of valuable indigenous forest resources.

Keeping this as the main objective, the Madhya Pradesh State Forest Research Institute, Jabalpur, India has taken the lead to determine the sustainable harvesting limits of overexploited NTFPs in natural forests, employing an integrated participatory approach in the tribal-dominated tropical forests of Madhya Pradesh under a research project

sponsored by the Council of Scientific and Industrial Research, New Delhi, Government of India.

In this project, eight site-specific commercially important NTFP species, *Chlorophytum tuberosum*, *Curculigo orchioides*, *Dioscorea daemona*, *Curcuma angustifolia*, *Bauhinia vahlii*, *Plumbago zeylanica*, *Asparagus racemosus* and *Embelia robusta* were selected to determine sustainable harvesting limits in natural forest ecosystems. An innovative experiment was designed with various treatments based on different harvesting intensities, i.e. control (no harvesting), T<sub>1</sub> (20 percent), T<sub>2</sub> (40 percent), T<sub>3</sub> (60 percent) and T<sub>4</sub> (80 percent), where underground plant parts (roots/ rhizomes/ tubers) are harvested. In the case of *Bauhinia vahlii*, however, the leaves of which are harvested, an additional treatment, i.e. T (100 percent extraction) was undertaken. All the treatments were done in five replications. Regeneration capacity of the species was estimated for all the treatments with five replications by using a regeneration index method.

The results of the experiment were quite alarming, particularly for *Chlorophytum tuberosum*, *Dioscorea daemona* and *Asparagus racemosus*, which allowed harvesting of only 18, 38 and 32 percent of plants respectively to maintain sustainability in natural forest conditions. However, other species, i.e. *Curculigo orchioides* (75 percent), *Curcuma angustifolia* (60 percent), *Plumbago zeylanica* (60 percent) and *Embelia robusta* (80 percent) showed comparatively higher sustainable harvesting limits. *Bauhinia vahlii*, which contributes substantially (Rs5 000–7 000/family) to the annual income of forest-dependent communities, was found to be in a very precarious condition because of repeated overexploitation of its leaves. Almost all the plants were found to have lost their flowering, fruiting and leaf growth vigour. Leaves of this species are in high demand for making plates and cups and are harvested twice in a year in summer as well as in winter. The bark of the stem of this species is also used for making rope. Findings of the experiment have suggested that 70 and 80 percent of harvesting in summer and winter can be permissible to maintain leaf-sprouting vigour of the plant in natural forest ecosystems, both in qualitative and quantitative terms.

It has been established from the study that the development of skills and

capabilities of local user communities (as key stakeholders) at the grassroots level for the sustainable use of forest resources is the only viable tool for the conservation and sustainable management of forest resources in natural forest ecosystems of the country.

The present study is a part of the project "Determination of sustainable harvesting limits of utilizable forest resources in tribal-dominated natural tropical forests of Madhya Pradesh". (Contributed by: Dr R.K. Pandey (Senior Scientist and Head) and Dr (Mrs) Satvant Kaur Saini (Research Associate), Ecology and Environment Division, State Forest Research Institute, Jabalpur, pin: 482008, Madhya Pradesh, India. E-mail: pandeyrk1@yahoo.com or satvant@rediffmail.com)



*Curcuma tumeric*

#### Jaipur's lac industry is booming

The lac industry began in the eighteenth century in the narrow lanes of Jaipur's old city. Today, it is a booming business with its products finding their way to places as far away as Europe.

In recent years, the industry has successfully broken away from its traditional image of making bangles to produce exquisite jewellery and gift items. Today, over 5 000 families in Jaipur are involved in the industry. Jaipur alone accounts for annual exports worth Rs700–800 million.

Several local artisans have even been awarded for their contribution and creative innovations. Yet these artisans have to toil hard and long in difficult conditions to give shape to their designs. "We have to work on hot furnaces where lac is melted. Working conditions are very harsh, especially during summer," said one manufacturer of lac items.

But the artisans seem to forget about their hardships when they proudly begin to

talk about taking the cottage industry to global levels. (Source: *Hindustan Times* [India], 11 April 2007.)

#### Boost to bamboo cultivation

The Department of Agriculture and Cooperation has launched a programme on a National Bamboo Mission in India from 2006 to 2007 to enhance the production and productivity of bamboo. The mission aims at i) promoting the growth of the bamboo sector through an area-based regionally differentiated strategy; ii) increasing the coverage of the area under bamboo in potential areas, with improved varieties to enhance yields; iii) promoting marketing of bamboo and bamboo-based handicrafts; iv) establishing convergence and synergy among stakeholders for the development of bamboo; v) promoting, developing and disseminating technologies through a seamless blend of traditional wisdom and modern scientific knowledge; and vi) generating employment opportunities for skilled and unskilled persons, especially youth.

The proposed bamboo plantation activities under the mission would generate about 50.4 million workdays. In the nursery sector, total estimated employment to be generated every year will be around 9.7 lakh workdays. Besides this, there will be employment generation in both skilled and unskilled segments in the handicraft sector.

The proposed scheme is environment friendly and economically viable in nature. The project proposals submitted by the state governments for financial assistance under the mission during 2006 to 2007 are under consideration by the Department of Agriculture and Cooperation.

At present, bamboo is being cultivated in 89 575 km in the country. (Source: Press Information Bureau (press release) [New Delhi, India], 12 March 2007.)



"Riches of the forest: food, spices, crafts and resins of Asia"



## INDONESIA

### Indonesia's paradise lost – and regained

The United Kingdom's Royal Society for the Protection of Birds (RSPB) is enlarging its vision and is moving into tropical bird conservation in a serious way as part of a partnership that is seeking to save one of the world's greatest wildlife hotspots. With its sister organization in Indonesia and BirdLife International, the RSPB has secured a long-lasting management concession on a stretch of lowland rain forest in Sumatra which has more breeding bird species than the whole of the United Kingdom.

The Harapan rain forest hosts at least 267 types of birds and may hold more than 300. It is also home to a striking range of animal species, as well as the world's richest and most diverse flora. Yet for all its natural treasures, the forest has been placed under dire threat by the pressures of illegal logging and conversion to timber and palm oil plantations, which have reduced the Sumatran rain forest to a fraction – less than 5 percent – of its former 16 million ha.

Up to now, sites earmarked for timber production or plantation crops in Indonesia could be used for nothing else. But the ecosystem restoration decree, which was introduced by the Indonesian Ministry of Forestry, permits the management of forests to obtain benefits labelled "ecosystem services". These include storing carbon, controls on pollution and protection for wildlife, all of which, says the partnership, will help nearby human communities.

Directly benefiting will be the 150-strong Batin Sembilan tribe, a nomadic people that will continue to harvest rubber, honey, fruits and rattan for its own use. "With intact forest remaining, they will have the choice of maintaining their traditional lifestyles," said Sukianto Lusli, executive-director of Burung Indonesia. "They will also have the option of becoming wildlife monitors or forest wardens, as will other people in the local area." There will be other jobs for the Harapan community as forest guides, in nursery management and the preparation of land. Field staff are being recruited now and the site will eventually be managed by a team of about 80 people. The development of a research station and ecotourism are long-term possibilities.

Harapan is the Indonesian word for hope. The forest stretches 35 km east to

west and 40 km north to south, and represents about 6 percent of remaining lowland rain forest in Sumatra. It is two degrees south of the equator and conservationists hope that its humid conditions will hasten regeneration. Furthermore, the ecosystem restoration decree means other private management bodies can also apply to restore forests in Indonesia.

The RSPB is about to launch a United Kingdom fundraising campaign for Harapan with a target of UKE2 million over the next 12 months. Similar campaigns are beginning in other European countries and Japan. The initiative has already received significant financial support from the European Commission and Conservation International's Global Conservation Fund.

In the long term, the RSPB, Burung Indonesia and BirdLife International plan to establish a trust fund of UKE9 million. Annual interest payments from the fund will cover the forest's management costs. (Source: *The Independent* [United Kingdom], 3 April 2007.)



## ISLAMIC REPUBLIC OF IRAN

### The Republic is to improve medicinal herb cultivation in 2007

The Islamic Republic of Iran's Agriculture Jihad Ministry will put the medicinal herbs comprehensive plan into practice for the next five years to develop the output, said the Ministry's Ornamental Plants and Medicinal Herbs Office.

One of the plan's goals is to export medicinal herbs. To this end, almost 58–60 000 ha are under cultivation, with an

expected yield of 73 000 tonnes of medicinal herbs. The Ministry plans to find the proper farm lands for herbs, train its experts and producers, and cooperate with standards institutes to produce quality medicinal herbs. (Source: *MehrNews.com* [Iran], 13 April 2007.)

## JAMAICA

### Allspice: high demand for pimento

Pimento, or allspice as it is known internationally, is currently impacting the culinary world. It is one of the main ingredients in jerk seasonings and mixed spices.

The growing demand for the product, not only for local consumption, but for use overseas and in the hospitality industry, has opened up a niche market that is expected to be very profitable for local farmers.

The Ministry of Agriculture and Lands is reporting that the pimento industry is earning an estimated US\$5 million annually from exports of whole berries, leaf, berry oils, liqueurs and other value-added products. There is also an increasing demand for pimento berries to satisfy the expansion of the jerk market.

With the sudden interest in the product, there are certain guidelines and procedures that must be followed to get the product from its natural state to acceptable standards for export. (Source: *Jamaica Gleaner* [Jamaica], 15 February 2007.)

## KENYA

### Kenyan President prohibits trade in sandalwood

Kenyan President Kibaki has made the highly priced sandalwood tree a protected species for a period of five years, representing a ban on trade. According to the announcement, the ban on the sandalwood tree's exploitation and trade is effective from 14 February this year, meaning that there will be no cutting or trading of the species and those caught trading in the products will be prosecuted.

The species, also known as *Osyris lanceolata*, is threatened with extinction because of indiscriminate exploitation and illegal trade.

The species can fetch between Sh1 million and Sh3 million depending on its age. (Source: *SomaliNet* [United States of America], 6 April 2007.)



### Ecotourism in the Lembus forest

What started as a community concept on ecotourism is now a regional story on good community conservation practice. When the people of Koibatek approached VolunteerforAfrica (VFA) to help them come up with a management concept for the Lembus forest, little did they know that this would hatch into a project that would change their lives, at least in so far as forest management and culture exposure are concerned.

With funding from the Netherlands Committee for the World Conservation Union (IUCN), the community, through technical advice from VFA's Sustainable Natural Resources Management Programme, have established an Ecotourism and Cultural Centre, which has the following advantages.

**Income.** The Ecotourism site is providing an income to community members, which include a youth group and a women's group, operating the site. Membership comes from people living around the forest and income derived means that the people are able to benefit directly from the forest by improving their living standards. It also makes them believe in the conservation of the forest.

**Forest conservation and/or sustainable use.** With ecotourism, the people now have some knowledge on the importance of forest and wetland conservation.

**Education and information.** The Ecotourism site is serving as an education point for the community on the virtues of the environment and shows them why they really need to protect the Lembus forest, now and for the future.

**Culture.** The Ecotourism site is designed in a traditional way, using traditional materials. This is enhancing a local understanding and preservation of Tugen cultural values. (Source: Web site of VolunteerforAfrica, [www.volunteerforafrica.org/](http://www.volunteerforafrica.org/))



### Une expérience de promotion de PFNL à Tominian

L'ONG nationale Sahel Eco a bénéficié d'un financement de la FAO à travers le mécanisme d'appui à la foresterie du Mali et TREE AID, une ONG britannique pour la mise en œuvre d'un projet dénommé Projet de promotion des entreprises forestières villageoises (EFV). D'une durée initiale de trois ans (septembre 2005-septembre 2007), le projet a accompagné 160 exploitants forestiers, essentiellement des femmes, à la création de 14 entreprises autour de trois produits à savoir le miel, le fruit de tamarinier et les amandes de karité. Ce projet s'appuie sur une approche particulière appelée ADM (Analyse et développement de marché).

Avec un chiffre d'affaires de plusieurs millions par entreprise, les bénéficiaires ont pris des mesures pour la bonne gestion des ressources dans la forêt appelée DUWA dont leur vie dépend. Parmi ces mesures on peut citer, la redynamisation des comités de surveillance de la forêt chargés de veiller sur le respect des règles consensuelles de gestion. Les entrepreneurs ont tissé des alliances stratégiques avec les caisses d'épargne sur place pour faciliter l'accès au crédit et avec des partenaires commerciaux comme l'ULPK (Union locale des productrices de karité) de Diôla pour faciliter l'écoulement de leur produit. Ils produisent et commercialisent les amandes, le beurre, le fruit de tamarinier et le miel.

Tous ces groupes évoluent au sein d'une association coopérative appelée Farakunna, composée de 22 villages, qui tire l'essentiel de leur revenu de la forêt. (Contribution de: Bakary Diarma, Coordonnateur du projet EFV/Sahel Eco, BP 04 Tominian; courriel: [djerma2002@yahoo.fr](mailto:djerma2002@yahoo.fr))



### Improving village life in Nepal

Every year in Nepal's Himalaya highlands, villagers gather thousands of tonnes of medicinal plants from the wild, and pack and dry them to sell to traders for export. The sale of these plants, oils and resins, or non-timber forest products (NTFPs), provides much-needed income to local communities in Nepal, who also rely on the plants for food, medicines and fuel.

The sale of these NTFPs represents a potential long-term source of income for

local villagers and a powerful incentive for them to conserve their forests. However, the villagers typically sell their goods to exploitive medicinal herb traders, who encourage them to harvest as much as they can, while paying them poorly for their products. Once a plant supply runs out, the traders move on, leaving the villagers who have depleted their only source of livelihood without much recourse.

In January 2005, the Rainforest Alliance awarded Forest Stewardship Council (FSC) certification to the Federation of Community Forest Users, Nepal (FECOFUN), whose members harvest their forest botanicals in a responsible way, ensuring the long-term availability of their natural resources and maintaining the health of the forests. They then sell their wild-crafted ingredients to the international natural products industry. The villagers' certified essential oils and handmade papers are now available in the United States of America and the United Kingdom.

Walter Smith, lead auditor and senior technical specialist for the Rainforest Alliance forestry programme, conducted the annual Forest Stewardship Council (FSC) audit of FECOFUN, the group certificate holder for the community forest user groups. This involved the need to revisit the forests to make sure that they are still being harvested and managed in compliance with FSC standards. This audit is particularly difficult because there are no roads leading directly to each certified forest.

The head of one community group visited was an indigenous Thami man who took the audit group to the Rainforest Alliance certified handmade paper factory. It is not a factory in the usual sense. Several men and women (mostly women) are boiling plant cuttings and scraping bark for making paper. The bark is going to a Japanese/Nepali company that sells it to Japan for use in manufacturing Japanese currency. This community group (like others in the certified pool) gives first priority for jobs to the poorest community members. (Source: *Rainforest Matters*, Rainforest Alliance, March 2007.)

### Community development from participatory rattan management

Nine species of two genera of rattan are recorded in Nepal. Among them, *Calamus tenuis*, *Calamus acanthospathus* and *Calamus inermis* are protected, mostly in the Community Forest of Nepal. *Calamus tenuis* is a small rattan, which is native to

the Terai region of Nepal. Some of the species of rattan, however, are indigenous to Nepal. Because of an indifferent approach by foresters, their management has been neglected in both the natural forests and sacred groves. The need to manage rattan in the natural forests has been recognized since 1994, when research work on rattan was pioneered. *Calamus tenuis* is the most distributed in natural forests, community forests and some private lands.

The concept of community forestry evolved in the 1990s in Nepal. The 1993 Forest Act and the 1995 Forest Regulation, which aimed to empower the community forest user groups, are the main legal instruments that govern the functioning of community forest in Nepal. According to forest policy, any part of the state forest can be handed over to the local communities who have access to and have been using the patch of the forest over a long period of time. The community has full authority to make decisions on the issues of forest management and utilization, as well as fund management. It gets all revenues from the forest and is supposed to spend the income on forestry and local development activities. The community participatory forestry approach has been successful in managing forests, including biodiversity.

Rattan is an important NTFP in Nepal. *Calamus tenuis* is an endemic and widely distributed species throughout the lowland areas of the country. Rattan has been locally used for various domestic purposes but largely as basketry and furniture. In the past, rattan was seriously degraded as a result of lack of conservation initiatives, improper management and unscientific non-sustainable harvesting, immature collection and overexploitation by the farmers and habitat destruction in most part of the country. It is estimated that more than 60 percent (roughly 10 000 ha) of natural rattan forests have vanished forever. Despite these negative figures, the recent community forestry programmes have brought a positive change in the conservation and management of forest resources, including the management of NTFPs such as rattan. Currently, six Community Forest User Groups (CFUGs), three protected areas (national parks and wildlife reserves), three religious groups, three institutions (schools and herbal farms) and some private farmers are contributing to conserving rattan in Nepal.

The Sati Karnali community forest is located in the far western Terai of Nepal.

The total area of this community forest is 298.5 ha, including 170 ha of *Calamus tenuis* and benefits 5 352 inhabitants (892 households). The food supply situation shows that 16 percent of households' production can support only three months, 6 percent for three to six months, 20 percent for six to nine months, 10 percent for nine to 12 months and 48 percent for more than a year.

A recent case study focused on the Sati Karnali Community Forest User Group (SKCFUG). It was handed over to communities in 1994 and in 1996 the Rattan Management Plan (RMP) was prepared. After implementing the RMP, production of rattan has increased by 15 percent, where income earning was 25 percent in each subsequent year, and the rattan forest has fully revived. The present average growing stock of cane is 19 840 stems per ha with annual production of 6 to 8 tonnes of cane (dry weight) per ha. CFUG auctions rattan on a weight basis at a minimum rate of Rs30 (US\$0.40) per kg. They make about Nrs210 000 (US\$3 000) per ha annually, which gives about 3.5 million rupees (about US\$45,000) per year. For example, in 2002, SKCFUG earned a total of Nrs4 657 970, out of which Nrs3 871 402 (83.1 percent) were from rattan alone.

Rattan is managed utilizing indigenous knowledge for regulating access, utilization and distribution of benefits in the community.

The case study concluded the following.

- Community forestry in Nepal has boosted NTFPs (such as rattan) as a major income-generating source and participatory management practice is one of the successful methods to manage rattan and other forest products in Nepal.
- SKCFUG has contributed significantly to social development, such as health, education, agriculture, rural finance and capacity building.
- The diversification of rattan species to develop enterprises and value addition works are challenges ahead of SKCFUG.
- Degraded rattan forest can be restored through participatory management and use of community funds for forest and social development work.

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"Riches of the forest: for health, life and spirit in Africa"

## NIGERIA

### Raffia and barkcloth weaving and palm wine

The weaving of raffia in Akwa Ibom is a small-scale industry that has adapted well to modern demands. In a village in Abak, the weaving was and is still a craft conducted by boys to produce money for clothing, education and so on.

Raffia threads, *ndam*, consist of the outer skin peeled from fronds of the raffia palm, knotted together in a continuous length. At first, the threads are green in colour, but they dry to a light brown. Formerly, vegetable dyes were used, but now modern dyes are employed to make coloured threads for weaving. The weaving technology is extremely simple. A slanting loom, *akpara ekpat*, made of lengths of palm midrib is used, alongside other weaving tools such as a hardwood beater or sword, *awat ekpat*; a shuttle, *okop ekpat*; a heddle, *nisong ekpat*, made from two lengths of palm midrib bark and raffia threads.

Products of raffia weaving include lengths of cloth used for wrapping headloads, making garri sacks, covering mattresses and seats of the deckchair type. The major product is the raffia bag used by hunters and farmers for game and farm produce. In the past, raffia cloth was used as clothing and, to this day, special wrappers with striped patterns are worn on ceremonial occasions by chiefs and dancers.

Barkcloth is a non-textile fabric made from the bark of a tree. In the forest region of southeastern Nigeria, barkcloth was the normal apparel used for wrapping precious

objects, such as skin-covered masks and for storage. The use of barkcloth declined drastically as soon as imported cotton became available. Today, it only survives in a few ceremonial contexts.

One of the central features of traditional and ceremonial life in the southeastern part of Nigeria is the drinking of palm wine; in fact, no social event of any importance is truly complete without it. The communal drinking of palm wine is an overt act of fellowship and expresses a stranger's good intent.

The Ibibio tap their wine from the raffia palm (*Raphia* spp.) while elsewhere the oil palm (*Elaeis guineensis*) is exploited. A bamboo ladder is used to climb the tree and a flat-ended chisel-like knife, *enuon*, is employed to cut the male inflorescence stalk. The wine is collected in a special tapping pot but in the case of the oil palm, "up wine" is obtained by using a climbing rope to climb the tree, and the incision is made in the inflorescence with a curved knife. "Down wine" is obtained by felling the tree and tying a container to the top end after all the leaves have been removed.

Everywhere, wine is collected twice daily, in the morning and in the evening. The wine may be consumed fresh from the tree, or on the first, second or third day after tapping. The rate of fermentation is so rapid that by the second day, the drink is fairly intoxicating and by the third day it is sour and of considerable potency. The people of Obudu in the Cross River state developed techniques of storing and increasing the alcoholic content of palm wine, but elsewhere, wine older than three days is distilled into spirits – *ufofop* or *kaikai*, which are also commonly used in traditional ceremonies.

Biologists and nutritionists also talk of the nutritional value of palm wine. The natural drink, they say, contains a lot of yeast and minerals rich in vitamins that nourish the body and helps it to relax. (Source: Akwa Ibom state [Nigeria], 6 February 2007.)



## PARAGUAY

### Ecoturismo en el Parque Nacional Ybycuí

El Parque Nacional Ybycuí posee una rica calidad paisajística, con exuberantes arroyos y saltos que le proporcionan una cualidad ambiental única, para uso turístico. Fue designado como Parque Nacional en el año 1973 y cuenta con una extensión de 5000 hectáreas. Se encuentra ubicado a 150 km de Asunción, en el Departamento de Paraguari.

El Plan de Ecoturismo del Parque ofrece al visitante varias opciones para disfrutar de su estadía, ya que existe una superficie boscosa que protege la rica fuente de agua dulce.

El parque se subdivide en zonas de manejo: de uso extensivo, histórica, de uso especial, de recuperación, primitiva y primitiva intangible, se puede encontrar una descripción de los posibles usos de cada zona en el centro de visitantes que se halla ubicado en la zona de uso intensivo (área recreativa).

La vegetación boscosa y los cerros ofrecen un paisaje variado. Los senderos existentes dentro del bosque permiten apreciar la vida silvestre del lugar y conocer a las especies de animales y plantas características de la región. El visitante encuentra aquí espacios para el descanso, deportes al aire libre y la posibilidad de disfrutar de la belleza de sus arroyos y cascadas.

Conserva gran parte de la flora de la Ecorregión Selva Central, presentando ejemplares representativos en vías de extinción. Entre las especies vegetales se encuentran helechos gigantes, palmeras, cactus, tunas, bromelias, cañas, orquídeas, camalotes, entre otros.

Se presentan algunos afloramientos de rocas correspondientes al grupo de la cordillera de Caacupé, formaciones Paraguari, Cerro Hú y Tobatí, constituidas por areniscas sedimentarias formadas en el silúrico, hace aproximadamente 400 millones de años.

A la entrada del parque se encuentra la primera fundición de hierro del Paraguay y de Sudamérica, conocida con el nombre de «La Rosada», construida entre los años 1850 y 1854 bajo el gobierno de Don Carlos Antonio López. Sus hornos proveían la materia prima para la construcción de embarcaciones y maquinarias. La Rosada funcionó hasta 1868, año en que fue destruida por las tropas uruguayas y brasileñas durante la Guerra de la Triple Alianza.

La zona histórica fue reconstruida en 1973 y restaurada en el año 1998, consta de un museo histórico y cultural que permite interpretar a través de las piezas conservadas la tecnología de la época y el ingenio humano desarrollado para la elaboración de los primeros elementos metálicos en el Paraguay.

A dos kilómetros de la entrada, por camino de tierra, se llega hasta el área recreativa del parque, donde se puede realizar senderismo, recorriendo los cuatro senderos y los saltos de agua, como el Mbocaruzú, Yryvucuá y Karaimi o travesía por agua en el Arroyo Corrientes.

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## THE PHILIPPINES

### Upland dwellers tapped to manage forest resources

The country's forests are home to 22 million Filipinos. Among the Philippines' poorest, these upland dwellers have been partly blamed for the depletion of the forest resources. Lately, however, several government and non-government groups, including the Department of Science and Technology's Forest Products Research and Development Institute (DOST-FPRDI), have begun to look at these communities, no longer as an ecological nuisance but as a potent force in forest rehabilitation and protection.

A step towards this direction was the project funded by the Japan-based International Tropical Timber Organization (ITTO) where FPRDI researchers surveyed and trained forest dwellers in the provinces of Aurora, Western Samar, Surigao del Sur and Palawan.

They documented the communities' economic activities, especially how they collect, process and market NWFPs such as rattan, vines, bamboo, erect palms, honey and almaciga resin. "After surveying ten settlements in these provinces, we found that forest communities, many of which consist of indigenous people, depended on forest products as a major source of income," says project leader Arnaldo Mosteiro. "They were diligent and creative, producing all sorts of handicrafts

– mats, hats, fans, bags, brooms, house decors – from every available raw material. Ignorance, however, stifles their productivity and jeopardizes their raw material base. For instance, farmers used very crude methods to tap resin from almaciga trees. In the process, the trees are maimed and ultimately killed.”

“Over the years, FPRDI has trained upland dwellers on the wise use of non-wood forest resources. We have shared technologies that would improve their product quality and productivity, as well as livelihood skills that would lessen their dependence on the forest,” said FPRDI Director Florence P. Soriano. “Last year, for instance, DOST conducted a project that taught B’laan tribal women in South Cotabato and NPA rebel returnees in Samar to make handmade paper and handmade paper novelty items.”

“The FPRDI-ITTO survey alerts us that we need to link up with all concerned groups so that we can give these communities the best business support and environmental education that we can. We have no other choice. If we are serious in saving our forests, we have to be serious in empowering the people who live in them,” Soriano concluded. [Source: *Sun Star* [The Philippines], 15 February 2007.]

## ROMANIA

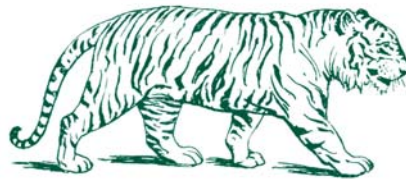
### Romanian forestry sector to receive funds of over one billion euros

The Romanian forestry sector will receive over one billion euros (about US\$1.30 billion) of European funds from 2007 to 2013, the Ministry of Agriculture said on Tuesday. Once the 2007–2013 National Rural Development Plan is approved by the European Commission, Romania will receive rural development funds worth 8.022 billion euros (about US\$10.43 billion), with about one billion euros of this to be earmarked for the forestry sector.

The money will be used by Romania for staff training, the improvement of the forest’s economic value, the increase of the forestry products’ added value, infrastructure, and planting forests on farm and non-farm land.

Starting in 1956, Romania was the only country in the world whose forests had ten-year management programmes and they were entirely planned according to a unitary design; the Romanian school of forest planning was internationally recognized.

In the European context, Romania stands out because of the high biodiversity of its forestry ecosystem, especially riverside coppices, plain and hill mixed foliage forests, beech and resinous mixed forests, natural spruce fir forests under the aspect of genetic diversity, placing Romania in the top echelon of European countries. [Source: People’s Daily Online [Beijing, China], 10 January 2007.]



## RUSSIAN FEDERATION

### Ecotourism in the Russian Far East

The 1990s brought an increase in ecotourism activities in the Russian Far East (RFE) after growing interest in the region from the global environmental movement and greater international demand for adventure tourism. Ecotourists were attracted to the RFE by the Siberian tiger, rare plants, wild salmon rivers, vast intact forests and a unique marine environment.

Ecotourism brought a means of conservation and subsistence to a region that was heavily dependent on resource extraction. Local communities and indigenous groups also benefited from the increase in tourism by building accommodation and developing their own ecotourism activities. For the indigenous people of Udege, living in the forests by the Bikin and Samarga rivers, revenue from Japanese ecotourists provided essential financial support for a period when they were dependent on hunting and fishing.

But ecotourism is not synonymous with conservation. Some Zapovednik (Russian state nature reserve) managers have been compelled by the Government to set up unsustainable ecotourism activities in restricted zones, jeopardizing some of the Russian Federation’s most valuable natural areas such as the Geizer’s Valley in Kamchatka and the Marine Preserve in Primorye. Tourist pressure and industrial interests in these regions have led to a series of lengthy court cases, public discussions and environmental protests from Lake Baikal to the Kamchatka peninsula. Even the conservation status of a

United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site, awarded to the Baikal watershed, Bystrinsky Park and Central Sikhote Alin, may not guarantee their future conservation.

The positive and negative effects of tourism are a controversial issue. One group that seems to be benefiting from it is the Eveny people, an indigenous community in the Bystrinsky natural park of Kamchatka, a veritable ecotourist’s paradise that is now gaining popularity as a destination for cultural tourism.

Originally reindeer herders and people who reverse the larch tree, the Eveny people have always had an intimate connection with the taiga and tundra. For the last three years they have been organizing ethnocultural tourism in their community. Ecotourists live in the traditional way of the Eveny people and are taught handicrafts such as birch bark carving and skin tanning. [Source: extracted from an article by Stephan Nielsen and Anatoly Lebedev in *Taiganews*, 57, Winter 2006.]

[Please also see page 62 of *Non-Wood News* 13.]

### Growing market for wild fungi and berries

Russian companies actively develop harvesting and processing of wild fungi (chanterelles, boletus), berries (cranberries, lingonberries, bilberries) and nuts (cedar nuts). The profitability of this business in the Russian Federation exceeds 15 percent, and in the case of export to the EU countries, 100 percent. In contrast to cultivated fungi and berries, wild ones do not require expenditures for cultivation, they enjoy high demand in the West, and do not need large initial investments. Since there are no official statistical data on the volume of the market for wild fungi, berries and nuts in the country, it can only be estimated at a hundred million dollars.

According to data provided by the agency of Tomsk province development (ARTOT), market capacity in this region only accounts for 138 000 tonnes per year (US\$370 million in 2005). Besides the Tomsk province, production and processing of wild fruits, fungi and nuts are significant in other Siberian territories and northern regions of the country. The harvesting season lasts usually from June through October. During the season more than 30 intermediaries are involved in buying wild products from pickers and the Tomsk food company AMK, which controls more than 50 percent of the



local markets and even has its own forest land specially for harvesting fungi, berries and nuts.

The company exports several thousand tonnes of edible boletus, chanterelles and cranberries per year to Italy and Sweden. Some companies export raw products and salted or boiled chanterelles, but also more advanced quick-frozen products. According to the President of the Ledovo Group, cultivated and wild fungi sectors are not competitors. One of the major issues in the wild fungi sector is the instability of supply which strongly depends on climatic conditions and the ecological situation.

Consumption of fungi in the Russian Federation is a national tradition and therefore this market has prospects for considerable increase, but only if commercial cultivation on the industrial scale develops. Then, possibly, the cultivated analogues of wild fungi could extrude those growing wild. In the majority of European countries, the United States of America, Australia, Japan and China such fungi are no longer collected and buyers do not see a large difference between wild and cultivated products. The same has already occurred with blueberries, which are cultivated on a large scale in Europe, North and South America and Australia, or cranberries, commercially grown in the United States of America, whereas most cranberries used for processing in Europe come from Russian forests. [Source: FreshPlaza [the Netherlands], 29 January 2007.]



**The latanyé project: development of the latanyé broom industry in Saint Lucia**  
Latanyé (*Coccothrinax barbadensis*) is a

palm native to Saint Lucia and its leaves are used to make crafts and brooms.

Success in latanyé development was achieved by:

- latanyé being identified as both ecologically vulnerable and as a plant used to maintain the livelihoods of rural communities;
- carrying out research and documentation of the appropriate and successful methods to: propagate the species, establish cultivated plantations and sustainably harvest latanyé leaves; and
- collaboration among agencies that impact on the latanyé plant and broom production.

A socio-economic study by Lyndon John in 2001 detailed the vulnerable nature of the latanyé broom industry in which there was a high demand for latanyé brooms, an overharvesting of latanyé leaves and a consequent scarcity or unavailability of leaves. Latanyé brooms are bought locally and are also sold elsewhere, including in Barbados, Saint Vincent and the Grenadines, the Bolivarian Republic of Venezuela, United States Virgin Islands and Saint Martin. However, the scarcity of leaves resulted in the reduction of the quantity and the quality of brooms produced.

To ensure conservation of the latanyé plant, the Forestry Department and latanyé farmers used wildlings to establish plots on government and private holdings. There were also experimental trials to germinate the latanyé seeds. But these two strategies were costly. Research at the Forestry Department in 2002 determined a pregerminative method that gave 90 to 100 percent germination. This method also reduced the time for germination of seeds and resulted in the production of a greater number of plants with uniform age and less mortality.

Another experiment was carried out (from September 2004 to September 2005) to determine the optimum harvesting regime of latanyé leaves in a plantation. Every four months, four treatments of 30, 40, 50 and 60 percent removal of leaves were undertaken in three blocks using the experimental design of randomized complete blocks. The results indicated that:

- there was a clear trend with higher removal of leaves leading to fewer leaves remaining;
- greater productivity of leaves in the rainy season in blocks where there was greater exposure to light; and

- greater productivity of leaves in the dry season in blocks where there was less exposure to light.

The results suggest that using a harvesting intensity of 40 percent of leaves per plant present in the dry season and 50 percent in the wet season, would result in the optimum and sustainable production of latanyé leaves.

Apart from research on the appropriate silvicultural and agronomic practices, the latanyé project also examined the economic aspects of production. The Forestry Department determined the cost of production to establish one acre (approximately 0.4 ha) of a latanyé plantation and, in collaboration with the Corporate Planning Unit of the Ministry of Agriculture, determined that the production of latanyé leaves and sale of latanyé brooms was economically feasible. There was also collaboration with other government services such as the Extension Service, Ministry of Commerce, Ministry of Planning, Saint Lucia Bureau of Standards, latanyé plant and broom producers and exporters, and NGOs for product development and exploration of markets for the sale of latanyé brooms. The Forestry Department and the Extension Service provided potted latanyé plants and technical assistance to latanyé farmers that resulted in the successful establishment of 34 plantations of pure and mixed plots of latanyé on farmers' holdings. The average size of a plantation was 1 acre (0.4 ha).

All of the above-mentioned organizations are part of the Latanyé Task Force. The plan of work related to latanyé broom production is guided by the mandate of this task force.

(Contributed by: Donatien Gustave, Forest Officer, Ministry of Agriculture, Forestry and Fisheries, Saint Lucia. E-mail: choulu79@gmail.com)

(The project report is available from FAO's NWFP home page under "Readers' Research".)



#### **Tiwai Island and the threat of the bushmeat trade**

The humanitarian dilemma created in Sierra Leone and Liberia over the last 15 years has resulted in refugees and forced migrations. The subsequent crippling of domestic agricultural supplies and the limited access to food provided by aid organizations have meant that refugees

and internally displaced persons have had to rely on wildlife as an alternative and supplementary food source. Protected areas tend to be the most heavily affected, because animals there become easy targets for poachers, and park guards are either victimized or forced to flee for their own lives.

Tiwai Island Wildlife Sanctuary, a community-based ecotourism project in the south of Sierra Leone has certainly felt this pinch. Since research and ecotourism activities began on Tiwai in 1982, until the outbreak of the civil war in 1991, virtually no hunting of any kind occurred and in January 1987 the island became a legal game sanctuary in which all hunting was prohibited. During the war, financial support to Tiwai was terminated and the island was inaccessible to researchers. Local staff and village communities suffered tremendously and several people lost their lives. At the end of the war, the potential for increased threats to biodiversity nationwide was greater than ever, especially for areas like Tiwai.

The manifestation of peace in Sierra Leone could, eventually, lead to sustainable development or to an intensification of unsustainable resource exploitation, such as bushmeat hunting by large numbers of displaced refugees and host communities who have had their livelihoods undermined. In the immediate wake of the war, Tiwai ultimately became exposed to intensive anthropogenic activities such as trapping and hunting for bushmeat and habitat destruction for agricultural services. In addition, intensive poaching was carried out on the island during the civil conflict.

The Environmental Foundation for Africa (EFA) first became aware of poaching problems on the island during field visits in 2000. Since then, EFA staff members have worked with the two chiefdoms bordering the island to revive hopes for restoration of the wildlife sanctuary. Following community meetings, the chiefs of both chiefdoms imposed a ban on all hunting activities on the island and formed an interim project committee to mobilize restoration efforts. The rapid resumption of ecotourism and of wildlife and ecological studies, prompted by EFA, has helped to discourage unsustainable activities and has started to generate a much needed cash flow to benefit local people. However, even as community support grows for the project, day-to-day needs and expectations

about the project's benefits pose serious challenges.

Poaching is still prevalent on the island and its eradication is one of the greatest challenges facing Tiwai. The community recognizes this as a problem with relevant community meetings identifying the predicament of bushmeat hunting on Tiwai, but the way forward is unclear. Poaching ultimately presents a serious threat to the island's future as a sanctuary. It is endangered as an ecotourist destination, as visitors hearing gunshots often report negative experiences, which can lead to bad press and ultimately ruin Tiwai's reputation as an idyllic retreat for future tourists. International research on the island, which was recently restarted in January 2007, is also easily undermined by the prevalence of hunting. Ultimately, primates need to be alive and unafraid of humans, to be considered useful research subjects.

International researchers have been recognized as the most financially profitable visitors to Tiwai and without their presence the project will struggle to survive in future. Tiwai, through tourism and research, has the potential to raise great revenue for its surrounding communities, but hunting on the island could well undermine this. Thus, the few who are currently poaching on Tiwai are doing so at the expense of the greater community. If the issue of poaching is not addressed properly, it may undermine the whole project. A one-of-a-kind ecosystem could be lost and the communities that surround Tiwai could ultimately lose a unique livelihood opportunity. [Source: extracted from an article by Paul Munro, Environmental Foundation for Africa [in *Africa News*], 27 February 2007.]

## THE SUDAN

### Road to prosperity is paved with gum

Throughout its history, the Sudan has been racked by fighting and instability, largely because of ethnic divides between its Arabic north and African south. A successful Canadian land developer, David Tennant, first travelled to the region in January 2005, just after the south signed the Comprehensive Peace Agreement with the northern government of Khartoum. He was looking for a way to create economic activity, train people and invest profits back into the community.



Gum arabic

Two years later, what began as a small humanitarian project is giving birth to an industry. "I almost accidentally fell into a product called gum arabic," says Tennant. "We exported it through the south of the Sudan and we were the first people to do so."

Gum arabic is the hardened tree sap that bleeds out of acacia trees. It is in countless ordinary products – sweetening candies, coating aspirins and prolonging the fizz in soft drinks. It is so prized that the United States of America still imports gum, despite economic sanctions against the Sudan since 1997. For thousands of years, Arab traders from the more developed north have taken the product to the world market, hence the name gum arabic. The northern Sudan exports 70 to 90 percent of the world's supply through the partly state-owned Gum Arabic Company.

But according to the Ministry of Export and Trade in the south, 80 percent of that dried resin actually comes from the south where the trees are abundant even though the southern Sudanese have seen little benefit.

Consequently, Tennant began touring the parched countryside, meeting with business people, politicians, traders and farmers. His idea caught on – that shipping gum out of the south to improve the life of the southern Sudanese could be more than just a dream.

Tennant raised money in Canada, invested a lot of his own and set up the first gum company in the southern Sudan, stipulating that future profits would fund humanitarian projects. A year and a half later, the gum company delivered its first shipment – 37 tonnes of certified gum – to buyers in Dubai. Tennant calls the achievement a miracle. "Before the peace agreement, the issue of gum was something that was a dream," says Moses Kuch, Deputy Director for External Trade,

Supply and Commerce. "We never realized that we could develop it and own it."

This month, on his third trip to Juba, Tennant returned as a special adviser to the Ministry of Trade. Talk has turned to border restrictions, certification, quality control, farming cooperatives and nurseries, as well as training, education and conservation at the local level. Millions of dollars have started flowing from the Government and national bank to open up other gum-rich areas.

Another priority is setting the record straight on where so much of the best gum in the world actually comes from. There is even a new name. The Government now calls it gum Africa. But in a country where disputes over resources spark bloody conflict, it is a regional initiative that might not go over so well in the north. The southern Sudanese officials say that is not stopping them. "Indeed it will be an economic blow to the people of the north but it's our right. The gum is being produced in our territory and we need to think of how we can best manage our resources."

But how to convince major buyers such as Coca-Cola to switch suppliers? A chemical engineer, who accompanied Tennant to the southern Sudan, says it comes down to quality. "The gum that's coming out of the southern Sudan has a reputation of low quality because it has never been regulated, there's no grading system, and most of it is smuggled out through neighbouring countries," says the University of Western Ontario's Mohammed Rahbari. "I think we should be able to put together quality control systems and educate the farmers and buyers at the local markets of what exactly we need to ensure we don't turn buyers away from this gum."

Last month, Tennant sent Rahbari and a team from the gum company into the rural southern Sudan to show harvesters exactly what they are looking for – larger chunks, free from tree bark and other resin.

The establishment of a gum industry in the south is already improving working conditions and is a far cry from the past.

Dealing with the gum company guarantees better prices. It also gives harvesters a sense of ownership and freedom. Aside from Tennant and Rahbari, all the company's top employees are young southern Sudanese, including one Sudanese-Canadian. (Source: extracted from an article by Andrea Huncar, *The Hamilton Spectator* [Canada], 10 March 2007.)

## UGANDA

### Uganda honey gets EU nod

Uganda's honey has been selected to be the African flag carrier to the European Union (EU) market, the Uganda Export Promotions Board's executive director, Florence Kata, has said. "Uganda is required to supply 60 tonnes of Ambar (Gold) honey. The consignment is to be launched in London in May," Kata said. She added that the honey would get to supermarkets through a network of buyers across Europe.

"However, after the launch, we want the buyers to be assured of constant supply for the next three years, during which we should be able to gain experience and intellectual ability of supplying to larger markets," she said.

"The international price for honey is U sh1 600. The firm proposed to offer U sh1 800 at the farmgate level and will only collect honey that is more than 500 kg. However, the prices are all still being negotiated," Kata said. (Source: *New Vision* [Kampala], 15 March 2007.)

### Aloe vera farmers to get Ush1 billion plant

The Uganda Commercial Aloe Vera Farmers Association and a United States firm have raised US\$600 000 (about Ush1 billion) to put up a processing plant. The plant will process the multimedicinal plant into various health products – cosmetics, toothpaste, health drinks – and the residues will be turned into animal feeds.

Ali Sessanga, the project director, explained that the plant would help farmers sustain the export market, adding that the machinery was acquired through a long-term loan. Aloe vera has not been processed in Uganda before. Sessanga said the machine has the capacity to crush 60 144 acres (approximately 24 339 ha) of aloe vera per month. Uganda's aloe vera area is 912 acres (approximately 369.07 ha), which means that farmers should produce more of the crop. (Source: *New Vision* [Kampala], 14 February 2007.)

## UNITED ARAB EMIRATES

### New postage stamps on biodiversity in the United Arab Emirates issued

Emirates Post, in association with Environment Agency – Abu Dhabi (EAD), has issued three sets of postage stamps, illustrating the flora and fauna of the

United Arab Emirates, some of which are endangered species.

The commemorative stamps are meant to highlight the biodiversity of the Emirates and raise awareness among the public on the need to preserve flora and fauna endangered by the degradation of their habitats, overgrazing and shrinkage of vegetation.

One set of stamps features most widespread wild plants, while other two sets portray desert reptiles and gazelles, respectively. (Source: Dubai City Guide [United Arab Emirates], February 2007.)



*Myrica gale*

## UNITED KINGDOM

### Myrica gale makes a comeback

The Vikings used it as a stimulant before going into battle, the Celts used it to flavour their beer and Scottish Highland housewives used it as an insect repellent. Now bog myrtle (*Myrica gale*), or sweet gale as it is also known, is experiencing a new lease of life in a range of natural products.

The pharmaceutical giant Boots has spent UK£700 000 researching the use of bog myrtle, which could have an important role in the Scottish Highland economy. So far, the essential oil of sweet gale in the firm's new sensitive skincare products has all been harvested from wild outcrops of Scottish bog myrtle. Highland Natural Products, Boots' research partner in the project, has started work on developing cultivated areas of bog myrtle. The plant occurs naturally in the Highlands but it may be possible to establish plantations in the Highlands, Aberdeenshire and the Borders.

The potential demand for sweet gale oil could result in 500 new jobs and be worth UK£2 million a year to the rural economy by 2016.

However, the people behind the research into the uses of bog myrtle believe the Scottish Executive should be doing more to support research into commercial cultivation



of the plant. Unless more is done, they warn, the chance for a new Highland boom could be squandered, with companies looking to countries such as Poland to develop cultivation of the crop. The research director of Highland Natural Products said: "The main problem in Scotland is there is no policy for developing non-food crops, whereas there is a policy in England and Wales. There does not seem to be much idea of how important these things can be to the rural economy." Both Boots and Highland Natural Products have spent thousands of pounds testing the antibacterial qualities of bog myrtle oil and making sure it is suitable for use on sensitive skins. They say there is a need for government support if the crop is to be cultivated with commercial success.

By 2016 Boots expects to need 10 tonnes of bog myrtle oil a year. The harvested area covers 50 ha, but this will need to rise to 2 900 ha by 2016.

The shrub, which grows on rocky, boggy ground, can be grown on land which is also used for woodland and grazing. One hectare of ground can yield 1 kg of oil. Funding for growers in the initial stages of cultivation is also important and would ensure that the plant could go commercial in years rather than decades.

According to a research associate at the Royal Botanic Garden, Edinburgh, bog myrtle is a wonder herb that is firmly planted in Scotland's history of medicinal plant use. People have used it to treat ulcers, intestinal worms and aching muscles. It is even used as an alternative to hops in beer. "This project is a wonderful renaissance for bog myrtle, which I'm sure will be welcomed by Scotland's hill farmers."

An interim report, commissioned by the Scottish Executive last year to study the benefits of sweet gale cultivation, found that it could generate investment of UK£4.8 million at the farm level and create up to 460 jobs. The Scottish Executive said that farmers who applied for funding with a satisfactory business plan would stand a good chance of receiving support. [Source: *The Scotsman*, 5 February 2007.]



THE UNITED REPUBLIC  
OF TANZANIA

### Bamboo a potential saviour of poor children

The Dar-es-Salaam-based Bamboo Training School has embarked on an operation to train street kids and disadvantaged children from the city and upcountry on how to knit

bamboo and manufacture various products for sale so as to support themselves financially. Mkumba George, a teacher at the school, said that currently more than 60 young people have been trained, 40 of whom are female. Ten of these have formed a working group which operates in locations at Kimara, Mwenge and Ubungu, on the outskirts of the city.

George explained that they are promoting the theme that bamboos constitute money that grows, which they are using to coopt youth into the project. He said that they get raw materials mainly from Kigoma and Mbeya. He pointed out that given the stiff competition in the current business environment, youth can cope successfully only if they are well organized economically and make high-quality, appealing products for sale on the domestic and overseas markets.

The project would also reduce deforestation in the country, since people would use bamboo instead of cutting down trees wantonly for making furniture, and other activities.

George said appreciable success had been recorded in marketing their products locally, but they were unable to meet external demand because of lack of sufficient capital. He said one of the surest ways out of the problem was securing loans, to place them on a sound financial footing. [Source: Sunday Observer, 11 March 2007 [in IPP Media, United Republic of Tanzania].]

### Insect-based industries

While the value of considering insects as "mini-game" or "mini-livestock" may not be immediately obvious, the analogy is compelling. As a forest-based wildlife resource, certain insects can be managed like other animals and have economic potential at least at the subsistence level, if not at higher commercial scales.

Four insect-based industries are of interest in the United Republic of Tanzania:

- the use of insects for human or animal food (entomophagy)
- beekeeping (apiculture)
- silk production (sericulture); and
- trade in collectible insects.

*Entomophagy and apiculture* were of great traditional importance to certain Tanzanian communities, but cultural alienation from time-honoured rituals and excessive, non-sustainable rates of extraction have led to declining dependence on them over the last century. During the colonial and modern age,

entomophagy developed a negative image in large segments of the general public, although the practice survives in various parts of rural Tanzania. But even in areas where insect feasting is accepted, certain groups of insects appreciated as nutritious and delicious elsewhere in the world may be completely ignored, probably for no better reason than traditional oversight, cultural taboos or readily available protein alternatives. The country could easily revive what may have been Africa's strongest apiculture tradition and a potentially substantial national industry that is at present functioning far below its potential.

Although *sericulture and collectibles* do not have strong traditional roots in the Republic, they are now being promoted as potentially rewarding, small-scale economic ventures. Silk production may be most feasible in conjunction with artisan enterprises or export to West Africa, where traditional demand was strong but local supplies have recently declined through deforestation. Given the country's extraordinary biodiversity and wealth of showy often endemic species of insects, their exploitation as a renewable resource for a growing international market of specimen collectors has barely begun, but must also be regulated to assure sustainability. [Source: Springer/Kluwer Academic Publishers, *Forest Entomology in East Africa: Forest Insects of Tanzania*. 2006. Chapter 9, Forest-based insect industries. H.G. Schabel. (With kind permission of Springer Science and Business Media.).]

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### Maine law defines "pure maple syrup"

As Maine's maple sugar season wound down, Governor John Baldacci signed legislation to clarify the legal definition of "pure maple syrup" to help consumers decide whether they are getting the real thing.

The new law sets standards on how much sugar must be in syrup in order for it to be considered pure. It took effect immediately upon the governor's signature on Monday.

The bill was advanced by the Maine Maple Producers. The Maine Farm Bureau said the

new standard helps to protect Maine's maple syrup industry.

Maple sugar producers say that if there is too much sugar in syrup, it can crystallize shortly after sale. The new law helps to ensure that when someone buys "pure maple syrup", that's what they are getting.

Vermont, the nation's No. 1 maple syrup producer, has rules similar to Maine's new standard. Maine is the nation's second-largest maple syrup producer. [Source: BusinessWeek [United States of America], 4 April 2007.]

### Are ramps under threat?

Demand for ramps from celebrity chefs, avant-garde restaurateurs and avid foodies has some experts worried for the future of the pungent wild leeks grown in the hills of Appalachia.

"[Ramps are] becoming harder to find in many areas because they've become so popular," said Jeanine Davis, an associate professor of horticulture at North Carolina State University. Davis said the increase in popularity over the years means that chic big city eateries and their adventurous chefs are vying for the bulbs but "very few people are producing them commercially".

Ramps look much like a spring onion or a scallion, with flat green leaves protruding from a white onion-like bulb. Their flavour and smell, which is said to linger on the breath and skin for days after being eaten, is powerful and garlic-like.

A group in Chicago recently hosted a US\$65-a-plate ramp dinner, considerably higher than the \$6 to \$10 dinners found in most parts of West Virginia every spring.

The ramp plant takes three years to mature to the stage where it is edible, and two more years before it begins bearing seed for reproduction. Although ramps are harvested in the spring, the plants are not mature enough to produce seeds for replanting until autumn. Many foragers who find ramps growing wild in March or April do not return to sow new seeds in September or October, Davis said.

The owner of one of the few ramp farms in the country, Ramp Farm Specialties in Richwood, says that areas off the main roads are pretty well dug up, but ramps are still abundant in the mountains. Her 50-acre (20.23 ha) farm supplies ramps to individuals and restaurants all across the country. The state Department of Agriculture said that ramps are still abundant in the eastern and northeastern parts of the state. [Source: AP in Community

Forest Resource Center [CFRC] Weekly Summary, 12 April 2007.]

### Medicinal fungi in Alaska

Other than consumption as food, forest fungi are also used medicinally. Medicinal fungi found in Alaska are mostly perennial conks of wood-decay fungi that typically fruit on infected mature trees.

Although published documentation of the consumption of edible fungi by native peoples of the Pacific Northwest remains sparse, some woody conks have reportedly been used for medicinal and spiritual purposes.

Less well documented in Western literature, woody sporocarps of other wood decay fungi might be valued for medicinal or spiritual purposes by Native Americans because such use is common among aboriginal societies throughout the Northern Hemisphere and stretches back in time prior to written history. For instance, a strong tea of the "chew ash fungus" (*Phellinus* [*Fomes*] *igniarius*) was used by the Yupik for constipation and stomach troubles and, although birch fungus (*Phellinus tremulae*) that grows on trembling aspen is not reported to have medicinal value, its ashes are mixed with tobacco or snuff.

It is clear that the original inhabitants of our continent should not be expected to divulge sensitive information regarding the use of native flora and mycota in their spiritual traditions. When evidence exists of

this link, it is incumbent upon government agencies that wish to promote harvesting of these products to consult thoroughly with Native Americans about such plans. At the very least, tribes can define areas that should not be harvested for certain species, and this information should be kept confidential. Another issue that government agencies need to address with regard to using this resource is the likelihood that maintaining endemic populations of these fungi in various places will allow for more genetic diversity required to isolate strains with superior medicinal properties for subsequent propagation. Proper compensation to native peoples for bioprospecting on their traditional lands is a very salient issue, as major pharmaceutical companies may some day wish to produce compounds derived from cultivating these species.

In southeast and south-central Alaska, at least 12 species of wood decay fungi have varied potential for commercial harvesting as medicinal fungi: *Fomes fomentarius*, *Fomitopsis officinalis*, *Ganoderma applanatum*, *G. oregonense*, *G. tsugae*, *Hericiium abietis*, *Inonotus obliquus*, *Phellinus igniarius*, *P. tremulae*, *Piptoporus betulinus*, *Pleurotus ostreatus* and *Trametes versicolor*. Another, *Schizophyllum commune* (split gill polypore) is the most common and widely distributed mushroom in the world. It grows on the stems, branches, stumps and logs of hardwood species. It is mentioned

*Fomes fomentarius*. The "tinder conk" has one of the most ancient documented histories of use, both for starting fires and as a valued medicinal. It is one of the fungi found in the pouch of the 5 300-year-old "Ice Man" of the Italian/Swiss Alps. It grows on birch and fir (*Abies* sp.) trees throughout the Northern Hemisphere.

*Hericiium abietis*. The "conifer coral fungus" not only has medicinal properties, but is a delicious and safe edible mushroom. It must be collected, handled and preserved like other fleshy mushrooms because it is not a woody conk, although it is often found growing on the boles of snags. It is not common and is difficult to propagate artificially in growth chambers, but it is one of the few edible mushrooms that decay conifers. It therefore has potential in southeast Alaska for inoculating hemlock stands where it would be convenient to collect.

*Pleurotus ostreatus*. The "oyster mushroom," like *Hericiium abietis*, is a premier edible mushroom with medicinal properties. It grows on alder, aspen, cottonwood and birch, often fruiting in large flushes for some years after the tree has died. As with *Hericiium* and all flesh fungi, it is perishable and must either be sold quickly or preserved soon after harvest (commonly by drying).

*Trametes versicolor*. The "turkey tail" is a common, globally distributed fungus with potent anticancer properties. It grows in dense overlapping clusters on the stems and branches of many hardwood species. Cultivated to extract pharmacologically active compounds, wild strains exhibit aggressive growth in artificial culture, hence the species might be a target for bioprospecting.



here, not because of its potential value as an NTFP, but by way of caution. In their heat-sterilized form they have documented medicinal properties but harvesting and marketing wild material could be hazardous. They have been shown capable of producing lung and brain infections (mycoses) when large concentrations of spores or fragments of the fungus are inhaled.

Most of the fungi occur on one or several specific host tree species. Their collection is therefore limited to areas where these trees grow.

Among these fungi, the woody conks can be harvested at any time of the year because they are slow growing and persist for many years. The edible wood decay fungi with medicinal value (*Hericium* and *Pleurotus*) fruit predominantly during the warmer months of spring and summer. They must not only be harvested in season, but preferably when they are fresh and at their peak of development. Sustainable harvest levels have not been analysed for any of these fungi, but their abundance and resistance to harvest pressures are related to the prevalence of their habitat, namely, the host tree species. [Source: extracted from D.A. Pilz, S.J. Smith, J. Schoreder and J.R. Freed. 2006. *Non-timber forest product opportunities in Alaska*. Gen. Tech. Rep. PNW-GTR-671. Portland, Oregon, United States Department of Agriculture, Forest Service, Pacific Northwest Research Station. 79 pp.]



## VIET NAM

### Medicinal herbs vanish in Son La

Medicinal plants, once prevalent on Hoang Lien Son Mountain in Son La province, are facing extinction because of uncontrolled harvesting by traders, according to experts. Most of the plants are being sold to China, from where about 60 percent of the herbs were originally imported.

The plants are popular because they can be sold for hundreds of thousands of dong. Even a small amount of *Coptis sinensis*, *Panax pseudo ginseng* or Ngu Diep ginseng

will raise between VND200 000 (US\$12) and VND500 000 (US\$30). Around 40 species of medicinal plants have completely vanished and at least ten more are on the verge of extinction. If this trend continues, there will be no more herbs left to sell.

Traders, however, are more concerned about feeding their families than worrying about the future of these herbs. One medicine dealer says his family always goes into the jungle when the plants are ready to be picked. On a good day, his family can earn more than enough money to eat and live comfortably for months.

The director of Hoang Lien Son National Park admits this is a major problem in the area; it is difficult to stop dealers because there are not enough forest officials to police the more than 10 000 households living in or around the park.

Stricter penalties are being requested to curb the uncontrolled trade of these plants to protect them for future generations. [Source: *Viet Nam News* [Viet Nam], 16 April 2007.]



## ZIMBABWE

### Promotion of wild plant foods

The University of Zimbabwe has started a project to promote wild plant foods, which can contribute substantially to household food and livelihood security for communities dotted around the country.

The project, which is being carried out in the Buhera district of the Manicaland province, is coordinated by Dr Maud Muchuweti of the Department of Biochemistry and a team of other experts in the field of food, nutrition and family and biological science. The Kellogg Foundation funded the project through a grant.

"We want to create more awareness about the value of indigenous wild plant foods and promote their effective utilization," Dr Muchuweti said. "Wild plant foods are effective as a survival strategy. We are identifying plant foods that are traditionally used by people in Buhera. We are documenting how the foods are prepared and preserved as well as their nutritional content."

This is a major milestone in the development of cultural information that will provide an authoritative look at many neglected food sources that can contribute to food security, agricultural diversification and income generation. It puts Zimbabwe on a firm footing in line with the Convention on Biological Diversity.

Wild plant foods are still being consumed in Zimbabwe and in most parts of Africa despite the threats of urbanization, environmental degradation, loss of indigenous knowledge regarding their identification, preparation and preservation and other factors.

The university project will involve identifying wild and famine plant foods, their preparation and preservation, nutrient analysis, and cataloguing and documenting other uses of wild plant foods to enhance livelihood security. According to Dr Muchuweti, commercial crops pose a threat of genetic erosion to indigenous food plants. Reduced exploitation of wild and famine plant foods is very unfortunate as some local foods may have better nutritional value than commercial ones. For example, muchakata or muhacha (*Parinari curatellifolia*), a medium to large evergreen tree which produces yellow-brown fruits (*hacha*) from May to November can be used to prepare "Mukandabota", a kind of porridge.

Communities dotted around Zimbabwe are rich in information pertaining to various aspects of how wild plant fruits, vegetables and tubers can be identified, prepared and preserved. Wild fruits and berries found in Zimbabwe include *checheni*, *chechete*, *nhunguru*, *matamba*, *mapfura*, *maroro*, *masau*, *matohwe*, *nhengeni*, *tsambatsi*, *umqokolo* and many others that can, among other things, contribute to the prevention of cardiovascular diseases. Wild vegetables include a variety of okra types – *derere mowa*, *derere hosi*, *derere njeje*, *derere nama* and other vegetables such as *bupwe*, *chipondamasvinya*, *nyevhe* and many others. Tubers include *chinyembanyemba*, *garidye*, *chifumuro*, *madhumbe*, *mufarinya*, *tseza*, *tsangadzi* and numerous others that have both medicinal and nutritional values.

Such foods form an integral part of the daily diets of many poor rural households. Wild foods are a source of important vitamins, minerals and other nutrients that complement the staple crops eaten by many of the more vulnerable people, including children and the elderly.

The importance of a wide range of wild plant species – including roots and tubers, leafy vegetables and fruits – needs to be documented in a botanical database for future generations.

The university project is also documenting an assortment of wild edible mushrooms, edible grass and seeds from communities in Buhera. [Source: *The Herald* [Harare], 7 February 2007.] ♣